THE RELATIONSHIP OF PROPORTION TO AESTHETIC PLEASINGNESS IN CLOTHING

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CHAPTER I

INTRODUCTION

Significance of the Study

In the fall of 1970, an uproar in fashion over the promotion of lengthened hem lines increased public awareness of the problem of proportion in clothing. Designers in praising longer garment lengths and new proportions have downgraded fashion of shorter garment lengths and varied proportions. With spring 1971, came even more diversity in lengths and proportions as peasant dresses, hot pants, warm pants, and knickers were introduced. All lengths gained acceptance, but proportions within those lengths still created a problem. Laurene Hempstead had recognized this in 1932, when she wrote,

> The principles of beautiful proportion are, of course, quite independent of style and mode. Unfortunately, styles and modes are often quite independent of beautiful proportion. As the eye becomes accustomed to seeing them, poor proportions may seem more beautiful than they really are.[1]

Is pleasing proportion determined by subjective judgment, by familiarity, or by the golden mean proportion? The purpose of this research was intended to add insight to this problem.

Proportion is an element expressed in all garments. Proportion of major units to the whole garment and internal parts of each unit to its major unit is expressed in every garment and ensemble. As a result, proportion does effect the visual aesthetic pleasingness of all clothing.

Proportion in clothing is a consideration faced by all those people within the fashion business as well as by those people not directly concerned with fashion, but concerned with presenting a pleasing personal appearance in their work and in their family life. The originator of fashion, the designer, takes the initial step in determining garment proportions for the fashion industry. To the designer, proportion is a basic consideration in deciding major aspects of the design such as where to style the vertical or circumference lines of a garment and minor design characteristics such as what size to make pockets, cuffs, or collars. The first test of a designer's taste in creating good garment proportions will lead to the approval or disapproval of his designs by his company or direct customer. The salesmen for a clothing manufacturing concern are the next group of people to deal with the designer's garments. They may use proportion as a selling point as they present their company's line. The second test of a clothing design is made by the retail buyer. He will not disregard the garment proportions in evaluating the saleability of the garments he buys for his retail outlet. The third and fourth tests of the aesthetic pleasingness of a garment are made by the customer. First, she will consider the style of the garment on the display rack, and then she will judge the suitability of the design to her own size and body proportions. She will probably not make a conscious effort to evaluate the garment in terms of proportion. The ultimate test of the good design of a garment and pleasing garment proportions is the popularity of the design as indicated by sales records and its dominance on the fashion scene.

Theory and Research Regarding Clothing Proportions and Clothing Aesthetics

Much has been written regarding garment proportion and some clothing aesthetics research has been conducted. Text books of clothing selection and clothing design usually devote a section to principles of design or art principles applicable to clothing. Proportion may be classified as an art principle or a principle of design.

In some cases application of this principle is delineated specifically and in other cases its applicability is related only vaguely. Helen Brockman in her Theory of Fashion Design (1965) applies the golden mean proportion specifically to clothing.

> The rectangular shape that represents a dress on the drawing board is usually divided into a waist and skirt at the normal waistline. This standard relationship of the two parts of a dress is satisfying to the eye, although it seldom has the 5-to-8 proportion that is known as the "Golden Mean." The eye accepts the normal, fitted waistline because the body indention at that position produces a pleasing outline or silhouette. In addition, the imperfect proportional relationship of the two parts to one another must be arbitrarily decided on, and the Golden-Mean Equation will establish eye-satisfying horizontal divisions.[2]

Her theoretical interpretation of this application was used to analyze garments or ensembles in this study.

Most recent research on the aesthetic aspects of clothing has dealt with the problems of aesthetic perception and aesthetic judgment of the samples tested. Less research has dealt with the analysis of costume in terms of its plastic elements or design principles. This has suggested a need for research in terms of the aesthetic nature of clothing apart from emphasis on the aesthetic judgment ability of the sample.

Statement of the Problem

The problem of this study was to compare the aesthetic pleasingness of clothing which follows strict application of the golden mean proportion to the aesthetic pleasingness of clothing which deviates from the strict application of the golden mean proportion. This study was an attempt to analyze the aesthetic nature of clothing by means of one principle of design, proportion. The purpose of this research was to discover if the application of the golden mean proportion to clothing as theorized by Helen Brockman and many others does lead to clothing designs more aesthetically pleasing than clothing designs not consistent with the golden mean proportion.

Subjecting this problem to research was possible because the proportions of some garments can be varied while the basic garment style remains relatively constant.

Relation of This Study to the Theoretical Framework

Each principle of design may be studied individually by application to clothing and the resulting aesthetic effects. A more complex approach to the analysis of aesthetic quality of clothing by means of the design principles might be an analysis of the effects of a combination of principles on clothing or the interrelationship between these principles as they are varied in clothing. Because the design principles are interrelated, altering one aspect of clothing may alter one or more other aspects simultaneously. The relationships occuring in each alteration may be compared for an increased understanding of the functions and interdependence of each design principle.

The Hypotheses

1. Garments which emphasize natural body proportions are aesthetically more pleasing than garments with proportions determined by strict application of the golden mean proportion.
2. Garment proportions not related to natural body proportions are more pleasing when the proportions are consistent with golden mean proportions than when the proportions deviate from the golden mean.
3. Proportion functions to alter the aesthetic pleasingness of clothing.
4. Currently fashionable clothing follows natural body proportions.
5. Currently fashionable clothing follows the golden mean proportion.
6. Currently fashionable clothing is aesthetically pleasing in its found form.
7. The strict application of the golden mean proportion does contribute to the aesthetic pleasingness of clothing.

Definition of Terms

1. Proportion is "the relationship in a design of one part to the other and of all parts to the whole."[3]
2. Natural body proportions are those defined by natural divisions of the parts of the body.
3. Golden mean proportion is a five-to-eight relationship between parts of a garment or unit of a garment to the whole garment or to the garment unit.
4. Scale refers to the size of units or wholes, usually considered in relation to the size of the body, or to other units and the whole. "It is expressed in the actual or apparent size of objects and the size and character of their detail."[4]

5. Aesthetic pleasingness or aesthetically pleasing refers to the characteristic of a garment or ensemble which makes that garment or ensemble preferred above another of its kind. Aesthetic pleasingness is determined by each subjective appraisal, but a large number of appraisals may indicate whether or not a garment or ensemble is more aesthetically pleasing than another garment or ensemble.
6. Found form refers to a garment that is borrowed directly from its source without alteration in style or proportion.
7. Currently fashionable is the characteristic of a garment determining its acceptance as a fashion at the time the research is conducted. The applicability of this term to a garment or ensemble is determined by concensus of the opinions surveyed.

The Variables

In this research the dependent variables included the relationship of internal garment parts to the respective garment unit, and the relationship of garment units to the whole garment or ensemble. Scale, rhythm, and emphasis were dependent variables which deviated as proportion was varied. The independent variables of color and texture were eliminated for the paired illustrations instrument. Balance and unity were independent variables controlled through maintenance of the design as proportion was varied.

Assumptions

The validity of this study was based on the following assumptions:

1. The proportion of each garment or ensemble illustration can be altered without changing its style or design significantly.

2. Rendering the currently fashionable garments in linear form with black ink on white paper will not destroy the fashionableness.
3. The fashionableness of the garment will not interfere with the aesthetic judgment of the garment.
4. Findings about clothing through the two dimensional representation may be generalized to clothing in three dimensions.
5. Findings from the analysis of proportion in currently fashionable garments can be generalized to analysis of proportion in any garment.
6. The population selected to determine the fashionable garments or ensembles are aware of current fashion as it is being worn and as it is being shown today.

Limitations of the Study

1. The consensus of opinion in the pre-selection of currently fashionable garments indicated the preference of the group making the selection and should not be generalized to any other group or population.
2. Garment proportions were analyzed in two dimensions rather than the three dimensions of clothing.
3. Proportion was analyzed by measurement of garment units without regard for the effects of optical illusions which may be present in garment designs.

FOOTNOTES

[1]Laurene Hempstead, Color and Line in Dress (New York, 1932), p. 131.

[2]Helen Brockman, The Theory of Fashion Design (New York, 1965), p. 84.

[3]Mary Mark Sturm and Edwina Hefley Greiser, Guide to Modern Clothing (St. Louis, 1968), p. 38.

[4]Ray Faulkner and Sarah Faulkner, Inside Today's Home (New York, 1960), p. 106.

CHAPTER II

THE REVIEW OF LITERATURE

Theoretical literature and reports of past research are relevant to the consideration of proportion in this research. Major sources of theoretical writings over the last fifty years were reviewed in detail while sources less significant were summarized in tabular form. Reports of research were selected for their pertinence to the research instruments.

Theoretical Writings

The discussion of proportion and scale in clothing selection and clothing design text books is standard throughout most. However, the extent of discussion and depth of consideration of this design principle, as well as other design principles vary from brief mention to detailed explanantion. At one extreme, some text books approached the problem in a vague manner revealing limited insight into these principles and elements. While, at the opposite extreme, other text books precisely prescribed the application of this principle. The following brief review is intended to be representative of the variety of clothing proportion discussions throughout various texts. Table I, page 15, following the reviews, summarized other theoretical writings in this subject matter area.

One of the earliest sources of theory regarding the use of art principles in clothing is Harriet and Vetta Goldsteins' book, Art in Everyday Life, first published in 1925. The authors discussed proportion, the

Greek Oblong, scale as an aspect of proportion, and natural body proportions. The Goldsteins called proportion the "law of relationships" and suggested the purposes of proportion were to create interesting space relationships, produce the best possible space relationships within set boundaries, and to understand scale in arranging and grouping objects.[1] The Greek Oblong was specified as a rectangle two units in width and three units in length. For those unable to judge proportion by eye, the Greek Oblong was recommended as a standard by which taste in proportion may be established. In addition the 2:3 proportional relationship, 3:5 and 5:7:11 were also mentioned. The application of the Greek proportion was suggested in the design of homes, linen, and clothing.[2] Scale, as part of the idea of proportion meant "(1) that the size of all the elements making up the structure have a consistent, pleasing relationship to the structure and to each other; and (2) that the size of the structure is in good proportion to the different objects combined with it."[3] With regard to clothing, the authors recommended that the scale of garments and accessories should be consistent with the size of the wearer in order to avoid contrast in size and resulting poor proportions.[4] The discussion of natural body proportions in Art in Everyday Life was extensive in specifying the relationships of body proportion in different figure types. The authors derived the average natural body proportions of seven and one-half head lengths from the crown to the ball of the feet from measurements of 350 women's figures.[5] This source of information regarding natural body proportions, proportions in clothing design, and scale is one of the earliest and most detailed explanations.

Clothing and Style by William H. Dooley is another early source of information regarding proportion in clothing and natural body proportions.

According to this author, good proportion was a result of clothing lines arranged to create a pleasing appearance.[6] For proportion in clothing, Dooley suggested the Greek proportions of 3:5, 5:8, 8:13, 13:21, and additional proportions "formed in a series when the sum of two parts creates a whole that bears the same relation to the large part as the larger part bears to the smaller."[7] According to Dooley, the model lay figure varied from seven and one-half head lengths to eight head lengths with the waistline falling at the third head length from the crown.[8] Scale is not mentioned in this source.

