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Executive Board

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NATIONAL MEETING
ASSOCIATION OF COLLEGE PROFESSORS OF TEXTILES AND CLOTHING

Sheraton Motor Inn, Portland, Oregon

June 19-22, 1974

Program

Theme: Conceptualization, Investigation, Application Design for Teaching

Wednesday, June 19

9:00 a.m.-Noon  National Executive Board
1:30-4:30 p.m.  National Executive Board
7:00-9:00 p.m.  Regional Council Meetings
8:00-10:00 p.m. Registration
8:00-9:30 p.m.  Hospitality

Thursday, June 20

8:00 a.m.-Noon  Registration
8:30 a.m.-12:30 p.m. Tours
9:00 a.m.-Noon  National Executive Board
1:00-2:30 p.m.  Luncheon - Presiding: Dr. Amelia Adams, ACPTC President
Speaker: Dr. Norma Compton, Purdue Univ.
3:00-4:00 p.m.  Discipline (1) Cultural History
Presiding: Mrs. Jo Ellen Uptegraft, ACPTC Treasurer
Speaker: Dr. Mignon Perry, Washington State University
Speaker: Mrs. Mona Horn, Belmont Fisher Secondary School, Victoria, B.C.
6:00 p.m.  Dinner - Presiding: Mrs. Barbara Harger, Western Region Chairman
Speaker: Dr. Geitel Winakor, Iowa State Univ.
Program

Friday, June 21

9:00-10:00 a.m. Discipline (2) Chemistry
Presiding: Dr. Virginia Carpenter, ACPTC Secretary
Speaker: Dr. H. Rex Richards, Colorado State University

10:30-11:30 a.m. Discipline (3) Social Psychology
Presiding: Mrs. Charlotte Bennett, Central Region Chairman
Speaker: Dr. Mary Roach, University of Wisconsin--Madison
Speaker: Mrs. Diane Sugimura, University of Washington
Speaker: Dr. Lillian B. Matthews, Northern Illinois University

Noon-1:30 p.m. Luncheon - Presiding: Mrs Linda Thiel, National Meeting Program Chairman
Speaker: Dr. Joanne B. Eicher, Michigan State University

2:00-3:00 p.m. Discipline (4) Physics
Presiding: Dr. Maryann Zentner, Eastern Region Chairman-elect
Speaker: Dr. Robert G. Steadman, Texas Tech University
Speaker: Mr. Ronal T. Hastie, University of Manitoba

3:30 p.m. Regional Meetings
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
</table>
| 9:00-10:00 a.m. | Discipline (5) Anthropology  
Portland Art Museum  
Presiding: Dr. Mignon Perry,  
ACPTC President-elect |
| Speaker:      | Dr. Erna Gunther, Prof. emeritus,  
University of Washington |
| 10:30 a.m.-Noon | ACPTC Business Meeting  
Presiding: Dr. Mignon Perry,  
ACPTC President-elect |
| 1:00-4:00 p.m. | National Executive Board |
CONCEPTUALIZATION: THE FOUNDATION FOR CLOTHING AND TEXTILES RESEARCH

Dr. Norma Compton, Purdue University

It has been said that "science reaches its zenith when it has produced an explanation for the phenomena that it studies."1

Underlying this complex problem of explanation is the epistemology of science or the study of the process whereby science understands the phenomena of reality. Yet this aspect of science has fallen mainly within the realm of the philosophers. With their training in logic and flair for abstract thought, philosophers have much to contribute in the erection of models or systems that can provide a more meaningful structure for scientific investigation. On the other hand, philosophical concepts are often too rhetorically phrased and vaguely conceived to be reduced to proportions that can be tested through research.

To explain the facts of reality scientists require an organized system to describe and interpret the findings of their scientific investigations. Initially the description of phenomena in scientific inquiry may be stated in non-technical vocabulary but the growth of a discipline soon involves the development of a system of speculation—more or less abstract—of properly defined and logically consistent concepts in terms of which theories may be formulated. The maturity of a science is generally gauged by the extent to which it has developed a solid and valid foundation for the construction of theory.

