

EMOH: A GAME TO TEST HOUSING

SPACE PREFERENCES

by

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EMOH: A GAME TO TEST HOUSING  
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## PREFACE

Non-verbal instruments are potential avenues of communication of housing needs between different educational and economic groups. This study is concerned with the development of an instrument that will non-verbally test housing space preferences. The instrument that was developed is a board game that collects data with three-dimensional scale models.

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## TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION . . . . .	1
Uses of Board Games . . . . .	1
Statement of the Problem. . . . .	2
Purpose . . . . .	3
Assumption. . . . .	3
Definition of Terms . . . . .	3
II. REVIEW OF LITERATURE . . . . .	5
III. METHODS. . . . .	8
Instrument. . . . .	8
Rules . . . . .	16
IV. FINDINGS . . . . .	22
Testing . . . . .	22
Uses of the Game. . . . .	23
V. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS . . . . .	26
Summary . . . . .	26
Conclusions . . . . .	27
Recommendations . . . . .	27
SELECTED BIBLIOGRAPHY . . . . .	29
APPENDIX A. . . . .	31
APPENDIX B. . . . .	34
APPENDIX C. . . . .	39

## LIST OF FIGURES

Figure	Page
1. Game Board . . . . .	11
2. Model Furniture on Graph Paper . . . . .	13
3. Model Walls and Furniture on Graph Paper . . . . .	14

## CHAPTER I

### INTRODUCTION

Understanding of the environmental needs of men is severely limited. William Ewald said:

As it is, we seem to know more about the environmental requirements of bees, Santa Gertrudis cattle, and chickens than we do about human environment. The reasons may be that we like to treat human environmental needs as a matter of folklore or serendipity.<sup>1</sup>

Currently, our knowledge of the effect of buildings on people is only through "untutored observations". Little of it has been converted into scientific knowledge.<sup>2</sup>

#### Uses of Board Games

Board games are commonly thought of as a form of play; however, for thousands of years men have used board games for non-recreational purposes. Sacred games are one example.<sup>3</sup> War games, a type of

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<sup>1</sup>William R. Ewald, Jr., Environment for Man: the Next Fifty Years (Bloomington, 1967), p.84.

<sup>2</sup>Ibid., p.20.

<sup>3</sup>Harold J. Murray. A History of Board Games Other Than Chess. (Oxford, 1952), p. 235

educational board game, have existed for centuries.<sup>4</sup> Many corporations and business schools use management games as a "standard item."<sup>5</sup> They are a direct outgrowth of military games.<sup>6</sup> Board games are played in college and high school classes to teach history, conservation, ecology, psychology, politics and economics; they are played in elementary schools to teach subjects ranging from reading to urban growth.<sup>7</sup> Within the last few years, board games have been developed to help teach planning and to aid in the study of urban problems.<sup>8</sup>

Board games have been used for a wide range of purposes throughout man's history. One reason being that men find it easier to understand simulations than reality.<sup>9</sup>

#### Statement of the Problem

This study seeks to develop an instrument that can be used in future housing research to test housing needs. It is hypothesized that a three-dimensional instrument can be more accurate and

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<sup>4</sup>Harold Guetzkow and Others. Simulation in International Relations. Englewood (NJ), 1963, p. 25.

<sup>5</sup>Ellen Perry Berkley. "The New Gamesmanship", The Architectural Forum. CXXIX (1968), p. 58.

<sup>6</sup>K.J. Cohen and E. Rehnman. "The Role of Management Games in Education and Research", Management Science. VII (1961) p. 131.

<sup>7</sup>Ellen Perry Berkley. "The New Gamesmanship", The Architectural Forum. CXXIX (1968), p. 58.

<sup>8</sup>Ibid.

<sup>9</sup>Richard L. Meier, "Game Procedure in the Simulation of Cities," The Urban Condition: People and Policies in the Metropolis (Leonard J. Duhl, ed.) New York, 1963, p. 349.

realistic for housing research than the traditional survey method of research.

### Purpose

The purpose of this study was to develop a research instrument that would allow respondents to express their housing values non-verbally, independent of the interviewer. People differ. Not all people have the education and verbal ability to express their thoughts with the traditional instruments such as questionnaires. A nonverbal method is needed, an instrument that will be valid and reliable for a wide range of people.

### Assumptions

It is assumed that by being involved in a simulation while playing the game the subjects will sufficiently demonstrate how they feel about their own housing.

### Definition of Terms

Board Game. A board game is a game that is "played on a specially arranged surface with pieces or 'men', whose powers of move and capture are defined by the rules of each game".<sup>10</sup>

Game. A game is a "recreational activity characterized by: (1) organized play, (2) competition, (3) two or more sides, (4) criteria for determining the winner, (5) agreed-upon rules."<sup>11</sup>

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<sup>10</sup>Harold J. R. Murray. A History of Board Games Other Than Chess. (Oxford, 1952), p. 1.

<sup>11</sup>John M. Roberts, Malcolm J. Arth and Robert R. Rush, "Games in Culture," American Anthropologist, LXI (1959), p. 597.



Housing Need. The total housing requirements of a family based on standards of minimum social acceptability.<sup>12</sup>

Simulation. An operating representation of the central features of reality.<sup>13</sup>

Value. A value is that which "defines a thing as desirable or undesirable and therefore explains the choice between different ends." <sup>14</sup>

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<sup>12</sup>Glenn H. Beyer. Housing and Society, (New York, 1965), p. 486.

<sup>13</sup>Harold Guetzkow and Others. Simulation in International Relations. Englewood (NJ), 1963, p. 25

Kingsley, Davis. "A Conceptual Analysis of Stratification," American Sociological Review, VII (1942).