In a recent text, Harriet C. McJimsey in Art in Clothing Selection discussed proportion in a variety of applications, but not in depth from a theoretical point of view. She mentioned the importance of proportions in terms of the relationship of body parts, and she suggested specific ways to vary the apparent proportions of the body.[9] In defining proportion with respect to clothing, this author described proportion as "The design principle which deals with the relation of size of the parts to the whole and to each other . . . ."[10] She mentioned that good proportions can be found in the work of the Egyptian civilization, and she described the Greek proportion in terms of an arithmetic relationship, but suggested that judgment, rather than measurements, may best be used to evaluate proportional relationships. The author also discussed the relation of proportion to color,[11] and the interrelationship of scale and proportion.[12] Her basic outlook to the problem of proportion in all methods of application was in terms of the individual's ability to judge specific instances, not in measurement.

Erwin and Kinchen in their Clothing for Moderns are among those who mentioned proportion in moderate detail. By them, proportion is considered

an art principle required in the exercise of good taste. It was defined specifically as "interesting space divisions related to each other and the whole; scale."[13] The purpose of good proportion was "to create a satisfactory or beautiful relationship between parts and their relationship to the whole."[14] The authors also mentioned that fabric characteristics such as hue, value, intensity, and texture are relevant to the consideration of garment proportions.[15] The Greek proportion was briefly mentioned by these authors.

In The Arts of Costume and Personal Appearance by Grace Morton, proportion was considered to be a principle of composition.[16] Morton discussed the relationship of proportion in terms of the Golden Section. According to her source, "The small segment has the same relationship to the large segment as the large one has to the whole." This is approximately the same proportion described by the previous authors reviewed.[17] Included in her discussion of proportion was a general mention that optical illusion also functions to affect proportion. She acknowledged that "Proportion is an expression of the times, as our concepts of proportion change with alterations in silhouette and details of costume . . . . So subtle an art as that of costume must rely on the trained sense of proportion."[18] The author mentioned scale as it relates to proportion and she specified instances of applying proportion to clothing, to hats, and to hairdress.[19]

The Theory of Fashion Design is a major source in the consideration of garment proportions. In it, Helen Brockman stated, "Pleasing horizontal space divisions can be planned through the Golden-Mean formula, and through divisions of space into segments that have recurrent spacing or rhythm."[20] She said, in reference to the Golden Mean, that this relation-

ship which can be applied "by measurement rather than by eye, was developed by taking actual measurements of eye satisfying pieces of ancient sculpture where it was found that a 5-to-8 proportional relationship usually existed between the sections of which these figures were composed." Brockman also suggested that when this relationship is used in clothing design, proportions which are pleasing to the eye are obtained.[21] Her discussion of proportion in clothing was concluded by costume illustrations in which proportional relationships of garments were visually indicated in terms of large structural divisions and applied decoration.[23]

Marilyn J. Horn differentiated two aspects of proportion. The first was the relationship within a garment and its parts. The second was the consideration of clothing proportions used to camouflage unpleasing figure proportions. Horn identified the horizontal garment divisions of the waistline, jacket length, and hemline which affect proportions. In addition, she mentioned the relation of width to height in clothing. Her approach to the explanation of proportion was through the geometric relationship of lines in the Golden Mean Rectangle.[23] In the same manner that Brockman specified horizontal proportional relationships in illustrated examples, Horn presented pairs of similar garment illustrations with varied proportion. In both Horn and Brockman only horizontal relationships were considered.[24]

Julia Mockett Patrick's book, Distinctive Dress, is one of the most recent sources of information regarding clothing proportions. Her definition of proportion was consistent with definitions previously mentioned. However, this author specified proportion as relationships of distance to distance, area to area, and cubic volume to cubic volume.[25] Patrick refered to the "Greek Division of Space" or the "Golden Cut" as a point

division falling at any point between the one-half and two-thirds parts of the total length of a costume. Interest is created from this relationship because of the similar but varied proportions expressed.[26] In addition to this defined division of space into two areas, similar subdivisions were also recommended for any parts of clothing which are broken into smaller areas. Patrick referred to scale as a part of proportion dealing with the size relationships of clothing and accessories to the size of the body.[27] This recent source of information regarding proportion in clothing followed the same definitions and applications as early sources with the suggested extensions of proportion relating to area and cubic volume.

Table I, beginning on the following page, summarized sources printed from 1917 to 1969, which contain limited information regarding proportion, natural body proportions, and scale. Included in the summary were derivations, classifications, arithmetic equivalents of good proportional relationships, and the extent to which information was included regarding proportion, natural body proportions, and scale. The numbers representing extent of detail in the last three columns indicated the number of separate paragraphs or ideas related to the specific subject.

A summary of the above literature revealed that most of the authors considered proportion in terms of the mathematical relationships of parts of garments to the whole. The terms used to identify this theoretical proportion included Greek Proportion, Greek Rule, Greek Oblong, Greek Formula, Greek Law, Golden Section, Golden Mean, Golden Rectangle, Golden Oblong, and the Law of Relationships. A variety of mathematical relationships were indicated, and one geometric relationship defined by measurement could not be applied directly, but the use of taste could be

TABLE I

SUMMARY OF SOURCES CONTAINING INFORMATION ABOUT PROPORTION AND SCALE

Author, Title, Publisher, and Date	Classification and Derivation	Arithmetic Equivalents	Information about: Proportion	Natural Body Proportion	Scale
Ellsworth, Mable D. Textile and Costume Design. San Francisco: Paul Elder and Company, 1917.	Principle of Design			2	
Traphagen, Ethel H. Costume Design and Illustration. New York: John Wiley and Sons, Incorporated, 1918.	Greek law derived from classic art.	5:7:11 Between 1/2 and 2/3	6	3	
Story, Margaret. Individuality and Clothes. New York: Funk and Wagnals Company, 1930.			1		1
Baker, Lilian C. W. Clothing Selection and Purchase. New York: The Macmillan Company, 1931.	Design Principle Greek Law Golden Mean	Between 1/2 and 2/3 3:5, 7:11	2	7	

TABLE I. (Continued)

Author, Title, Publisher, and Date	Classification and Derivation	Arithmetic Equivalents	Information about: Proportion	Natural Body Proportion	Scale
Hempstead, Laurene. Color and Line in Dress. New York: Prentice-Hall, Incorporated, 1932.			2	1	10
Hopkins, Marguerite Stotts. Dress Design and Selection. New York: Macmillan Company, 1935.	Greek Rule for Proportion		7	1	
Matthews, Mary Lockwood. Clothing: Selection and Care. Boston: Little, Brown and Company, 1936.			2		
McFarland, Frieda Wiegand. Good Taste in Dress. Peoria, Illinois: The Manual Arts Press, 1936.				7	
Ryan, Mildred Graves. Your Clothes and Personality. New York: D. Appleton-Century Company, 1937.	Greek Costume	Between 1/2 and 2/3	2		
Baxter, Laura and Alpha Latzke. Modern Clothing: A Text for the High School Girl. New York: J. B. Lippincott Company, 1938.		3:4, 5:7, 5:8	2	6	

TABLE I. (Continued)

Author, Title, Publisher, and Date	Classification and Derivation	Arithmetic Equivalents	Information about: Proportion	Natural Body Proportion	Scale
Latzke, Alpha and Beth Quinlan. Clothing: An Introductory College Course. New York: J. B. Lippincott Company, 1940.	Greek Proportions		1	15	
Featherstone, Marion and Dorothy Howerton Maack. Elementary Costume Design. New York: John Wiley and Sons, Incorporated, 1944.			1	2	1
Craig, Hazel Thompson and Ola Day Rush. Clothes With Character. Boston: D. C. Heath and Company, 1946.	Law of Greek Proportions Basic Principle of Design	3:5, 5:8, 8:13	1	3	
Erwin, Mabel D. Clothing for Moderns. New York: The Macmillan Company, 1949.			2		1
Evan, Mary. Fundamentals of Clothing and Textiles. New York: Prentice-Hall, Incorporated, 1949.	Greek Formula Golden Oblong Principle of Design	2:3	2		

TABLE I. (Continued)

Author, Title, Publisher, and Date	and Derivation	Equivalents	Information about: Proportion	Natural Body Proportion	Scale
Ryan, Mildred Graves and Velma Phillips. Clothes for You. New York: Appleton-Century-Crofts, Incorporated, 1954.	Golden Oblong Golden Section	2:3	9	4	
Oerke, Bess V. Dress. Peoria, Illinois: Charles A. Bennett Company, 1956.	Principle of Design Arrangement		1		
Carson, Byrta. How You Look and Dress: A First Course in Clothing. New York: McGraw-Hill Book Company, Incorporated, 1949, 1959.		3:5	3	2	
Lewis, Dora S., Mabel Goode Bowers, and Marietta Ketunen. Clothing Construction and Wardrobe Planning. New York: The Macmillan Company, 1960.	Principle of Design		1		1
Sturm, Mary Mark and Edwina H. Grieser. Guide to Modern Clothing. New York: McGraw-Hill Book Company, Incorporated, 1962.			3		
Chambers, Helen G. and Verna Moulton. Clothing Selection. New York: J. B. Lippincott, 1969.	Principle of Composition	2:3, 3:5, 5:8	4	7	1

applied directly and was preferred. One author recommended the use of this type of measurement in defining dress proportions.

Reports of Research

Though the investigator was not able to identify any research testing the theoretical statements regarding proportion in clothing, some past research was relevant with respect to the development of the research instruments.

In 1967, Susan M. Sassaman devised a paired illustrations instrument in which two similar illustrations were presented as one item, but subtle and major line differences existed between the two presentations of each pair. Each respondent was asked to detect and record the variations in line between the two items of each pair.[28]

In the same year, Sandra Taylor Bailey also used a paired illustrations instrument to assess the aesthetic judgment ability of her varied samples. Subject matter of the paired illustrations were historic costume, foreign costume, and one current style. Each item consisted of two similar authentic styles, with one example conforming to principles of good design, and one non-conforming example.[29]

Both examples of research presented the paired illustrations instrument in which two similar illustrations were grouped to form each item. The instruments were devised to test the perception or aesthetic judgment ability of the samples involved.

FOOTNOTES

[1]Harriet Goldstein and Vetta Goldstein, Art in Everyday Life (New York, 1940), p. 62.

[2]Goldstein, pp. 63-70.

[3]Goldstein, p. 81.

[4]Goldstein, p. 85.

[5]Goldstein, p. 309.

[6]William H. Dooley, Clothing and Style (Boston, 1930), p. 35.

[7]Dooley, p. 45.

[8]Dooley, p. 40.

[9]Harriet C. McJimsey, Art in Clothing Selection, (New York, 1963), p. 54.

[10]McJimsey, p. 182.

[11]McJimsey, p. 185.

[12]Mabel D. Erwin and Lila A. Kinchen, Clothing for Moderns, (New York, 1964), p. 102.

[14]Erwin and Kinchen, p. 106.

[15]Erwin and Kinchen, p. 107.

[16]Grace Morton, The Arts of Costume and Personal Appearance, (New York, 1964), p. 68.

[17]Morton, pp. 82-83.

[18]Morton, pp. 100-101.

[19]Morton, pp. 100, 101, 248.

[20]Helen Brockman, The Theory of Fashion Design, (New York, 1965), p. 83.