Concepts have been defined as linguistic symbols (terms or words) that symbolize some aspect of reality that can be thought about and communicated. In effect, they represent ideational phenomena. Concepts and theories merely describe ideas and an idea is the most important feature of any theory. Former President Conant of Harvard University defined science as "an interconnected series of concepts and conceptual schemes." It is from such a body of relationships among variables that theories are built. Many concepts are not static but can vary in some manner. Those that vary are called variables. One of the major purposes of theory is to explain the circumstances under which variation in some variables influences variation in other variables.

Creative activity, whether in science or in art, is dependent upon the presence of concepts. With respect to art, this dependence is reflected in a statement made by Leonardo da Vinci:

Those who are enamoured of practice without science are like a pilot who goes into a ship without rudder or compass and never has any certainty where he is going.
The operation of cognition has often been obscured by applying the word "skills" to many processes as though they were to be learned by "practice" rather than through understanding. Learning by doing may apply to motor skills but not to concept utilization. It has been suggested that a greater separation may be needed between actions that must be learned by practice from those that are guided by concepts.

On the other hand, theory and practice are not antagonistic to each other. They are not only compatible but each is at its best when they are used interdependently. A good theory is very practical. It can be applied in many situations and reduces the complexity of understanding.

We are becoming more aware of a significant difference between purely verbal knowledge and conceptual knowledge. Such differences include the channels through which it is perceived and retained and the process involved in its learning. Most curriculum content is presented to students in a verbal manner with the teacher transmitting information and the students receiving it. Often the task of converting purely verbal material to conceptual form is a difficult one.

For purposes of curriculum planning, Woodruff defines a concept as "some amount of meaning more or less organized in an individual mind as a result of sensory perception of external objects or events and the cognitive interpretation of the perceived data."

Hempel has likened a scientific theory to a network in which knots represent the terms and concepts and threads connecting the knots represent definitions and hypotheses, representing a two-way communication between observable phenomena and theory.

The whole system floats, as it were, above the plane of observation and is anchored to it by rules of interpretation. These might be viewed as strings which are not part of the network but link certain points of the latter with specific places in the plane of observation. By virtue of these interpretive connections, the network can function as a scientific theory: From certain observational data, we may ascend, via an interpretive string, to some point in the theoretical network, thence proceed, via definitions and hypotheses, to other points, from which another interpretive string permits a descent to the plane of observation.

Research observations and theory building must proceed together toward increasing knowledge, with each making an important contribution to the other. A scientist may take either one as his starting point but he has an obligation to consider the bearing of his work on the interrelation of the two. If he focuses on empirical research, he must examine its relevance to theory. If his primary interest is in theory development, he must consider ways of testing and expanding his theory to remove it from the realm of interesting speculation. Theory stimulates research and enhances the meaning of its findings.
while empirical research tests existing theories and provides a basis for the development of new ones.

If a researcher begins with theory building, he takes a deductive strategy, moving from the general to the specific, and then identifying specific cases.

Let's use general systems theory (or functionalism in the social sciences) as an example of this approach. Such a theoretical construction exists in many disciplines and has provided a basis for describing relationships within the empirical world and for integrating scientific knowledge across a broad spectrum.

As Chin³ says:

Psychologists, sociologists, anthropologists, economists, and political scientists have been "discovering" and using the systems model. In so doing, they find intimations of an exhilarating "unity" of science, because the system models used by biological and physical scientists seem to be exactly similar. Thus, the system model is regarded by some system theorists as universally applicable to physical and social events, and to human relationships in small or large units.

The deductive character of functional and systems procedures is reflected in the fact that it is not the data per se which give rise to theory because the data are examined only after the main outlines of the system and its characteristics have been settled in advance by the theorists. The role of data is little more than that of illustrative material to be fitted into the appropriate theoretical categories.

General systems theory and functionalism, as developed in the social sciences, are closely related. Merton⁴ defines functionalism in terms of systems of relationships and the integration of parts and subsystems into a functional whole.

Using a biological analogy, functionalism makes the assumption that the operations of the social system are similar to those of an organism operating within an environment. Like the organism, the organizational structure of the social system may be represented as an adaptive response to environmental demands. The parts of the social system are considered functional as they contribute to the survival of the system by performing operations required for its existence.

The human ecology approach to home economics, with its view of the family as an ecosystem (a group of organisms interacting with each other and their environment) is an example of systems or functionalism theory. Of course, clothing and textiles are parts of this system.
I would like to take one concept and illustrate briefly how it may be integrated into a functional whole through the systems approach. You may think of many other examples.