## CHAPTER II

### REVIEW OF LITERATURE

Housing research covers a wide scope and wide range of methods. With few exceptions, it can be broken into studies based on surveys, library research, case studies and experiments.

Surveys collect information with questionnaires. Most housing research is done by this method; McCullough found that sixty per cent of the housing research done by home economists is by this method.<sup>1</sup>

Karen Kay Stewart used a card-sorting technique in her study of housing values. Much other housing research at Oklahoma State University used the questionnaire method, as in Carolyn Combrink's study of elderly widows or in Maie Nygren's study of high school students.

Studies based on library research use information from published materials, mostly from census data. This method is used in all studies that contain a review of literature, but few studies use only this method. It was found by McCullough that less than five per cent of the studies used the library method exclusively.<sup>2</sup>

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<sup>1</sup>Helen E. McCullough, "Housing Research Methodology," Journal of Home Economics, XXXV (1953), p. 571.

<sup>2</sup>Ibid.

In the case study method "data are collected by observing and recording the activities and reactions of one person or a group of persons to specific situations."<sup>3</sup> This type of research is used infrequently in housing, less than four per cent of the studies, according to McCullough.<sup>4</sup>

The experimental method uses laboratory tests under controlled conditions. Experimental housing research can be divided into physical tests of space, design, construction, decoration, lighting and house care; time-motion studies; and studies of the "physiological reactions of the homemaker as she carries on certain activities connected with housework."<sup>5</sup> Experimental studies are frequently used. McCullough found that they comprise thirty-one per cent of housing research.<sup>6</sup>

Most housing research tries to find the "ideal" house, as determined by housewives. There are three basic approaches: first, existing houses are evaluated and undesirable features are listed, second, the respondents are asked to identify their "ideal" and third, activities are identified and analyzed.<sup>7</sup>

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<sup>3</sup>Ibid., pp 571-1.

<sup>4</sup>Ibid.

<sup>5</sup>Ibid., p. 572.

<sup>6</sup>Ibid.

<sup>7</sup>Maie Nygren and Christine Salmon, "A Method for Defining Standards for Adequacy in Housing" (unpublished research report, Oklahoma State University, 1966), p. 2

Some housing studies are intended to increase a family's understanding of its wants, rather than add to the researcher's knowledge only.<sup>8</sup>

Some housing research is being done with games. For example, Neal Mitchell has developed a game that collects data by having the participants arrange three-dimensional models of housing components as they would like to have them. It is part of a game that is played on three levels: urban, neighborhood and the housing unit.<sup>9</sup>

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<sup>8</sup>Virginia F. Cutler. "A Technique for Improving Family Housing," Journal of Home Economics, XXXIX (1947), pp. 141-147.

<sup>9</sup>Ellen Perry Berkley. "The New Gamesmanship", The Architectural Forum. CXXIX (1968), p. 58.

## CHAPTER III

### METHODS

#### Instrument

In order of presentation, the instrument consist of check sheets that list rooms and furniture that might go into the rooms of a house. A playing board scale model furniture and fourteen by twenty-four inch sheets of one-half inch graph paper. The materials are shown in Figure 1, which follows. Flat, circular place markers and a six-sided die are also used. In an earlier form of the game there were scale model walls and cards with statements such as "Take an extra turn."

The check sheet, which is in the appendix, consists of a list of five rooms and twenty-seven pieces of furniture that might go into these rooms. There are ten blank spaces so that players will not feel they are restricted to the common items that are listed. The check sheet is a guide. It is used by the players to help organize and clarify their thinking. They list their choices before the game and have a written guide for their own future reference. Then, they can concentrate on playing the game and arranging their floor plans. This is faster. Without the check sheet, participants have chosen furniture with little thought and made frequent exchanges.

The playing board is similar to the boards that are used for most board games. It is a thirty-five by forty-five centemeters painted

illustration board. The board consists of a series of connecting paths that are divided into eighty rectangular spaces which are about two and one-half by three centimeters. The rectangles are labeled with numbers ranging from one to twenty-five. They have been so arranged that the player moving in any direction has equal opportunity for acquiring points. One rectangle, two and one-half by four and one-half centimeters, serves as the entrance to the paths; it is labeled "Start". After leaving the "Start" rectangle, players may move along any of the paths in any direction, reversing at will. Moves are determined by throwing a die. Only one die is used because there is no need for rapid movement around the board. Pieces of cardboard, numbered from one to six, may be drawn instead of throwing the die. Flat disks, such as buttons, are used as place markers.

An early form of the game board had similar paths. They contained: one "Start" space, sixty-five spaces with numbers ranging from one to twenty, fifteen colored spaces and a "Trade" space.

A player who landed on the "Trade" rectangle was allowed to exchange models of furniture without penalty. After the check sheet was introduced, this space was no longer needed or used, and was eliminated.

The board is decorated with a tempera design that represents the interior of a small house. The game paths are traffic paths through the rooms, with a furniture arrangement for decoration. The decoration on the board is in one-half inch equals one foot scale. This is the scale of the graph paper and furniture. The color scheme is blue and green with warm accents.

The original board was painted to represent the site plan of a housing development. This was found to be inconsistent with the object of the game. Many players found it was disturbing to make the transition between the one inch equals fifty feet scale of the board decoration and the one inch equals two feet scale in the dwelling they were creating.

There were seven pink, seven yellow and three green spaces. When a player landed on a colored rectangle he was required to draw a card. Cards were color coded. The twenty pink cards had statements giving advantages; while the twenty yellow cards had statements giving disadvantages. The ten green cards asked questions that were intended to provide problem situations. A list of the card content is in the appendix. Players were told about the division. They would seldom draw the thought or advantage cards, and would never draw the disadvantage cards. Point spaces with a predictable value were preferred. In an attempt to correct this problem, all cards were placed in one pile. In the final version they were eliminated, to reduce the playing time.