[21]Brockman, p. 84.

[22]Brockman, pp. 85-87.

[23]Marilyn J. Horn, The Second Skin: An Interdisciplinary Study of Clothing, (Boston, 1968), pp. 262, 263.

[24]Horn, p. 264.

[25]Julia Mockett Patrick, Distinctive Dress (New York, 1969), p. 90.

[26]Patrick, p. 91.

[27]Patrick, p. 96.

[28]Susan M. Sassaman, "Perception of Subtle Line Differences in Clothing as Related to Exposure to a specified Educational Program, Level of Aesthetic Value, and Clothing and Art Experience" (unpub. M. S. thesis, Pennsylvania State University, 1967), pp. 96-97.

[29]Sandra Taylor Bailey, "Development of an Experimental Picture Test of Aesthetic Judgment of Costume" (unpub. Master's thesis, Ohio State University, 1967).

CHAPTER III

METHODS AND PROCEDURES

The research design was divided into three distinct parts. The first part dealt with the pre-selection of fashion items in the form of fashion photographs from current publications. The second part was the analysis of the pre-selected fashion items and the development of alternate garment designs to form the second member of each pair in the final instrument. The third part was the selection of preferred styles from the resulting analyzed paired illustrations, extent of preference for individual illustrations, extent of preference for proportion in individual illustrations and extent of preference for proportions in non-clothing items.

Design of the Instruments

The pre-selection instrument consisted of fifty fashion plates taken from current sources of clothing. The plates were mounted on white paper and randomly organized into a notebook numbered, and randomly presented to the sample. The data were collected by forced choice opinionnaire.

Design of the analysis of the items selected from the pre-selection instrument followed these steps. Each item was analyzed by use of rectangles representing the total length and the major divisions of the garment. Separate units were analyzed according to each internal division.

A parallel set of rectangles was used to alter proportions from the original proportions of the garment. A second part of this analysis consisted of comparing natural body proportions to original garment proportions by drawing horizontal lines across the lay figure at the natural divisions of the body to "lines of comparison" on either side of the model. Along the lines of comparison, the divisions of the garments were compared to the divisions of the natural body. The comparison was evaluated to determine whether or not the proportions of the garment followed the natural divisions of the body.

These rectangles provided a guide for redrawing each fashion item with varied proportions for completion of the analysis. The original and deviated garment illustration formed a pair mounted side by side to compose each item of the second instrument.

The paired illustrations instrument consisted of twenty items derived according to the above method. Each of the population received a forced choice questionnaire indicating a preference for one of the pair of each item, extent of preference for each garment illustration, extent of preference for the proportions in each garment illustration, and the extent of preference for the proportions in non-clothing items and a personal data questionnaire. These instruments provided raw data for the selection of garments considered to be aesthetically pleasing as compared to their paired comparison, for indication of extent of pleasingness in design and proportions of each separate illustration, for extent of pleasingness of proportions in non-clothing items and for description of the population.

Descriptions of the Populations

The populations in this study consisted of upper division undergraduate and graduate or special students enrolled in advanced Home Economics courses during the first session of summer school at Oklahoma State University in 1971. All students meeting the above requirements were invited to participate in providing data. Thirty-seven students voluntarily provided data for the pre-selection instrument. Of those thirty-seven, thirty-one returned for the final collection of data.

Members of the population reflected the varied Home Economics student body typical of summer sessions. Two thirds of the population were residents of Oklahoma while the remaining members had come from Arkansas, Colorado, Minnesota, Nebraska, New York, and Texas. The occupation of half the population was teaching. Other cocupations included student, housewife, interior designer, extension home economist, and area consultant for a state department of education. Ages of the members ranged from twenty-two to forty-eight years with the average age of 28.9 years. Educational level indicated that members of the population ranged from undergraduate students to beginning Doctoral students. The predominant educational level was the beginning Master's student. The extent of education, experience with the principles of design, and teaching of both art and clothing were indicated by the members of the population. Extent of familiarity with art principles as taught in art courses at the high school and college level ranged from none to continuous teaching of art principles in clothing courses. Twenty-five of the thirty-one respondents indicated previous contact with the art principles through either or both education and teaching in art and clothing courses.

Methods of Data Collection

The following paragraphs specify the source of data as it was collected from the various instruments of the study.

Requisite information: What garments or ensembles were considered fashionable by the Home Economics summer school students in advanced level coursework at Oklahoma State University? The pre-selection instrument was designed to derive the consensus of opinion as to what clothing items were considered currently fashionable by the majority of group members. The pre-selection instrument was composed of fifty fashion garments or ensembles. This instrument was presented individually and to small groups. Each individual in the sample recorded his data on the pre-selection opinionnaire answer sheet. From the individual answer sheets, the data were compiled on Table III, page 54. Analysis of this data revealed garments considered most fashionable, and the source of those garments.

Requisite information: Did current fashion follow natural body proportions? Did current fashion follow golden mean proportions? The analysis of each item indicated consistency or inconsistency with natural body proportions. The individual analyses were made according to the example shown in Figure 1, Appendix B. From the analyses the garments were decided to be one of three types, proportioned according to the body, proportioned according to the golden mean, or deviating from the proportions of either of the first two. This information was recorded in Table IV, page 63.

Requisite information: Were natural body proportioned garments more pleasing than golden mean proportioned garments? Were golden mean proportioned garments more pleasing than garments deviating from the golden

mean proportion when natural body proportions were not incorporated in the design? Was currently fashionable clothing aesthetically pleasing in its found form? Did application of the golden mean proportion contribute to the aesthetic pleasingness of clothing? Did changing proportions in clothing change the aesthetic pleasingness of that clothing? The analysis of data from the paired illustrations instrument provided the information required to answer these questions. The collection of data consisted of presenting an answer sheet with twenty forced choice alternatives to each member of the population. Each plate was presented for fifteen to twenty seconds and each group member selected one alternative from each item. This data were collected on Tables VI, VII, VIII, IX, and X in Appendix C.

Procedures: Preparation, Administration and Analyses of the Instruments

The detailed procedure for the pre-selection of fashion garments is described below. A complete format may be found in Appendix A.

a. Creation of the pre-selection instrument.

(1) Current publications were gathered from those sources which were readily available. Sources are listed in Appendix A, Table II.

(2) From the above sources, photographs were selected according to the following criteria.

(a) The presentation of garments. Garment proportions had to be readily observable. Standing models best qualified, but others were not eliminated when proportions were visible.

(b) The total garment had to be accessible to view.

(3) Photographs were trimmed to eliminate advertisements, identifying labels, excess background, and other garments which might have confused or biased the selector.

(4) Each fashion illustration selected was mounted on plain white paper.

(5) The source of each illustration was indicated by code on the reverse side of the mounted plate, according to code numbers in Table II, page 53.

(6) The plates were placed face down and drawn randomly for their placement in the pre-selection instrument.

(7) Selections were numbered consecutively from the first one drawn.

(8) The plates were then arranged randomly for individual or group presentation.

(9) An opinionnaire answer sheet with fifty items was formulated to record the opinions of each person consulted. Appendix A, page 52, includes a sample of the answer sheet.

(10) Directions for the opinionnaire were stated at the top of the answer sheet.

b. Selecting fashion items from the pre-selection instrument.

(1) The series of plates were presented to the population.

(2) Presentation of the plates was made individually and in small groups.

(3) The opinions not collected by the deadline were disregarded.

(4) The raw data collected from the opinionnaire were tabulated and recorded according to Table III in Appendix A. The totals for each plate and the source of the photographs

(4) were indicated.

(5) The plates were ordered from the one receiving the least number of negative votes to the one receiving the greatest number of negative votes.

(6) The first twenty plates selected were analyzed by the following procedures. These plates are indicated by an asterisk in the last column of Table III.

The detailed procedure for the analysis and presentation of the currently fashionable garments or ensembles is described below.

a. Each garment illustration was analyzed according to the following procedure. Appendix B includes examples of the analysis and presentation of the second instrument.

(1) Each original fashion photograph was sketched on a standard lay figure.

(2) Measures were made in centimeters to aid in calculations.

(3) The analysis of the original garments was made by rectangular sections according to the following procedure. Figure 5, Appendix B, specified the format.

(a) A rectangle the length of the garment was drawn and measured in centimeters.

(b) Each major division was indicated by a horizontal dashed line on the rectangle.

(c) A second rectangle of the same length was divided by a solid line according to the major divisions of the garment. The length of each unit was indicated within the unit.

(d) Significant smaller units within each major unit

(d) were analyzed by the above described method.

(4) Using a second set of parallel rectangles based on the total length of the first set of rectangles, the proportions of the garments were altered to be consistent with the golden mean. The alterations were made in the direction of the original tendency of the design to vary from the golden mean. Thus, the smalller section of a unit was made to conform to the smalller section of the golden mean proportion. As a result, sub-units varied in size. The proportions of smaller units were altered according to the golden mean proportion. The result was a second set of rectangles varying from the original set. When the original proporitons of the garment were consistent with the golden mean proportions, the second set of proportions were varied to create a garment deviating from these proportions. The proportional relationship present in each rectangle, in both the original and deviated proportions, was indicated in fractional form and in decimal form below the respective rectangles.

(5) A third analysis was made. The natural divisions of the body were indicated by broken lines extending to the "line of comaparison" on either side of the model. Two lines on either side of the figure acted as a projection line between the left rectangles and center, and between the center and right rectangle. Divisions of the natural body proportions were projected on the inside of each line. Divisions of the proportions were projected on the

(5) outside of each line. Intersection of these divisions along the projection line indicated the presence of naturaly body proportions within the garment. The intersection was circled. The total number of intersecting divisions was indicated below each line of comparison as a numerator with the total number of garment divisions as the denominator. The decimal value of the fraction was calculated. A decimal value of .75 or greater was considered adequate indication of natural body proportions.

b. Each garment was presented according to the following procedure.

(1) The original garment was sketched in black felt tip pen. The altered proportions were sketched on the same figure with a dotted line.

(2) Each of the two variations were separately sketched on translucent paper.

(3) The two illustrations were mounted side by side in either order depending on chance as they were selected. See Figure 6, page 59.

(4) The item number for each plate was selected randomly, and the number was place above the illustrations. Below each figure, left or right was typed to correspond to the forced selection on the answer sheet. An illustration number was also typed below each figure for reference in parts II and IV of the instrument.

(5) Each plate was placed in an acetate cover to standardize its appearance.

(6) The twenty plates were arranged according to their item

(6) number. Appendix B includes the legend indicating the type of porportion in each illustration of each item and the illustration which prepresents the found form of the item. Table III indicated the proportional types present in each part of each illustration of this instrument.

c. Selection, in Part I, of the preferred garment from each paired illustration item was made by the following procedure.

(1) The series of twenty paired illustrations was presented to the thirty-one participants. Directions were included on the questionnaire.

(2) A preference questionnaire was distributed to each member of the group.

(3) Plates were presented to each individual of group for fifteen to twenty seconds.

(4) Preference questionnaires were collected for all participants and raw data were tabulated according to the table on page 64. See Appendix B.

(5) Selection of the preferred garments was made from the totals of tabulations recorded on page 64.

d. In Part II, extent of preference for each garment illustrated in the paired illustrations instrument was assessed by the following procedure.

(1) The series of forty illustrations was presented to the population one at a time in order from one to forty.