Homeostasis is a unifying concept useful in explaining fundamental life processes. Originally the concept was applied by Cannon to strictly physiological processes. In this sense, homeostasis consists of dynamic forces operating within the organism to maintain a fairly rigid constancy or stability within its environment.

The principle underlying the operation of homeostasis within most of the systems and organs of the body appears to be the assurance of supplies of needed materials through storage, gradual release when needed, and replenishment. Some signalling device operates to warn the organism of deficiencies or excess supplies.

These forces, under the control of the autonomic nervous system, operate quite automatically, leaving man free to concentrate on higher functions under the control of the central nervous system. However, these two nervous systems are not entirely separate entities. Man can consciously assist the natural forces in some cases by altering his external or internal environment (i.e., surgery, clothing and shelter provisions, etc.).

Equilibrium concepts have also become fundamental in economic thought and the basis of this type of analysis is consideration of subsystems of a total system. Economics has shifted from static equilibrium models appropriate to closed systems toward dynamic equilibrium considerations appropriate to open systems. Leontief and his followers in input-output analysis utilize the systems approach as follows:

Considered from the point of view of the input-output scheme any national economy can be described as a system of mutually interrelated industries or—if one prefers a more abstract term—interdependent economic activities. The inter-relation actually consists in the more or less steady streams of goods and services which directly or indirectly link all the sectors of the economy to each other.

Equilibrium or homeostasis concepts form the basis for numerous philosophical and psychological theories, e.g.,

The Hedonistic Principle of Plato and Socrates

Freud's Pleasure Principle (based on the Nirvana or Constancy Principle)

Feneschel's Theory that the ideal condition of the organism is the life before birth, a relatively stimulus-free tension-free environment

Harry Stack Sullivan's view that a feeling of security is the end goal one is seeking
Hullian Learning Theory, wherein tension reduction is a reinforcement for learning.

I would like to cite one example of the application of the concept of homeostasis in the area of clothing. It is reflected in a research study I conducted on "Body-Image Boundaries in Relation to Clothing Fabric and Design Preferences of a Group of Hospitalized Psychotic Women."

It has been hypothesized that the body image reflects the self and that its psychological boundaries play an important role in maintaining homeostasis in the course of the individual's transactions with the world.

People have shown wide differences in the degree to which they experience their body boundaries as definite and firm—or indefinite and weak. They also differ considerably with respect to where they set their body image boundaries. While the body wall may be a primary reference point for many persons, the boundary may be perceived by others as encompassing clothing and other aspects of the environment which might appear to be far distant from the individual. As an extension of the body scheme, clothing may have the same symbolic significance as parts of the body. Clothing may be considered an extension of the self and can serve as a means of reinforcing body walls or of transforming the body image entirely.

Fisher and Cleveland reported that some of the data in their body boundary research suggests that, in the absence of a body-image boundary capable of supplying a minimum constancy in new situations (homeostasis), the individual finds it necessary to create exterior conditions which will artificially provide a substitute boundary.

I hypothesized in my study that women with concepts of their body boundaries as weak and indefinite rather than firm and definite may attempt to define these boundaries through clothing choices emphasizing such aspects as large fabric design, strong figure-ground contrasts, bright colors and rough textures.

Theories are empirically tested by research with variables that can be operationalized. Thus science depends upon operationalizing concepts.

To each concept, there corresponds a set of operations involved in its scientific use which provides meaning for the concept. An operational definition of a concept specifies its meaning by denoting the measuring operations used to identify it. Such definitions therefore reflect measurements and facilitate communication among scientists.

A literary definition of body-image may be stated as follows:

a psychological experience focusing on the individual's feeling and attitudes toward his own body.
In my research study, however, the operational definition was that the body-image is the degree to which the individual regards her body exterior as a defensive barrier as measured by her responses to Rorschach inkblots. Meaning is given to the variable by spelling out what the researcher must do to measure the variable. In making operational definitions, we must answer the question: "What will I accept as an indicator of my concept?"

It is beyond the scope of this paper to describe this research study and its results for we are concerned here primarily with conceptualization as a basis for research.