The numbers on the spaces were increased when the final board was developed: numbers between one and five were increased one, those between six and ten were increased two, while those between eleven and twenty were increased three. This further reduces the playing time by increasing the points gained each turn.

The furniture used is three-dimensional models in the one-half inch equals one foot scale, made of styrafoam. Two sets were purchased from "Plan-It-Kit" in Westport, Connecticut. Combined they provided: two double beds, four twin beds, four love seats, four

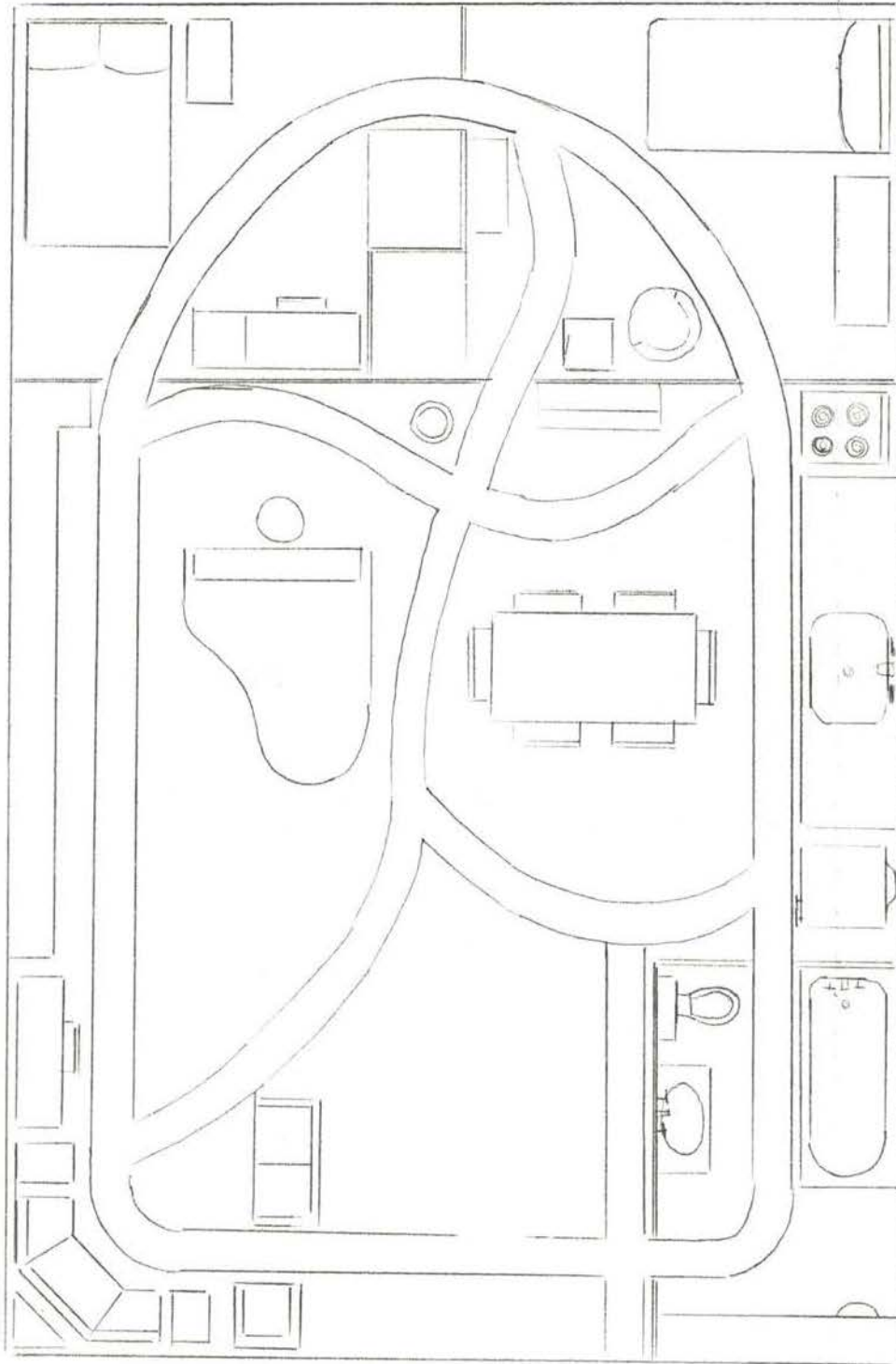


Figure 1  
Game Board

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curved sofas, twenty-two upholstered chairs of various sizes, eight unupholstered chairs, two square and two round coffee tables, two rectangular tables with six chairs attached, two round tables with four chairs attached, two grand pianos, and two organs or upright pianos. There are four cylinders, six triangular parallel pipeds, and thirty-six rectangular blocks of various sizes. The ambiguous blocks are used to represent all items that are not specifically provided: bookcases, cupboards, chests, counters, cabinets, and so on. Supplementary pieces were carved from blocks of styraform that were used in packing. The sets were supplemented with two bathtubs, two showers, four ranges, two rectangular tables, two desks, two double beds, and twenty-four rectangular blocks.

The furniture is three-dimensional because it is felt that people who are not familiar with scale housing layouts will be able to understand this type of representation better than one that is in two dimensions. It is less abstract.

The original function of the furniture was to remind the participants of the scale and to define the functions of the rooms. Furniture was found to be much more important. Most of the players think of the furniture they want and draw walls around it.