(2) The answer sheet for Part II allowed each member to indicate the extent to which she liked or dislike the garment. This was recorded on a scale from one to five.

e. In Part III, extent of preference for proportion in non-clothing items was assessed according to the following procedure.

(1) A series of twenty illustrations was presented to the population one at a time in order from one to twenty. The answer sheet for Part III was formulated according to the method above.

(2) Each illustration indicated the proportional relationships evaluated by the individual by a set of brackets labeled A and B.

f. In Part IV, extent of preference for proportion in garments of the paired illustrations instrument were assessed according to the following procedure.

(1) The same forty illustrations of Part II were presented to the population for a second assessment. Variations were made in the directions.

(2) The population was asked to analyze the proportions of each garment and to indicate the extent of their liking or disliking or each garment on the basis of proportion.

(3) Preferences for garment proportions were recorded according to the answer sheet in Appendix B, page 62.

g. In Part V, the characteristics of each member of the population were recorded according to the personal data questionnaire.

Procedures: Analysis of Data

The analysis of results was accomplished through the use of tables and graphs. The graphs are included in the body of Chapter IV. Appendix C includes the series of analytic tables.

The graphs recorded data from Parts II, III, and IV of the final instrument. Figure 1, page 38, the graph of the Extent of Preference for Proportions in Non-Clothing Items revealed the relationships existing between the average preference and the proportions of each non-clothing item. The mean of the items falling within the range of the golden mean from 3/5 to 2/3 or .6000 to .6666 on these graphs was calculated separately from the mean of items not conforming to the golden mean proportion. This identical procedure was used to reveal relationships between extent of preference for proportion in clothing in Figures 2 and 3.

Table IV acted as a legend for providing data for subsequent tables.

Table V in Appendix B was set up for providing a total of raw scores from the paired illustrations instrument. Each item number was represented and the right choice was tabulated and totaled. The left choice was found by subtracting the right total from the overall total of the questionnaires completed. All of the raw data collected was recorded in Table V.

Table VI recorded items in which natural body proportions were presented in comparison with golden mean proportions. The number of points collected for each type of proportion was recorded, and the position of the illustration was indicated in parentheses. The totals at the bottom of the two left columns provided total points received by each proportion type. The average points received by each proportion type and the per cent of the points was indicated below the total points. Results from this analysis indicated an answer for the first hypothesis.

Table VII provided the same analysis of data as Table VI, but the golden mean proportion was compared to proportions deviating from the golden mean. The results of this analysis answered hypothesis two.

Table X indicated the distinction created by changing the proportions of the item. Information for the first two columns was recorded from Table V. The third column indicated a difference of preference for the pairs of each item. Column four indicated the absolute value of the difference in preference by subtraction of the raw scores. The fifth column showed the difference over the total points recorded and the sixth column showed the per cent of perceived difference in proportions. At the end of the third column was the total number of cases in which changing proportion created a difference in preference. At the end of the sixth column was a formula to determine the average percentage of distincitons made by variation of the proportions. Analysis of these results answered the third hypothesis.

Hypothesis four was answered by testing and totaling the number of items which followed natural body proportions in their found form. The percentage of the total indicated the extent to which current fashion followed natural body proportions. The information for this was obtained from the proportion analysis of each garment.

The above approach was also used to determine the extent to which current fashions followed the golden mean proportion in answer to hypothesis five.

Table VIII indicated the preference for proportions as they are found in fashion as opposed to preference for altered proportions. Information from Tables III and V was used to indicate the number of preference points made for the found form and the altered form of each item. The totals beneath the first two columns were percentages of preference for each type. The results from this analysis answered hypothesis six.

Table X compiled information from Table III and Table V in the same

manner as the above to answer hypothesis seven.

The Pilot Study

The pilot study was formulated on the same hypotheses as the final study. However, the original study consisted of the pre-selection instrument and the paired illustrations instrument, but did not assess extent of preference for separate garment illustrations, extent of preference for proportions in clothing, extent of preference for proportions in non-clothing items, or personal data about the populations. The two instruments of the pilot study were administered to two different populations. Data for the pre-selection instrument were obtained from fifty-one faculty members, graduate students, and seniors in the Department of Clothing, Textiles and Merchandising at Oklahoma State University during November, 1970. Data for the paired illustrations instrument was collected from 164 undergraduate students enrolled in an introductory clothing course during December, 1970. As a result of the pilot study, directions for instruments were clarified, and the following improvements were made in the instruments. The pre-selection instrument was reduced from ninety-eight to fifty plates. Illustrations in the second instrument were sketched on a standard lay figure of eight head lengths in order to present identical models posing in a direct front view. This provided more accurate detail with regard to the proportions of each illustrated garment. The additional instruments described above were developed to explore more exact relationships between preference for proportions, garments, and garment proportions and aesthetic pleasingness in clothing. Findings revealed by the pilot study were identical to findings of the final study. However, percentages involved with the exact measure of

each hypothesis varied to a small degree. Similarity in the findings of the pilot study and the final study tend to strengthen the acceptance or rejection of specific hypotheses in the final study.

CHAPTER IV

THE FINDINGS

Observations from the Pre-Selection Instrument

The pre-selection instrument was composed of fifty plates with ten plates derived from each of the five sources. The plates were randomly ordered in their numbering and arrangement before presentation to prevent biases from developing as a result of the position in the order of the instrument, or as a result of adjacent influencing plates. The twenty items which received the least number of negative responses, as recorded in Table III, page 54, were analyzed for the final instrument. Table III also indicated that two of the items selected were from source I, four from source II, five from source III, three from source IV, and six from source V. This revealed the type of fashion preferred by the specific population in this research. It did not imply anything about the fashionableness of items presented by specific sources.

Observations from the Final Instrument

Parts II and IV of the paired illustrations instrument assessed the extent to which the population liked or disliked each garment or ensemble and the proportions of each garment or ensemble. In Part II, graphed below, each point represented the mean preference and the proportions characteristic of individual clothing illustrations. The vertical bars setting off .6000 to .6666 on the horizontal axis represented the golden

mean proportions. The average preference for clothing which conformed to the golden mean proportion was 2.56, falling between the regions representing dislike (2) and indifferent (3). The average preference for clothing not conforming to the golden mean proportion was 3.29, falling between the regions representing indifferent (3) and like (4). This suggested that garments with proportions deviating from the golden mean were preferred over garments strictly adhering to the golden mean proportion.