However, women with weak body boundaries preferred brighter, more highly saturated colors and stronger figure-ground contrasts in clothing fabrics than women with stronger body boundaries. This result was consistent with the report by Fisher and Cleveland that, in the absence of a body-image capable of supplying a minimum constancy in new situations (homeostasis), the individual finds it necessary to create exterior conditions which will artificially provide a substitute boundary.

One may also start from data systematically obtained from research and derive a conceptual framework or a theory from it. This procedure constitutes an inductive strategy, moving from the specific to the general.

**TABLE I**

**PROPOSITION: COLOR PREFERENCE IS INDICATIVE OF NEED EXPRESSION**

<table>
<thead>
<tr>
<th>Researcher</th>
<th>Sample</th>
<th>VARIABLE I</th>
<th>VARIABLE II</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PERSONAL ATTRIBUTES OF COLOR PREFERENCES</strong></td>
<td></td>
<td>ASPECTS OF COLOR</td>
<td>NEED FOR AFFILIATION</td>
</tr>
<tr>
<td>Compton, N. H.</td>
<td>145 Freshman Women</td>
<td>Compton Fabric Preference Test</td>
<td>California Personality Inventory (Sociability Scale)</td>
</tr>
<tr>
<td><strong>PERSONALITY CORRELATES OF COLOR PREFERENCES</strong></td>
<td></td>
<td>CHARACTERISTICS OF COLOR</td>
<td>NEED FOR HETEROSEXUALITY</td>
</tr>
<tr>
<td>Bjerstedt, A.</td>
<td>603 Males from pre-school to university</td>
<td>Modification of Pfister Color Pyramid technique (preliminary form of paired color pattern device consisting of 166 pyramid patterns)</td>
<td>Edwards Personal Preference Test</td>
</tr>
</tbody>
</table>
### TABLE I (continued)

<table>
<thead>
<tr>
<th>SUMMARY STATEMENT OF RESEARCH</th>
<th>VARIABLE I</th>
<th>VARIABLE II</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Researcher</strong></td>
<td><strong>Sample</strong></td>
<td><strong>Indicator I</strong></td>
</tr>
<tr>
<td>ATTITUDES TOWARD TIME AND AESTHETIC CHOICE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knapp</td>
<td>77 College Males</td>
<td>Knapp Tartan Test</td>
</tr>
</tbody>
</table>

### TABLE II

**PROPOSITION:** A POSITIVE CORRELATION EXISTS BETWEEN CONFORMITY IN DRESS AND SOCIAL INTERACTION

<table>
<thead>
<tr>
<th>SUMMARY STATEMENT OF RESEARCH</th>
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<th>VARIABLE II</th>
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<tbody>
<tr>
<td><strong>Researcher</strong></td>
<td><strong>Sample</strong></td>
<td><strong>Indicator I</strong></td>
</tr>
<tr>
<td>CONFORMITY IS RELATED TO EASE IN SOCIAL INTERACTION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aiken, R. L.</td>
<td>300 Women</td>
<td>Aiken Clothing Opinionnaire Results factor analyzed into dress clusters.</td>
</tr>
<tr>
<td>CONFORMITY TO FASHION IS RELATED TO DESIRE FOR SOCIAL INTERACTION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cobliner, G. W.</td>
<td>18 Women</td>
<td>Questionnaire</td>
</tr>
<tr>
<td>CLOTHING AND SOCIAL INTERACTION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taylor, L. and Compton, N.</td>
<td>35 college Women</td>
<td>Aiken Clothing Opinionnaire- (conformity cluster)</td>
</tr>
<tr>
<td>CONFORMITY IN DRESS RELATED TO SOCIAL EASE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Russell, S. S.</td>
<td>295 girls (13-18 years)</td>
<td>Questionnaire</td>
</tr>
</tbody>
</table>
Research in Clothing and Textiles is interdisciplinary in terms of both the concepts and the methodology employed. Most participants in interdisciplinary research feel the need for integration of concepts in such research. We must strive to develop more programs of a programatic type. In such research an experienced worker conducts a series of related studies designed to prove or disprove a common theory. By contrast, the graduate student generally conducts a single study which often is both his first and his last research effort. A large portion of research in clothing and textiles seems to be of this single-shot variety.