Originally, walls were also provided. They were pieces of one-eighth inch illustration board supported by plastic feet that were made from model beams. The walls were in one-half inch equals one foot scale and were equal to eight feet in height. They were in two, three, four, five, six, eight, ten and twelve foot lengths. Figure three shows the walls and furniture. The walls were eliminated because they were of little aid in a player's

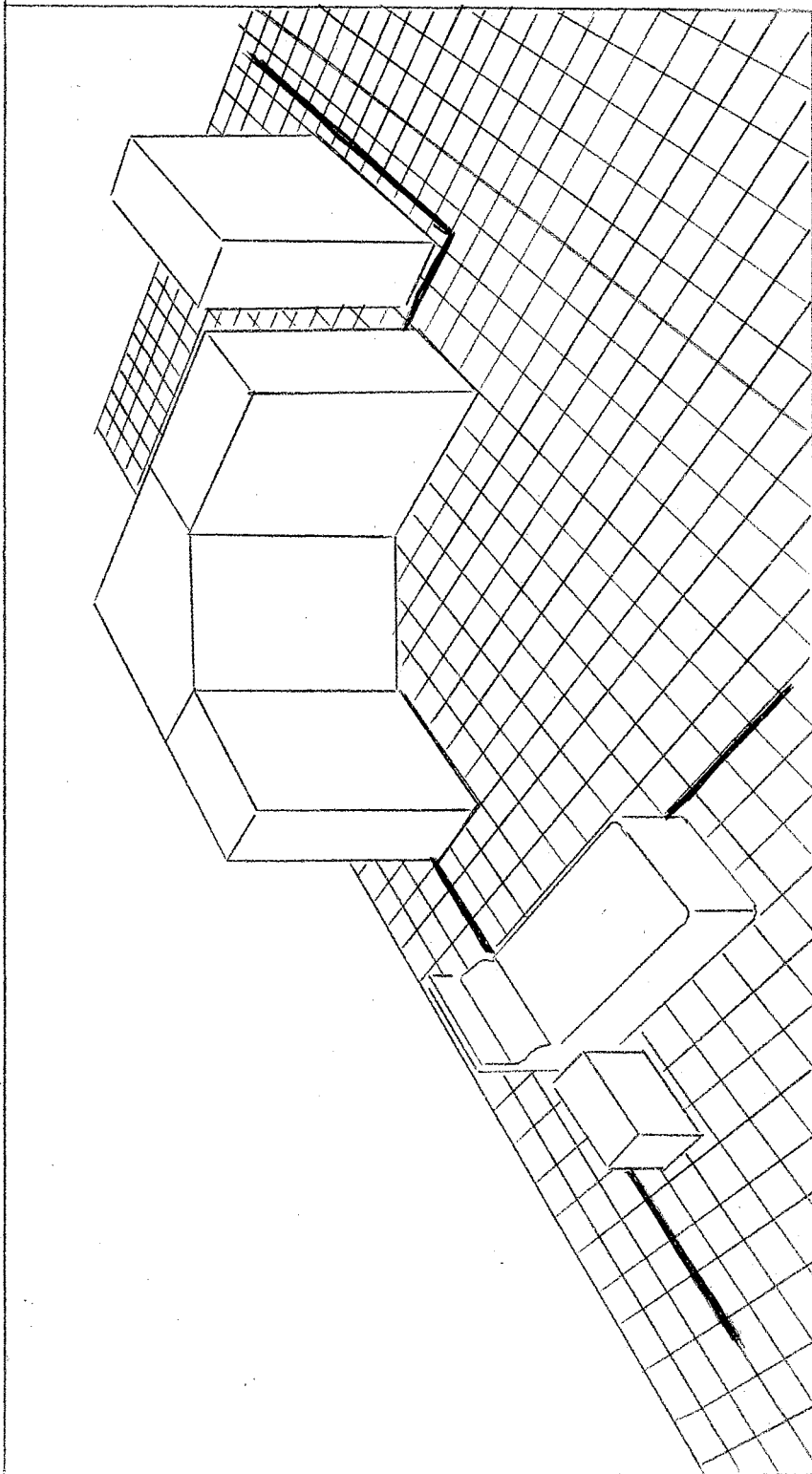


Figure 2  
Model Furniture on Graph Paper

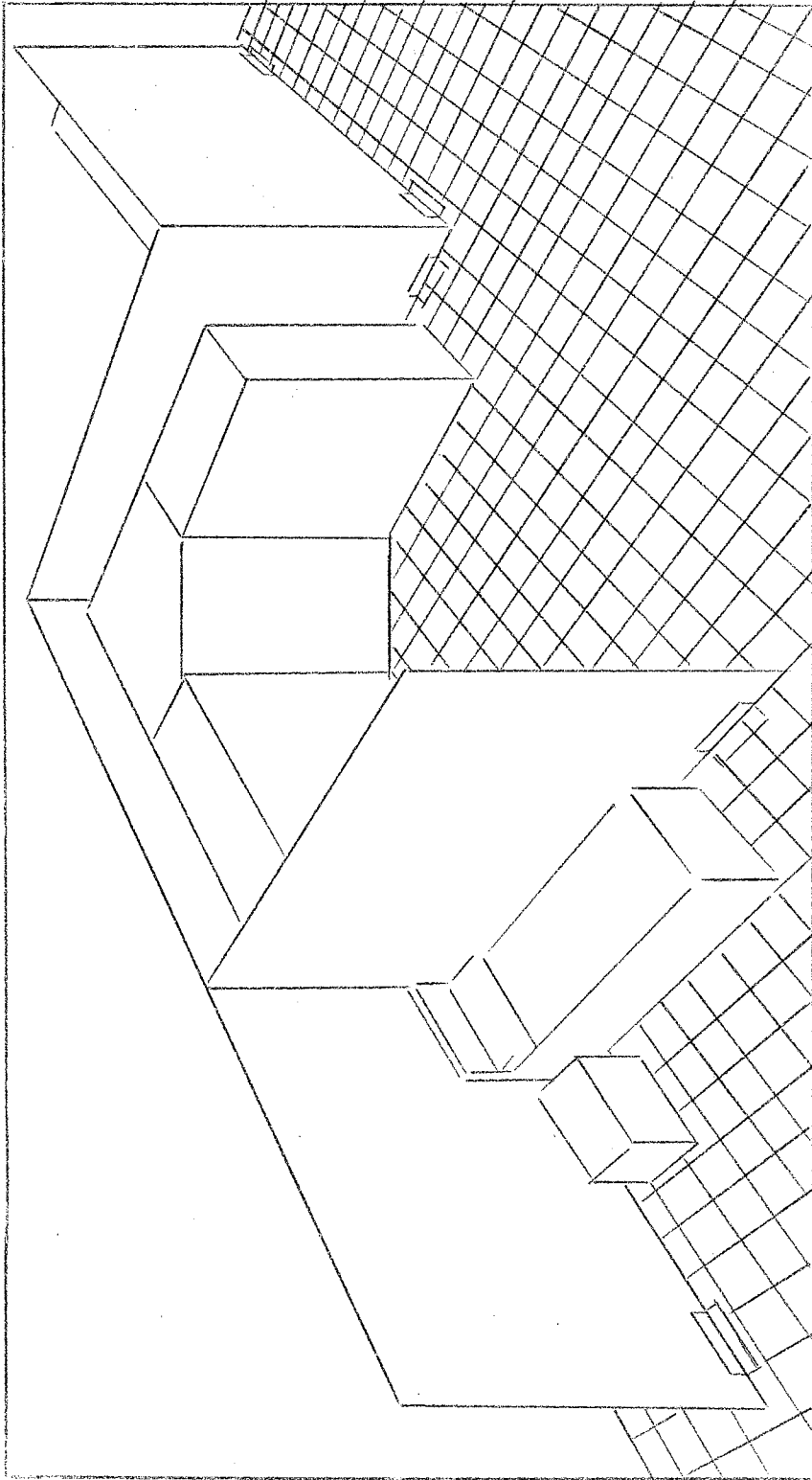


Figure 3  
Model Walls and Furniture on Graph Paper

understanding of enclosed space. They slowed down the game and frustrated the players. Lines drawn on the graph paper do not interfere with their view of the furniture. If the lines are drawn in pencil, players can work with them comfortably. Lines do not interfere with their thought patterns.

The furniture is arranged on large sheets of paper marked with a one-half inch grid. Each square represents one square foot.

Points are represented on small pieces of colored paper, two and one-half by four centimeters. They are in one point, five point and ten point denominations. The intervals are those in United States currency; they are familiar. One point is yellow, five points blue and ten points orange. The pieces of paper are a little small to handle; a larger size would be less awkward. It is felt, however, that there is less mental connection to real money with this method.

During the game session, the researcher acts as "banker", handing out the points and selling the furniture. This relieves the players of the duty so they can concentrate on their creations. It speeds up the game. Also, the researcher is available to answer questions and give encouragement without being conspicuous.

One of the major problems has been the time required to play the game. Throughout the testing and development, time was a problem. Most of the changes and simplifications in the mechanics of the game were for the purpose of shortening the playing time.

One hour, or a little less, is considered a good length of time for playing the game. At first, the mechanics of the game took twice as long. This was gradually reduced.

## Rules

The rule sheet, as it is given to player, appears in the appendix.