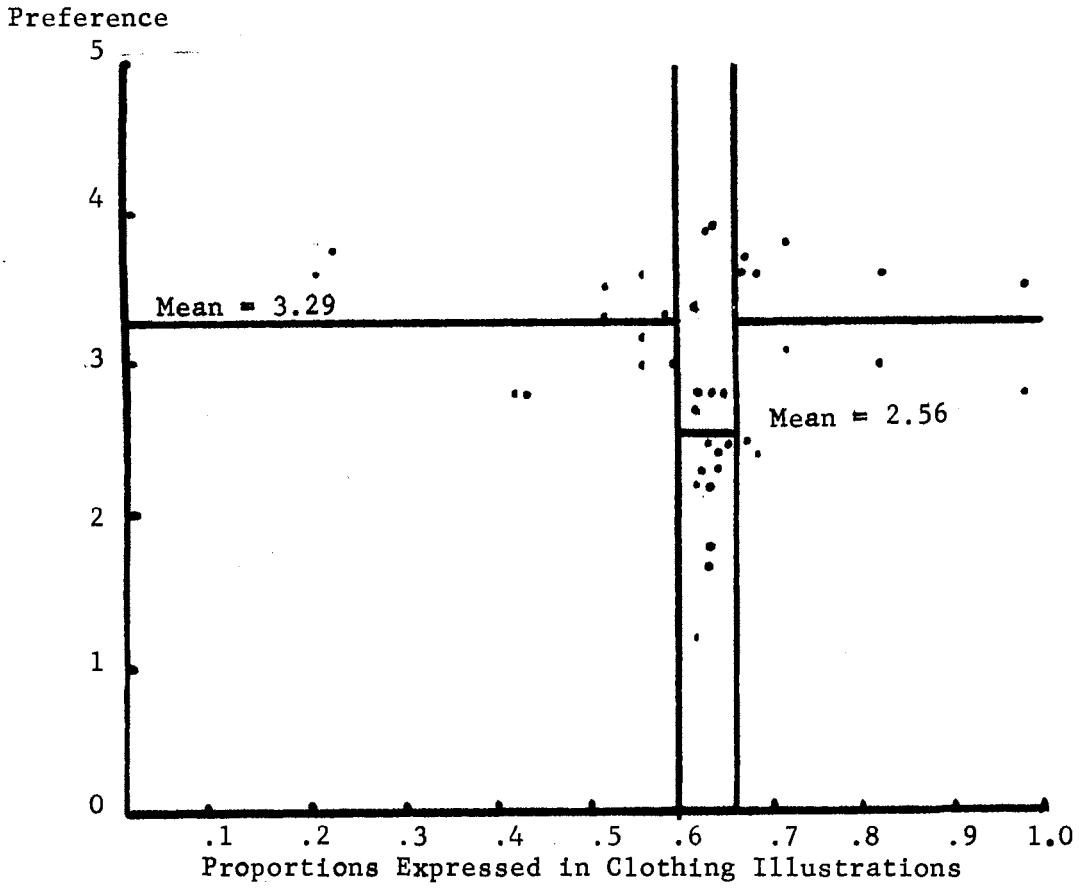

Figure 1. Extent of Preference for Clothing Styles

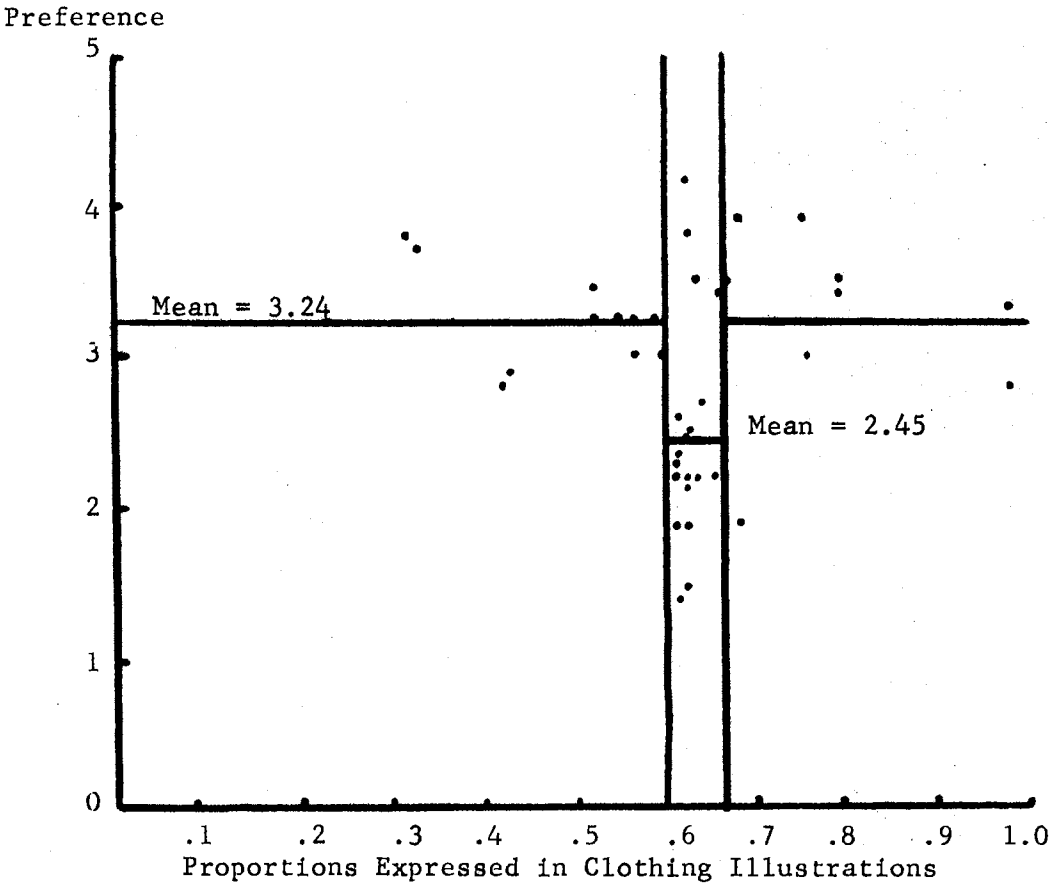

Figure 2. Extent of Preference for Proportions in Clothing Styles

In Part IV, graphed above, each point represented the extent to which the proportions of a garment were liked or disliked, and the proportion expressed in the garment. Again, the golden mean proportion was set off by vertical bars placed from .6000 to .6666. The mean preference of garments conforming to the golden mean was 2.45 while the mean preference for garments not conforming to the golden mean was 3.24. In this case, the population analyzed the proportions present in the garments and based their preference on those proportions. The difference occurring in the means of Part II was .73 while the difference occurring in the means of Part IV was .99. This suggests that when preference for garment

proportions was assessed, specifically, the golden mean was preferred less than when preference was made without analyzing garment proportions.

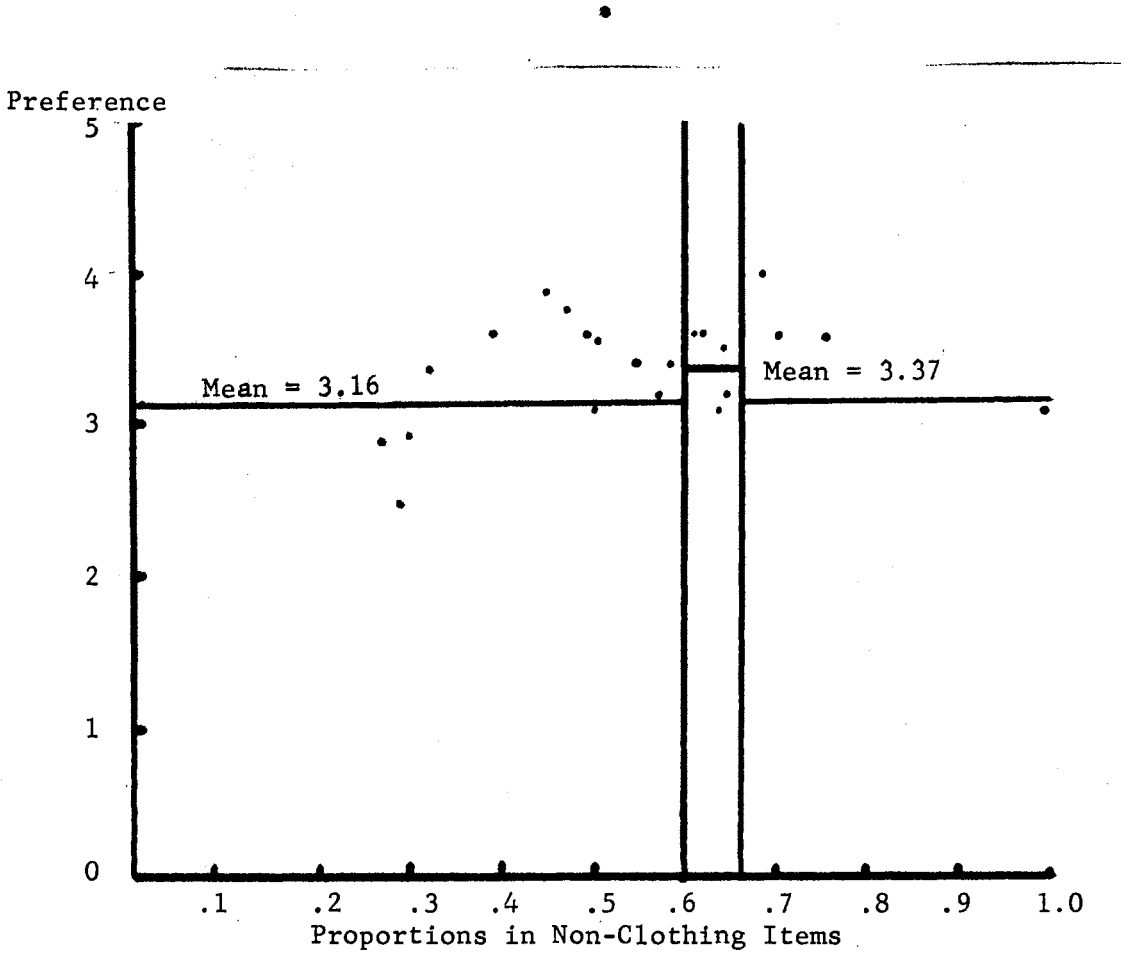

Figure 3. Extent of Preference for Proportions in Non-Clothing Items

In Part III of the final instrument, the extent of preference for proportions in non-clothing items was assessed. The graph above indicated the preference and corresponding proportion of each of the twenty items in Part III. The mean preference of those items conforming to the golden mean (between .6000 and .6666 on the horizontal axis) was 3.37. The

preference for items with proportions deviating from the golden mean was slightly lower at 3.16. This suggested that there was a slight preference for non-clothing items conforming to the golden mean over items deviating from the golden mean. In this Part III, the direction of preference toward the golden mean was reversed from the direction of preference indicated with the clothing items. This finding tended to suggest that the population was aware of and did prefer the golden mean proportion in non-clothing items while they tended to dislike the golden mean proportion expressed in clothing.

In addition to the evidence above, the hypotheses of the study were accepted or rejected on the basis of results obtained from Part I of the paired illustrations instrument. The results were recorded in the tables of Appendix B and Appendix C. The findings were derived from the tables and were discussed in relation to the hypotheses.

Hypothesis I: Garments which emphasize natural body proportions are aesthetically more pleasing than garments with proportions determined by strict application of the golden mean proportion. The data related to this hyposthesis was collected in Table VI of Appendix C. Four instances in which natural body proportions existed according to the standard set by the research occurred. From these four items the specific scores supported this hypothesis to indicate that 92.74 per cent of the population preferred items expressing the natural body proportions. Only 7.26 per cent of the population indicated a preference for golden mean proportions over natural body proportions. Thus, the first hypothesis suggested that natural body proportions in garment design were aesthetically more pleasing than the application of the golden mean proportion in garment design.

Hypothesis II: Garment proportions not related to natural body proportions are more pleasing when the proportions are consistent with golden mean proportions that when the proportions deviate from the golden mean. Table VII of Appendix C contains the data related to this hypothesis. The last two columns indicated that golden mean proportioned garments were preferred above garments deviating both from the golden mean and natural body proportions 25.20 per cent of the time. Therefore, garments not showing any defined proportions were selected over garments showing strictly applied golden mean proportions three times as often. Hypothesis II was rejected.

Hypothesis III: Proportion functions to alter the aesthetic pleasingness of clothing. Table X in Appendix C provided data to consider this hypothesis. In finding whether or not preference for two similar, but varied, garments changed with proportion variation, the fourth column confirmed that it did in 90 per cent of the cases. The final column indicated that the average per cent of differences created by changing garment design was 55.61 per cent. Thus, it was concluded that the aesthetic pleasingness of a garment was varied by altering the proportions of the garment.

Hypothesis IV: Currently fashionable clothing follows natural body proportions. Table IV indicated that five of twenty garments in their found form followed the natural divisions of the human body. This limited sample suggested that current fashion deviated from the natural body proportions. Thus, hypothesis four is rejected.

Hypothesis V: Currently fashionable clothing follows the golden mean proportion. Data for this hypothesis was derived from the analysis of each garment for the paired illustrations instrument. In only two

cases, those of items 11 and 18, was the golden mean relationship discovered in the found form of the garments. Thus, the rejection of hypothesis V suggested that the golden mean was not a common characteristic of garments considered currently fashionable at the time of the study.

Hypothesis VI: Currently fashionable clothing is aesthetically pleasing in its found form. The data for analysis of this hypothesis was compiled into Table VIII of Appendix C. The found forms of garments were more pleasing than those altered according to the golden mean in 76.61 per cent of the cases. In its confirmation, the sixth hypothesis supported the belief that currently fashionable clothing was considered aesthetically pleasing as it was designed regardless of its adherence to or deviation from the golden mean proportion or natural body proportions.

Hypothesis VII: The strict application of the golden mean proportion does contribute to the aesthetic pleasingness of clothing. Information from Table IX indicated that golden mean garment proportions were preferred 21.77 per cent of the time as opposed to a preference of 78.23 per cent for natural body proportioned garments or garments deviating from the golden mean and natural body proportions. Because this hypothesis was not confirmed, it was concluded that the golden mean proportion does not contribute to the aesthetic pleasingness of clothing.

Of the hypotheses considered, the first, third, and sixth were confirmed while the second, fourth, fifth, and seventh were rejected. The implications of these findings were discussed in the conclusions.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary and Conclusions

Interest in this research problem was generated during the past year of fashion news and noticeable changes in garment proportions. Added interest resulted from awareness of the theoretical statements prescribing good garment proportions, and the paucity of research describing garment proportions as they functioned realistically in fashion.

The research reported was undertaken to discover the actual relationship of proportion in clothing to aesthetic pleasingness of clothing. In its most general statement, the problem was to compare the aesthetic pleasingness of clothing which deviated from the strict application of the golden mean to the aesthetic pleasingness of clothing which followed strict application of the golden mean proportion. The specific purpose of this research was to assess the value of the golden mean in creating or evaluating garment proportions.

Three instruments developed by the investigator were used to assess the aesthetic pleasingness of clothing with varied proportions. The first instrument, called the paired illustrations instrument, consisted of fifty photographs from current sources of fashion. The second and third instruments were the paired illustration instrument and the preference for proportions in non-clothing items instrument. The paired illustrations instrument was developed from twenty items selected by the

population as "currently fashionable" from the pre-selection instrument. The third instrument administered along with the second instrument consisted of twenty abstract shapes in which the proportional relationships were indicated by brackets. Through this combination of instruments, the preference for proportions in clothing and non-clothing items was assessed.