Rule 1 says that the first player to acquire and arrange all of the items on his check sheet is the winner. There is little difference between players. Because both are building a similar size of dwelling, they need about the same number of points to acquire all of their furniture. The numbers are arranged on the board to insure equality. The second player is not far behind the winner and is inspired to finish his home. There is a low level of competition and little remorse in losing.

Rule 2 says that there are two players. The game is most successful as a research instrument when there are only two players. When more than two play it tends to become recreation rather than research. It also takes more time to go through the mechanics of the game. When the game is played only for recreation, two to four people may play.

There are three types of dwelling units under Rule 3. The division is made by size. Type A is a one or two room apartment for one or two people. Type B is an apartment or small house for two to four people. It has between three and six rooms. The kitchen must be in a separate and distinct area, but is not required to be in a separate room. One bedroom is required. Type C is a house for any number of residents. It has at least seven rooms, a minimum of two bedrooms and a separate kitchen.

Requiring opponents to build homes of the same type means that they will acquire approximately the same number of items. This

provision has two implications: on the gaming level, it makes the game more "fair"; on the research level, it helps insure that the losers will complete their houses.

Rule 4 says that all dwelling units, regardless of size or number of inhabitants must contain: a kitchen area with a range, a sink, and a refrigerator; storage space; a dining surface and seating; a bed; living room seating; and a bathroom with a water closet, a shower or bathtub, and a lavatory. The bathroom is not included in the room count requirements. Except for the bathroom, each room must have at least one window. These minimum regulations are similar to those imposed by local and federal government regulations and by social customs. The game regulations impose some control over the design of the structure, but not so much as existing laws, codes and rules.

Rule 5 states that "Players will mark their check sheets before starting to play the game." Players are allowed to alter their check sheets if it is the result of a change of ideas, and is an accurate expression of their values. Changing the check sheet only to win the game is not encouraged. Because of the low level of competition, this is not so much a problem as might be expected.

Rule 6 states that "The number on the spaces on the game board determines the points that will be gained by landing on that space. Points can be spent as they are won, or saved to be spent later. However, savings cannot be more than twenty-five points. If an individual's savings exceeds this amount, the excess must be returned to the bank."

The medium of exchange is known as points because it is a common term that is used in many games. Points can be exchanged as money is exchanged but without many of the emotional implications. This game is not dated by changes in the currency, as many games have been. There is a restriction on the number of points that can be held by a player because many players prefer to acquire a large number of points and then stop the game while they purchase and arrange their furniture, and draw their walls.

Rule 7 states: "Players will buy their furniture with the points. Prices are given on the Price List. A player may buy furniture only during his turn." The Price List follows. Furniture is arranged on the list in alphabetical order for easy reference. The ratio of the point cost of items is approximately equal to the ratio of actual monetary costs. Points are used rather than dollars so players can think of items as being in their price range, whatever it might be. The participants are allowed to purchase items only during their turns, to add order to the proceedings. Even though this restriction has not been strictly enforced, it helped reduce the confusion.

Rule 8 reads: "Players may exchange furniture by selling pieces back for one-half of the purchase price. The new pieces are bought at full list price." It is thought that a participant might not like an arrangement once he saw a three-dimensional model of it, so he should be allowed to change it. This is considered a form of remodeling; items being replaced are valued as used, not new items.

## PRICE LIST

Bathtub	6 points
Bed, double	5
twin	4
Bookcase	1
Chair, plain	1
upholstered	4
Chest of drawers	7
China cabinet	2
Desk	5
Dishwasher	10
Dryer	10
Fireplace	10
Freezer	9
Kitchen cabinets (3' long)	3
counter (3' long)	3
sink in counter	8
Lavatory	2
Ottoman	2
Organ	10
Piano, grand	10
upright	8
Range	10
Refrigerator	10
Shower	5
Sofa	6



Stereo	7
Table, small	1
large	3
large w/4 chairs	7
large w/6 chairs	9
Television	8
Washing machine	9
Water closet	3

Rule 9 says that lines will be drawn to represent walls, windows and doors. After experimenting with other methods such as three-dimensional walls, with clip-on pictures of windows and doors, this was found to be the most satisfactory method. The length of time required to complete the game has been one of the major problems. Having players acquire points to exchange for these items increased the time unnecessarily. A majority of the players acquire and arrange their furniture and place walls around the furniture. Changes in the furniture arrangement frequently cause changes in the walls, windows and doors.

Rule 10 states: "If a player lands on a space occupied by his opponent, he may bump that player one square in the direction of his choice. If the bumped player goes to a square of higher value, he gives the other player the difference." This rule adds interest to the mechanics of the game. It can be used to increase the competition, especially when the game is played for recreation. If the participants are concentrating on their models and are disturbed by this added feature, they may elect to ignore it.

## CHAPTER IV

### FINDINGS

#### Testing

There was a series of approximately 75 testings of the instrument with small groups of two to five participants. All players were told before they began that they were taking part in a testing of the instrument and would be asked for their criticisms. After playing the game, participants in the last fifteen testings were asked to fill out a questionnaire. This was followed by a discussion period during which they asked questions and gave ideas.

The participants were chosen for their diversity of education and occupation. Only those people who enjoyed board games would agree to take part in the study. People who do not enjoy games, especially board games, refused to play this one. This reduces the population that can be studied with this instrument. Players who answered the questionnaire were asked if they liked to play Monopoly and other board games with the choice of "never", "seldom", "occasionally" and "frequently". All who participated in the test responded "occasionally" or "frequently".

It was discovered early in the study that having people play the game, fill out the questionnaire and discuss the instrument took much longer than the one hour that was estimated. Each session lasted at least two hours, some more than three hours. This limited

the number of sessions that could be conducted.

The game is not a successful research instrument when the participants feel they do not have enough time to play leisurely. Although the time remains the same, when players feel rushed they do not enjoy the game so much and are not so concerned about accurately expressing their preferences. Their main concern was in finishing and going to their next engagement. Most of the participants in this game, regardless of the stage of its development, indicated that the time involved needed to be reduced.

The game is most successful as a research instrument when there are only two players. When more than two played it tended to become recreation rather than research. With each additional player, more time is required to go through the mechanics of the game.

Murray has said, "The fact is that the enjoyment of a board game does not depend on its result."<sup>1</sup> That is true of this game. Once each player started developing his floor plan and furnishing his house, the participant was more interested in completing it than in the outcome of the game. Usually there is a low level of competition in the actual game and a high level of personal involvement in the dwelling unit that is being made.

#### Uses of the Game

The game, in its present form, can be used for research and recreation. It was designed as a research instrument.

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Harold J.R. A History of Board Games Other Than Chess (Oxford, 1952), p. 227.

When it is used as a research instrument, the game is played in the method that has been described. Homes are planned. Players have drawn lines to represent walls, windows and doors. The researcher draws around the furniture and adds any necessary labels. The result is a series of floor plans drawn in the one-half inch equals one foot scale on one-half inch graph paper. These floor plans show space usage in housing.

As recreation, the game may be played exactly as it is for research, or the number of players may be increased. Additional modifications may be made to meet the player's desires. For example, instead of carefully designing and building one dwelling unit of a specified size, players might compete to see who can acquire the largest amount of real estate in a set period of time. There is one main difference between using the game for research and for recreation. When it is used for research the floor plans are recorded on the graph paper and analyzed; when it is used for recreation this is not done.

In its present form the instrument has a limited value as a teaching aid. It was used as introductory material for an elementary housing class, to acquaint the students with space usage in floor plans.