The results of the findings confirmed three of the seven hypotheses. The analysis of data to confirm or reject each hypothesis resulted in testing the total theoretical framework. The first hypothesis supporting the belief that garments which empahsize natural body proportions are aesthetically more pleasing than garments whose proportions are determined by strict application of the golden mean proportion was confirmed. The second hypothesis was rejected. It stated that proportions in garments not related to natural body proportions are more pleasing when the proportions are consistent with the golden mean proportion than when the proportions deviate from the golden mean. This suggested the need for continued research regarding this point. The confirmation of the third hypothesis that proportion does function to alter the aesthetic pleasingness of clothing indicated that proportion in garments is worthy of consideration. Both the fourth and fifth hypotheses were rejected. Thus, it may be concluded that current fashion was based on neither the natural body proportions nor the golden mean proportions, and that current fashion did not conform to the theories expressed in the review of theoretical literature. In its acceptance, the sixth hypothesis indicated that currently fashionable clothing was aesthetically pleasing regardless of its variety of proportional relationships. This might have suggested that proportions created "by eye" without the thought to specific relationships were most aesthetically pleasing. The seventh hypothesis tested

the idea that the strict application of the Golden Mean Proportion did contribute to the aesthetic pleasingness of clothing. This hypothesis was rejected. The results suggested a need for reconsideration and continued research in the area of applying proportion principles to clothing. This theory of proportion has been tested, and findings lead to the rejection of the major part of the theory. However, this was one isolated test of the theory. It indicated the possibility that research may be continued and that theory may be re-evaluated in terms of clothing. Only one method of testing was presented. Additional research using varied methods may yield different results.

Recommendations

The instruments developed in this study may be valuable beyond the realm of testing this particular theory. Below are listed recommendations for uses of the instruments developed by this research.

1. The fashion garment analysis instrument may be further developed and used in objective, critical analysis of clothing, in designing, and in individual selection of clothing.
2. The paired illustrations instrument suggested a method by which student's awareness of proportion in clothing can be increased in teaching the design principles of clothing.
3. The pre-selection instrument might be used in the following ways.
    a. To discover individual sensitivity to group consensus of currently fashionable garments.
    b. To discover variation of interpretation of current fashion between students entering merchandising and students entering design.
    c. For use by employers in evaluating the fashion sensitivity of

c. of applicants for jobs in designing or retailing.

d. To analyze the fashionableness of garments from a specific source according to the consensus of relevant opinions.

e. To discover general trends in current trends in fashion by analyzing those garments selected as currently fashionable.

f. To suggest the type of clothing manufacturer or retailer best suited to a student's interpretation of fashion for the purpose of employment placement.

4. The paired illustrations instrument might add to knowledge about the use of this type of instrument in testing aesthetic qualities of clothing or in testing aesthetic judgment.

5. The instrument for the analysis of fashion might be employed in analyzing historic costume for the purpose of further examination of the theory upon which this study is based.

The following recommendations for improvement of this study are suggested.

1. Plates of the pre-selection instrument could be grouped according to the function of the garments.

2. The paired illustrations instrument could be improved by eliminating features which date the figures.

3. The paired illustrations instrument could be improved by analyzing proportion according to two dimensions, both height and width, rather than horizontal divisions.

As a result of this exploratory study, further research on the application of proportion as a design principle and the application of other strictly prescribed principles of design is recommended. The added considerations of color and texture in evaluating the effects of garment

proportions might also be considered. Finally, optical illusion plays a decided part in the apparent proportions of garments and the effects of optical illusions must be known before proportion can be precisely prescribed.

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APPENDIX A

THE PRE-SELECTION INSTRUMENT

Item Number

Code Number of source
placed in this position
on the reverse side.

Figure 4. An Example of the Pre-Selection Instrument

Identification Number _____

CURRENT FASHION IN CLOTHING:

AN OPINIONNAIRE

This opinionnaire does not assess your knowledge of current fashion in clothing. It is your opinion that determines current fashion.

You will be shown fifty colored photographs of garments or ensembles. Indicate your opinion of each illustration. If you consider the garment to be currently fashionable, circle "Y", indicating YES, by the item number. If you do not consider the item to be currently fashionable, circle "N", indicating NO, by the item number.

Criteria to determine whether or not an item is currently fashionable is based on your own opinion. Decide if the garment or ensemble would be fashionable if worn for the appropriate occasion by yourself or a peer. Disregard the accessories shown with the garments or ensembles.

The items will be shown in random order. Please match the item number on the illustration to the item number on the opinionnaire.

Items:

1. Y N	11. Y N	21. Y N	31. Y N	41. Y N
2. Y N	12. Y N	22. Y N	32. Y N	42. Y N
3. Y N	13. Y N	23. Y N	33. Y N	43. Y N
4. Y N	14. Y N	24. Y N	34. Y N	44. Y N
5. Y N	15. Y N	25. Y N	35. Y N	45. Y N
6. Y N	16. Y N	26. Y N	36. Y N	46. Y N
7. Y N	17. Y N	27. Y N	37. Y N	47. Y N
8. Y N	18. Y N	28. Y N	38. Y N	48. Y N
9. Y N	19. Y N	29. Y N	39. Y N	49. Y N
10. Y N	20. Y N	30. Y N	40. Y N	50. Y N

TABLE II

SOURCES OF PHOTOGRAPHS

Code Number	Source	Date
I.	Glamour Magazine	Vol. 65, No. 4 (June, 1971)
II.	Sear's General Catalogue	Spring and Summer, 1971
III.	Sear's Catalogue	Summer, 1971
IV.	Seventeen Magazine	Vol. 30, No. 6 (June, 1971)
V.	Ward's Sale Catalogue	Summer, 1971

TABLE III

TABULATION OF RESPONSES TO THE PRE-SELECTION INSTRUMENT

The answers are tabulated according to the negative responses made to the opinionnaire. The twenty items receiving the least number of negative tallies were selected as fashion items and were analyzed for the Paired Illustrations Instrument. The last column indicates the use of the photograph in the final instrument. The fourth column indicates the ordinal position of the photograph among all photographs in the Pre-Selection Instrument.

Illustration Number	Source of Item	Negative Tallies	Ordinal Position	Use in Final Instrument
1.	IV	7	17	*
2.	III	5	9.5	*
3.	IV	5	9.5	*
4.	II	17	45	
5.	V	8	22	*
6.	IV	15	39.5	
7.	III	16	43	
8.	I	12	35	
9.	IV	11	33	
10.	III	8	22	
11.	V	4	6.5	*
12.	IV	9	26.5	

TABLE III. (Continued)

Illustration Number	Source of Item	Negative Tallies	Ordinal Position	Use in Final Instrument
13.	IV	16	43	
14.	I	5	9.5	*
15.	II	3	4	*
16.	II	7	17	*
17.	V	7	17	*
18.	III	8	22	
19.	III	3	4	*
20.	V	3	4	*
21.	IV	10	30.5	
22.	IV	12	35	
23.	III	1	1.5	*
24.	I	8	22	
25.	II	4	6.5	*
26.	I	23	49	
27.	V	9	26.5	
28.	II	6	13	*
29.	III	1	1.5	*
30.	III	6	13	*
31.	I	7	17	*
32.	II	24	50	
33.	V	7	17	*
34.	IV	15	39.5	
35.	I	15	39.5	

TABLE III. (Continued)

Illustration Number	Source of Item	Negative Tallies	Ordinal Position	Use in Final Instrument
36.	III	10	39.5	
37.	I	9	30.5	
38.	I	22	26.5	
39.	II	13	48	
40.	I	9	37	
41.	V	21	26.5	
42.	II	12	46.5	
43.	I	8	35	
44.	II	8	22	
45.	III	21	46.5	
46.	IV	10	30.5	
47.	V	6	13	*
48.	V	5	9.5	*
49.	I	10	30.5	
50.	I	16	43	