After a brief introductory lecture, two students played the game while the others watched. This was followed by a discussion of both the lesson and the value of the game. All of the students felt that they learned to think about housing space by this method. Those who played the game felt they learned more than those who watched. They asked that other students share the experience. The

researcher believes that the instrument now has value as a teaching aid. It should be modified to increase its value by permitting more students to participate.

## CHAPTER V

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Summary

For thousands of years, board games have been used for a wide range of purposes in addition to recreation. Currently, the most common uses of games are for education and research. This study is concerned with the development of a board game that can be used in the research of housing preferences. This game will allow the participants to express their values by a non-verbal method.

The instrument consists of a game board, check sheets that list rooms and furniture that might go into the rooms, scale model furniture, sheets of one-half inch graph paper, place markers and a six-sided die.

To play the game, participants indicate on their check sheets the rooms and pieces of furniture they want. They move their markers around the spaces on the game board by throwing the die. The spaces on the game board contain numbers between one and twenty-five. These represent points that are gained by landing on the spaces. The participants exchange the points for furniture. They arrange their furniture on the graph paper and draw lines for walls, windows and doors. The first player to acquire all of the items on his check sheet is the winner. The researcher collects data in the form of floor plans.

No data on housing preferences was collected as this was not part of the present study. This study was the development of the instrument.

### Conclusions

1. The board game that has been developed is an instrument that can be used as a non-verbal method of collecting data on housing space preferences. It can be used on a varied population without restrictions of education or verbal ability.

2. The instrument can be used as an aid for teaching elementary housing.

3. The board game can also be used for recreation.

### Recommendations

The following are recommendations relative to further study in the area of research in housing preferences:

1. That this instrument be used to collect data on specific groups such as the elderly, the handicapped or the socially disadvantaged.

2. That the validity and reliability of this instrument be proven with a large and varied population. With this testing, data could be collected on specific groups.

3. That games be developed to aid in the teaching of housing on both the high school and college levels. With minor adaptations, such as the addition of floor plans, this instrument could be used as a teaching aid. The game should be modified so that more of the students will be able to participate in the game.



4. That non-verbal instruments be explored as potential avenues of communications of housing needs between different educational and economic groups.

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APPENDIX A

## RULES

1. The first player to have a finished home, with all of the items on his check sheet will be the winner.
2. The minimum number of players---two. It is recommended that a third person serve as the banker---dealer.
3. Players will decide before beginning to play what type of dwelling they will build. Both of the players will build the same type, either A or B or C.
  - A. An apartment for 1 or 2 people. It must contain 1 or 2 rooms.
  - B. An apartment or small house for 2, 3, or 4 people must contain 3 to 6 rooms. The kitchen must be in a separate and distinct area, but need not be in a separate room. There must be at least one separate bedroom.
  - C. A large house, for any number of people, must have 7 or more rooms. The kitchen is required to be in a separate room. There must be 2 or more bedrooms.
4. All homes must have a kitchen area with a range, a sink and a refrigerator; storage space; a dining surface and seating; living room seating; and a bed. A bathroom is also required. It must contain a water closet, shower or bathtub, and lavatory. The bathroom is not counted in the room number requirements. Except for the bathroom, each room must have a window.
5. Each player will mark his check sheet before starting to play the game.

6. The numbers on the spaces on the game board determine the points that will be gained by landing on that space. Points can be spent as they are won, or saved to be spent later. However, savings cannot be more than 25 points. If an individual's savings exceeds 25 points, the excess must be returned to the bank.
7. A player will buy his furniture with the points. Prices are given on the Price List. A player may buy furniture only during his turn.
8. A player may exchange furniture by selling pieces back for one-half of the purchase price. The new pieces are bought at the full list price.
9. Walls, windows and doors are drawn on the graph paper.
10. If a player lands on a space occupied by his opponent, he may bump that player one square in the direction of his choice. If the bumped player goes to a square of a higher value, he gives the other player the difference between the value of the square he was on before he was bumped and the square to which he moves.

APPENDIX B

## CARDS

## Advantage

1. You get a birthday gift of 3 points.
2. You just won the radio quiz show. Get 10 points.
3. You are working overtime. Get 6 extra points. You won't have time to spend them this turn, wait.
4. You get a refund from the Gas Company of 1 point.
5. You were just given a set of encyclopedias. Get a bookcase free.
6. Your ship came in, get 6 points.
7. You get, as a gift, one point or one small table.
8. Get 10 points as a Christmas bonus.
9. Get 5 extra points.
10. Get any 7 point item free.
11. The gas line blew up in your yard. There was no damage to your home. The Gas Company gives you 3 points.
12. You just won the bingo game. Get 3 extra points.
13. A furniture store is having a sale. Get any piece of furniture for 1 point.
14. Advance 1, 2 or 3 squares, your choice. This card may be kept until needed.
15. Get any 8 point item for 4 points or any 10 point item for 5 points.



16. You get a tax refund of 5 points.
17. Get 5 extra points.
18. Take an extra turn.
19. You just inherited 7 points.
20. Trade. This card may be held until needed.

#### Disadvantages

1. Special tax, pay 3 points.
2. Your brother-in-law burned a hole in your sofa. You no longer have a sofa. (If you have enough points you may buy another sofa at once.)
3. Hail broke some of your windows. Pay 3 points to have them repaired.
4. The pipes in your bathroom burst. Your furniture was damaged. Return all of the beds, sofas and upholstered chairs in the next room. Insurance gives you 5 points.
5. Dinner burned. Pay 1 point to have the smoke damage in your kitchen repaired.
6. A large stray dog got into your home and broke one of your small tables. Give it back. (If you have enough points you may buy another at once.)
7. Your TV is being repossessed. Give it back. (If you have enough points you may buy another TV at once.)
8. You were in a minor car accident. Lose 3 points.
9. Pay 4 points to have your TV repaired.
10. There was a bad storm. Pay 3 points to repair wind and water damage.

11. A bird got into your house while everyone was gone. It ruined an upholstered chair in your living room. Give it back. (If you have enough points you may buy another at once.)
12. There was a tornado and your home was damaged. Pay 4 points for repairs.
13. The building where you work burned last weekend. Lose 5 points in pay while the building is closed for repairs.
14. Lose 10 of your points.
15. Lose 7 points.
16. Pay 2 points to have bugs removed from your kitchen.
17. Your stove is broken and can't be fixed. Give it back and get a new one as soon as you have enough points.
18. There is a special tax to pay for new street lights. Pay 1 point.
19. You need a new bed. Give the old bed back and buy a new one as soon as you have enough points.
20. Termites are discovered under the sink. Pay 10 points to have them removed. For each turn you neglect the termites add 5 points to the cost.

#### Thought

1. Your neighbor's TV broke and they want to watch your TV. They have 4 children and a visiting aunt. Is your living room large enough?
2. Your sister asked you to store 6 large boxes for her. Where will you put them?
3. A family with 9 children is moving in next door. What changes

do you think will be necessary?

4. You just received a red plush sofa from your mother-in-law.  
What will you do with it?
5. You need a new refrigerator. What will you do?
6. Your daughter is about to become a teenager. Do you have enough  
bathrooms?
7. Your mother-in-law is coming to visit. Have you a place for her  
to sleep?
8. Your children have the flu. Will the TV fit into their room?
9. You have decided to take up a hobby you have always been  
interested in. Do you have a place to work on it?
10. A golf course is being built next door. If you have a picture  
window, do you still want it?

APPENDIX C

## QUESTIONNAIRE

1. Who will be living in the home you just designed?
  1. Yourself
  2. You and your husband or wife
  3. 1 or 2 children
  4. 3 or 4 children
  5. 5 or more children
  6. Other, state relationship

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2. What is the total number that will be living in the dwelling?
 

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3. What is your sex?
  1. Male
  2. Female
4. What is your marital status?
  1. Single
  2. Married
  3. Previously married, not currently
5. What is your age?
  1. Under 20
  2. 20-29
  3. 30-39
  4. 40-49
  5. 50-59
  6. 60-69
  7. 70 and over
6. If you are married, what is the age of your husband or wife?
  1. Under 20
  2. 20-29
  3. 30-39
  4. 40-49
  5. 50-59
  6. 60-69
  7. 70 and over
7. What was the last year of school that you completed?
  1. 1-8
  2. 9-11
  3. 12 (high school graduate)
  4. 1-3 years college
  5. 4 years college (graduate)
  6. 5 or more years of college
  7. Specialized training
8. If you are married, what was the last year of school your husband or wife completed?
  1. 1-8
  2. 9-11
  3. 12 (high school graduate)
  4. 1-3 years college
  5. 4 years college (graduate)
  6. Specialized training
9. What kind of work do you do?
  1. Laborer, section hand, domestic help
  2. Operate a machine in a factory or drive a truck
  3. Foreman in factory or warehouse
  4. Salesman or clerk in store or office
  5. Professional
  6. Student
  7. Housewife
  8. None of the above, it is \_\_\_\_\_

10. If you are married, what kind of work does your husband or wife do?
- 1. Laborer, section hand, or domestic help
  - 2. Operate a machine in a factory or drive a truck
  - 3. Foreman in factory or warehouse
  - 4. Salesman or clerk in store or office
  - 5. Professional
  - 6. Student
  - 7. Housewife
  - 8. None of the above, it is \_\_\_\_\_
11. Which of the following best shows your total family income?
- 1. Less than \$2,999
  - 2. \$3,000 - \$4,999
  - 3. \$5,000 - \$6,999
  - 4. \$7,000 - \$8,999
  - 5. \$9,000 - \$10,999
  - 6. \$11,000 - \$12,999
  - 7. \$13,000 and over
12. Did you enjoy playing the game?
- 1. Yes, a lot
  - 2. Yes, some
  - 3. No, not much
  - 4. No, not at all
13. How many times do you think you could play this game and still enjoy it? \_\_\_\_\_
14. Did you find the instructions clear and easy to follow?
- 1. Yes
  - 2. No
  - 3. Yes, except for \_\_\_\_\_
15. Did you enjoy being able to go around the playing board in any direction, along any route?
- 1. Yes, a lot
  - 2. Yes, some
  - 3. No, not much
  - 4. No, not at all
16. Do you think any changes should be made in the playing board?
- 1. Yes
  - 2. No
- If yes, what? \_\_\_\_\_
17. Do you think any changes should be made in the building materials?
- 1. Yes
  - 2. No
- If yes, what? \_\_\_\_\_
18. Do you think any changes should be made in the cards?
- 1. Yes
  - 2. No
- If yes, what? \_\_\_\_\_
19. Do you feel playing the game
- 1. Takes too much time
  - 2. Takes too little time
  - 3. Takes a comfortable length of time
  - 4. \_\_\_\_\_
20. How much do you feel that you can express your housing desires with this game?
- 1. Almost completely
  - 2. Some, but adequate
  - 3. Some, not adequate
  - 4. Hardly any
21. Do you like to play Monopoly and other board games?
- 1. Frequently
  - 2. Occasionally
  - 3. Seldom
  - 4. Never

22. What changes, other than those you listed previously, would make the game more meaningful for you?

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23. Other comments

VITA

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