APPENDIX B

THE PAIRED ILLUSTRATIONS INSTRUMENT AND THE NON-CLOTHING ITEMS INSTRUMENT

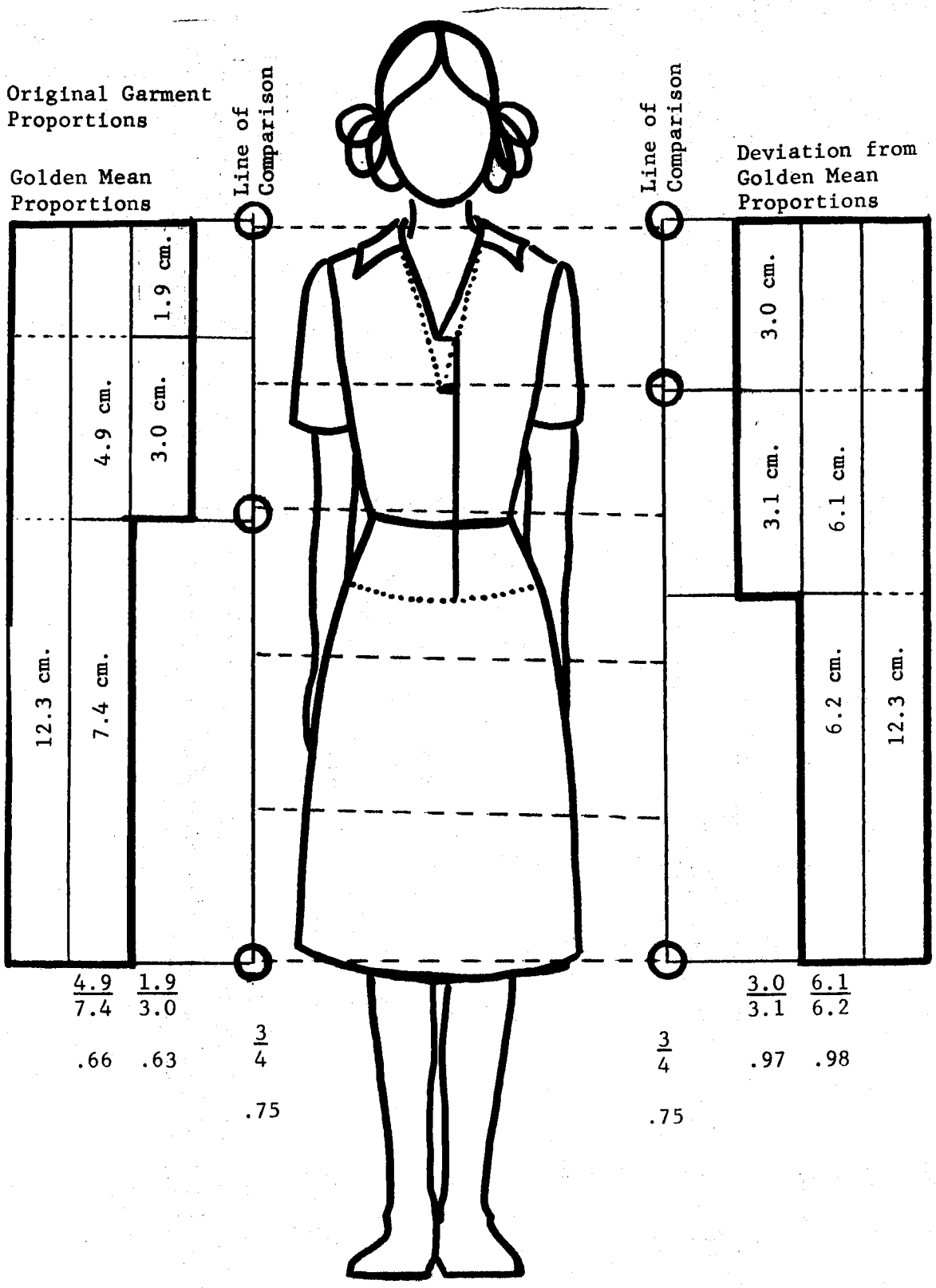
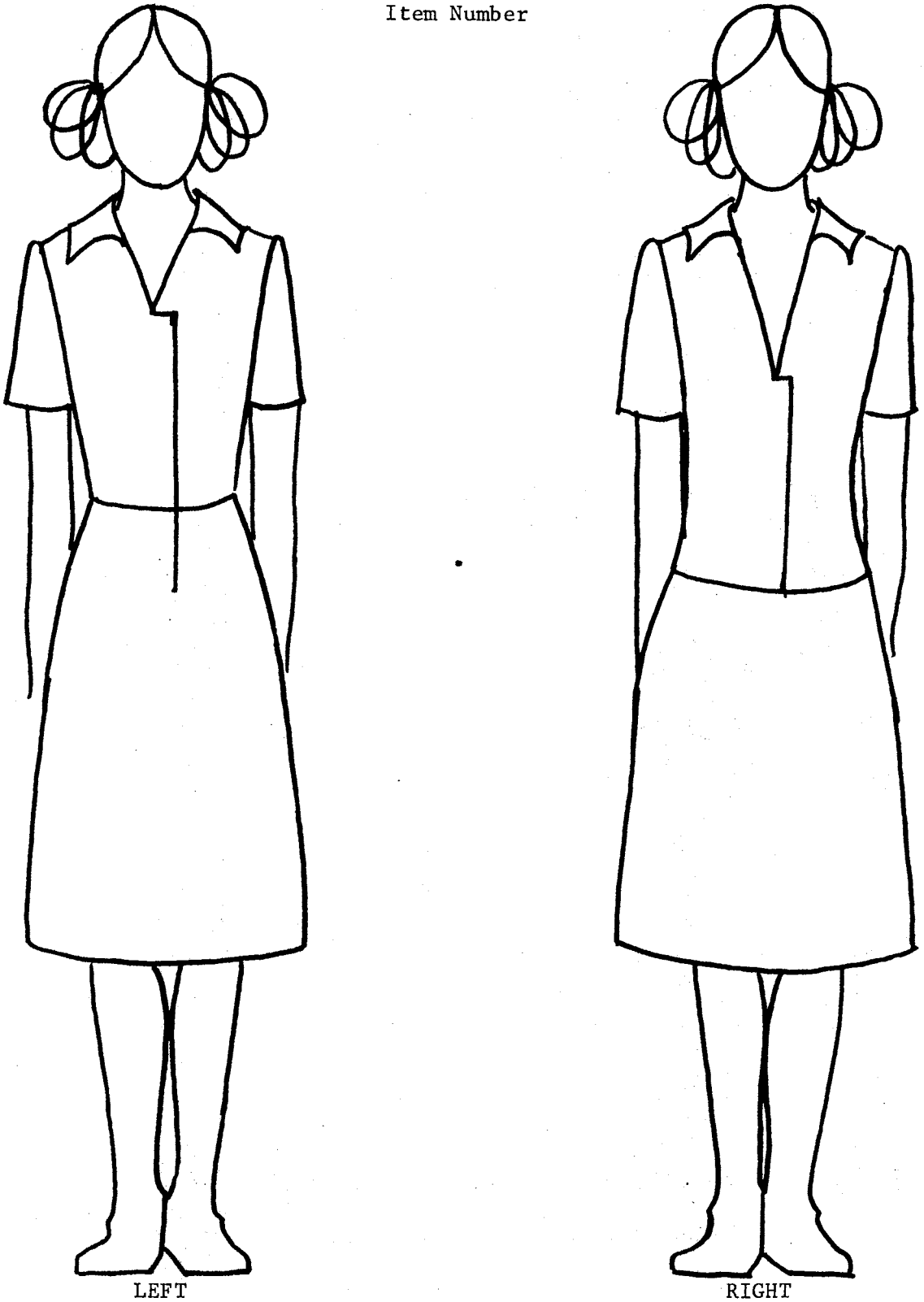


Figure 5. An Analysis of Garment Proportions

Item Number



LEFT
Illustration Number

RIGHT
Illustration Number

Figure 6. An Example of the Paired Illustrations Instrument

Identification Number _____

PART I

PAIRED ILLUSTRATIONS

Directions:

There are twenty items on this opinionnaire. Each item consists of a pair of illustrations. The two members of the pairs may seem very much alike, but they are different. You will be told what difference exists for each item.

Decide which illustration of each pair looks best to you. Circle "L" if you prefer the garment at the LEFT. Circle "R" if you prefer the garment at the RIGHT.

Items:

1. L R
2. L R
3. L R
4. L R
5. L R
6. L R
7. L R
8. L R
9. L R
10. L R
11. L R
12. L R
13. L R
14. L R
15. L R
16. L R
17. L R
18. L R
19. L R
20. L R

PART II

EXTENT OF PREFERENCE FOR CLOTHING ILLUSTRATED

Directions:

There are forty items on this opinionnaire. The illustrations are the same as those in Part I, but the preference for each illustration will be assessed separately. For each illustration, indicate the extent to which you like the garment or ensembles.

DISLIKE VERY MUCH										
1		DISLIKE 2		INDIFFERENT 3		LIKE 4		LIKE VERY MUCH 5		
1.	1	2	3	4	5	21.	1	2	3	4	5
2.	1	2	3	4	5	22.	1	2	3	4	5
3.	1	2	3	4	5	23.	1	2	3	4	5
4.	1	2	3	4	5	24.	1	2	3	4	5
5.	1	2	3	4	5	25.	1	2	3	4	5
6.	1	2	3	4	5	26.	1	2	3	4	5
7.	1	2	3	4	5	27.	1	2	3	4	5
8.	1	2	3	4	5	28.	1	2	3	4	5
9.	1	2	3	4	5	29.	1	2	3	4	5
10.	1	2	3	4	5	30.	1	2	3	4	5
11.	1	2	3	4	5	31.	1	2	3	4	5
12.	1	2	3	4	5	32.	1	2	3	4	5
13.	1	2	3	4	5	33.	1	2	3	4	5
14.	1	2	3	4	5	34.	1	2	3	4	5
15.	1	2	3	4	5	35.	1	2	3	4	5
16.	1	2	3	4	5	36.	1	2	3	4	5
17.	1	2	3	4	5	37.	1	2	3	4	5
18.	1	2	3	4	5	38.	1	2	3	4	5
19.	1	2	3	4	5	39.	1	2	3	4	5
20.	1	2	3	4	5	40.	1	2	3	4	5

PART IV

PREFERENCE FOR PROPORTIONS IN CLOTHING ILLUSTRATIONS

Directions:

There are forty items on this opinionnaire. The illustrations are the same as those in Parts I and II.

For each illustration, analyze the proportional relationships in the garment. Then indicate the extent to which you like the proportions of each illustrated garment.
Proportion is the relationship of one part to another or of one part to the whole.

	DISLIKE VERY MUCH 1		DISLIKE 2		INDIFFERENT 3		LIKE 4		LIKE VERY MUCH 5
1.	1	2	3	4	5	21.	1	2	3	4	5
2.	1	2	3	4	5	22.	1	2	3	4	5
3.	1	2	3	4	5	23.	1	2	3	4	5
4.	1	2	3	4	5	24.	1	2	3	4	5
5.	1	2	3	4	5	25.	1	2	3	4	5
6.	1	2	3	4	5	26.	1	2	3	4	5
7.	1	2	3	4	5	27.	1	2	3	4	5
8.	1	2	3	4	5	28.	1	2	3	4	5
9.	1	2	3	4	5	29.	1	2	3	4	5
10.	1	2	3	4	5	30.	1	2	3	4	5
11.	1	2	3	4	5	31.	1	2	3	4	5
12.	1	2	3	4	5	32.	1	2	3	4	5
13.	1	2	3	4	5	33.	1	2	3	4	5
14.	1	2	3	4	5	34.	1	2	3	4	5
15.	1	2	3	4	5	35.	1	2	3	4	5
16.	1	2	3	4	5	36.	1	2	3	4	5
17.	1	2	3	4	5	37.	1	2	3	4	5
18.	1	2	3	4	5	38.	1	2	3	4	5
19.	1	2	3	4	5	39.	1	2	3	4	5
20.	1	2	3	4	5	40.	1	2	3	4	5

TABLE IV

A RECORD OF PROPORTIONAL TYPES IN THE PAIRED ILLUSTRATIONS INSTRUMENT

This table records the position of proportion of each illustration of all items on the paired illustrations instrument. The last two columns indicate the type of comparison made between the pairs of each item.

Item	Position of Found Form	Natural Body Proportion	Golden Mean Proportion	Deviation from Golden Mean Proportion	Type of Comparison NBP:GMP	Type of Comparison GMP:DGM
1.	Left		Right	Left		X
2.	Left		Right	Left		X
3.	Left		Right	Left		X
4.	Left	Left	Right		X	
5.	Right		Left	Right		X
6.	Right	Right	Left		X	
7.	Right		Left	Right		X
8.	Right	Left*,**	Left*,**			X
9.	Right		Left	Right		X
10.	Left		Right	Left		X
11.	Left	Left*	Left*	Right		X
12.	Left		Right	Left		X
13.	Right		Left	Right		X
14.	Right	Right	Left		X	
15.	Left	Left	Right		X	
16.	Left		Right	Left		X
17.	Right		Left	Right		X
18.	Left**		Left**	Right		X
19.	Right		Left	Right		X
20.	Right		Left	Right		X

*In two items, the golden mean and natural body proportions were found in the same illustration.

**In two items, golden mean proportions were discovered in the found form of the items.

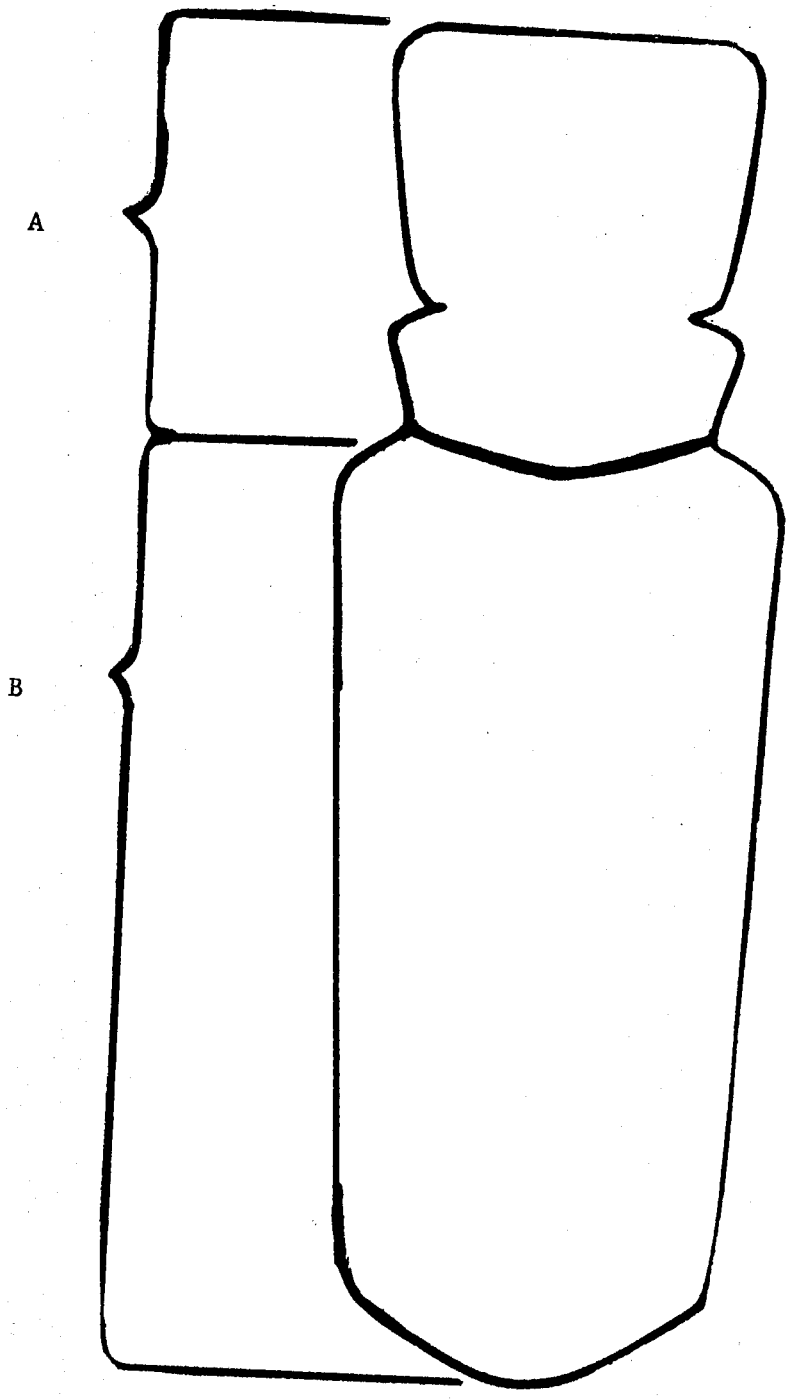
NBP means natural body proportions
GMP means golden mean proportions
DGM means deviation from the golden mean

TABLE V

PAIRED ILLUSTRATIONS INSTRUMENT:
RAW DATA TABLE

Item	Found Form	DGM	GMP	NBP
1.	(L) 30	(L) 30	(R) 1	
2.	(L) 24	(L) 24	(R) 7	
3.	(L) 29	(L) 29	(R) 2	
4.	(L) 27	(L) 27	(R) 4	(L) 27
5.	(R) 19	(R) 19	(L) 12	
6.	(R) 26	(R) 26	(L) 5	(R) 26
7.	(R) 27	(R) 27	(L) 4	
8.	(R) 17	(R) 17	(L) 14	(L) 14
9.	(R) 27	(R) 27	(L) 4	
10.	(L) 15	(L) 15	(R) 16	
11.	(L) 15	(R) 16	(L) 15	(L) 17
12.	(L) 26	(L) 26	(R) 5	(L) 26
13.	(R) 26	(R) 26	(L) 5	
14.	(R) 31	(R) 31	(L) 0	(R) 31
15.	(L) 31	(L) 31	(R) 0	(L) 31
16.	(L) 27	(L) 27	(R) 4	
17.	(R) 28	(R) 28	(L) 3	
18.	(L) 11	(R) 20	(L) 11	
19.	(R) 13	(R) 13	(L) 18	
20.	(R) 26	(R) 26	(L) 5	

GMP means golden mean proportions
DGM means deviation from the golden mean
NBP means natural body proportions



Item Number

Figure 7. An Example of Non-Clothing Items

PART III

PREFERENCE FOR PROPORTION IN NON-CLOTHING ITEMS

Direction:

There are twenty items on this opinionnaire. Illustrations are simple linear figures unrelated to clothing.

Analyze the proportional relationship of A to B as indicated by brackets A and B on each illustration. For each illustration, indicate the extent to which you like the proportions presented.

DISLIKE VERY MUCH		DISLIKE	INDIFFERENT	LIKE	LIKE VERY MUCH
1		2	3	4	5

1.	1	2	3	4	5	11.	1	2	3	4	5
2.	1	2	3	4	5	12.	1	2	3	4	5
3.	1	2	3	4	5	13.	1	2	3	4	5
4.	1	2	3	4	5	14.	1	2	3	4	5
5.	1	2	3	4	5	15.	1	2	3	4	5
6.	1	2	3	4	5	16.	1	2	3	4	5
7.	1	2	3	4	5	17.	1	2	3	4	5
8.	1	2	3	4	5	18.	1	2	3	4	5
9.	1	2	3	4	5	19.	1	2	3	4	5
10.	1	2	3	4	5	20.	1	2	3	4	5

PART V

PERSONAL DATA

Directions:

Please indicate the requested information below.

1. Home State _____
2. Occupation _____
3. Age _____
4. Education _____
   1 - Undergraduate
   2 - Beginning Master's
   3 - Completing Master's
   4 - Beginning Doctoral
   5 - Completing Doctoral
5. Background in Art and Clothing

ART

How many art courses did you have in high school? _____
How many of those art courses dealt directly with art principles? _____
How many art courses did you have in college? _____
How many of those art courses dealt directly with art principles? _____
Have you taught art courses? _____
1 - Not at all
2 - A few times
3 - Irregularly
4 - Quite often
5 - Continuously
If yes to the above, to what extent did you teach art principles? _____
1 - Not at all
2 - In 1/4 of the courses
3 - In 1/2 of the courses
4 - In 3/4 of the courses
5 - In all courses

CLOTHING

How many clothing courses did you have in high school? _____
How many of those clothing courses dealt directly with art principles? _____
How many clothing courses did you have in college? _____
How many of those clothing courses dealt directly with art principles? _____
Have you taught clothing courses? _____
1 - Not at all
2 - A few times
3 - Irregularly
4 - Quite often
5 - Continuously
If yes to the above, to what extent did you teach art principles? _____
1 - Not at all
2 - In 1/4 of the courses
3 - In 1/2 of the courses
4 - In 3/4 of the courses
5 - In all courses

APPENDIX C

ANALYTIC TABLES

TABLE VI

A COMPARISON OF NATURAL BODY PROPORTIONS AND GOLDEN MEAN PROPORTIONS

Item Number	NBP Position	NBP Score	GMP Position	GMP Score
4.	Left	27	Right	4
6.	Right	26	Left	5
14.	Right	31	Left	0
15.	Left	31	Right	0
TOTALS:		115		9
Per Cent of Total Points		92.74%		7.26%

NBP means natural body proportions
GMP means golden mean proportions

TABLE VII

A COMPARISON OF GOLDEN MEAN PROPORTIONS AND PROPORTIONS DEVIATING FROM THE GOLDEN MEAN

Item Number	GMP		DGMP	
	Position	Score	Position	Score
1.	Right	1	Left	30
2.	Right	7	Left	24
3.	Right	2	Left	29
5.	Left	12	Right	19
7.	Left	4	Right	27
8.	Left	14	Right	17
9.	Left	4	Right	27
10.	Right	15	Left	16
11.	Left	15	Right	16
12.	Right	5	Left	26
13.	Left	5	Right	26
16.	Right	4	Left	27
17.	Left	3	Right	28
18.	Left	11	Right	20
19.	Left	18	Right	13
20.	Left	5	Right	26
TOTALS:		125		371
Per Cent of Total Points		25.20%		74.79%

TABLE VIII

ANALYSIS OF PREFERENCE FOR ORIGINAL AND ALTERED GARMENT ILLUSTRATIONS

Item Number	Found Form		Altered Form	
	Position	Score	Position	Score
1.	Left	30	Right	1
2.	Left	24	Right	7
3.	Left	29	Right	2
4.	Left	27	Right	4
5.	Right	19	Left	12
6.	Right	26	Left	5
7.	Right	27	Left	4
8.	Right	17	Left	14
9.	Right	27	Left	4
10.	Left	15	Right	16
11.	Left	15	Right	16
12.	Left	26	Right	5
13.	Right	26	Left	5
14.	Right	31	Left	0
15.	Left	31	Right	0
16.	Left	27	Right	4
17.	Right	28	Left	3
18.	Left	11	Right	20
19.	Right	13	Left	18
20.	Right	26	Left	5
TOTALS:		475		145
Per Cent of Total Points		76.61%		23.39%

TABLE IX

ANALYSIS OF THE CONTRIBUTIONS OF THE GOLDEN MEAN TO THE AESTHETIC PLEASINGNESS OF GARMENTS

Item Number	Score for Golden Mean Proportions	Score for Non-Golden Mean Proportions
1.	1	30
2.	7	24
3.	2	29
4.	4	27
5.	12	19
6.	5	26
7.	4	27
8.	14	17
9.	4	27
10.	16	15
11.	15	16
12.	5	26
13.	5	26
14.	0	31
15.	0	31
16.	4	27
17.	3	28
18.	11	20
19.	18	13
20.	5	26
TOTALS:	135	485
Per Cent of Total Points	21.77%	78.23%

TABLE X

ANALYSIS OF DIFFERENCE CREATED BY ALTERED PROPORTIONS

The following table indicates the extent to which changing of garment proportions changed the preference for the items.

Item Number	Right Score	Left Score	Indicated Difference	Absolute Difference in Raw Score	Difference Total Score	Per Cent of Difference
1.	1	30	X	29	29/31	93.54%
2.	7	24	X	17	17/31	54.83%
3.	2	29	X	27	27/31	87.10%
4.	4	27	X	23	23/31	74.19%
5.	19	12	X	7	7/31	22.58%
6.	26	5	X	21	21/31	67.74%
7.	27	4	X	23	23/31	74.19%
8.	17	14	X	3	3/31	9.68%
9.	27	4	X	23	23/31	74.19%
10.	16	15		1	1/31	3.23%
11.	16	15		1	1/31	3.23%
12.	5	26	X	21	21/31	67.74%
13.	26	5	X	21	21/31	67.74%
14.	31	0	X	31	31/31	100.00%
15.	0	31	X	31	31/31	100.00%
16.	4	27	X	23	23/31	74.19%
17.	28	3	X	25	25/31	80.65%
18.	20	11	X	9	9/31	29.03%
19.	13	18	X	5	5/31	16.13%
20.	26	5	X	21	21/31	67.74%

Per Cent of Cases in which a Difference was indicated:	Average Per Cent of Difference
90.00%	55.61%

VITA

Carol Honeycutt Stowell

Candidate for the Degree of

Master of Science

Thesis: THE RELATIONSHIP OF PROPORTION TO AESTHETIC PLEASINGNESS IN CLOTHING

Major Field: Clothing, Textiles and Merchandising

Biographical:

Personal Data: Born in Trinidad, Colorado, August 12, 1947, the daughter of Mr. and Mrs. William Robert Honeycutt.

Education: Graduated from Abraham Lincoln High School, Denver, Colorado, in June, 1965; attended Monmouth College, Monmouth, Illinois, in 1965-66 and 1966-67; received the degree of Bachelor of Science in Textiles and Clothing from Colorado State University, Fort Collins, Colorado, in March, 1970; completed the requirements for the Master of Science degree at Oklahoma State University, Stillwater, Oklahoma, in July, 1971.

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Honorary Organizations: Omicron Nu, Phi Upsilon Omicron, Eta Sigma Phi, Tomahawk.