The task for present and future professors and graduate students in clothing and textiles will be to build on research studies being conducted in our field, toward developing an integrated body of replicated studies which can serve to predict the future. We cannot simply conduct separate studies of selected parts without eventually looking at the whole structure of clothing and textiles - society - self.

The challenge is great. It will require a creative approach as well as cooperation with scientists in the basic disciplines. We will also need to require an increasing emphasis in our curricula on theoretical understanding of the behavioral and other sciences and their application to clothing and textiles as well as more emphasis on statistics and other research tools.

But through this endeavor we will become participants in the creative process, which is defined as the imaginative re-combination of known elements into something new. All science and art are concerned less with facts than with relations, less with numbers than with arrangements.

The process of acquiring existing knowledge is different from the process of producing new knowledge and ideas. But is it not the latter process that we need to foster in our teaching and service programs? In this way we can integrate our research, teaching and service programs and our roles can change from that of purveyors and consumers of information to that of creative producers of new knowledge and ideas to solve personal and societal problems. It has been said that the economic supremacy of a country may soon rest upon the creative ability of its citizens rather than upon the rich material resources it once possessed, and as Arnold Toynbee said, "To give a fair chance to potential creativity is a matter of life and death for any society." May it not be the same with an academic discipline?

---


2 Hempel


Cross cultural methods of study can be utilized to teach so many different concepts that the teacher has difficulty selecting those which will be most useful to students in their future. In the recent past being born in any culture led one to believe in, to know with assurance, the knowledge one gained from the experiences of that way of life. We had few opportunities to make valid cross cultural comparisons. Today we have instant information from all over the world. We have multiplied the range of possibilities available to us in life styles, in aesthetic values, in technology, in political and economic systems, in religious beliefs. We are aware of the problems which exist in many parts of the world. The telescoping of events through rapid communication has caused assumptions of permanency to disintegrate. We now must learn to live with rapid changes, to adjust continually to new sets of circumstances, to learn to cope with swiftly changing environments.

As educators we emphasize the development of the ability to cope with the world in a creative and positive manner. The process of education aims to produce people with the ability to identify problems and the resources to solve them. The concept of education is focused on the ability to know how to learn, how to analyze, to define and to respond. We not only make problems the object of study but we learn through solving genuine problems.

The experiences of other cultures, past and present, provides us with more alternative solutions. Making comparisons between cultures can increase our awareness of the interrelationships of factors whether we are concerned with solutions to environmental or economic problems with social adjustments, or with understandings of ourself or the behavior of others, we can analyze the relationships between the socialization process and adult values and personality characteristics, the relationship of role behavior to social structure, the relationship between various symbolic systems and communication problems between adverse groups. Cross cultural comparison expands our understanding of basic concepts in any field.

Today I'd like to demonstrate how the study of another culture can increase our understanding of the process of change in our own culture. I'd like you to assume the role of a student.

Prior to this lesson you have studied a number of different cultures, ancient and modern, where the emphasis has been on increasing awareness of patterns of dress and of motifs in fabrics and their
meaning. You are familiar with the importance of these motifs to the cultures we have studied. We've tried to learn to experience clothing objects from the viewpoint of other cultures.

You have read cross cultural research. You are aware of the kinds of hypotheses tested in family studies, in anthropology and sociology. You have identified generalizations from reading basic references in clothing which could be tested by cross cultural research methods.

You have been studying and you are familiar with the traditional fabrics, clothing, textile technology, and values of India and China. You have been reading about Indonesian batiks and you know a little about the history of southeast Asia.

In previous lessons we have defined change as a succession of differences in an object over time. We have talked about social change as differences in some social norm role, status, or other aspects of the social structure. We have been particularly interested in the meaning of change in items of dress. Some dress changes were related to social changes. We've become aware of the changes in symbolic meaning of different items or different parts of items of dress. We have been interested in understanding the process of change and the factors which produce change.

We have studied three different aspects of change. The first is not change at all but the other end of the continuum, the tendency to maintain, to preserve, the persistence of some item of culture. The second is substitutionary in character—one form replacing another for the sake of variation. The third type of change is revolutionary, changes in type, discontinuities, changes in structure or pattern.

In our society we place a high value on change. Contrast this value with the values of societies, past and present, that revere the past and have a strong preference for doing anything the way it has always been done. The new is unknown. The customary ways have been done for centuries and seem safe because they have been tried. Once an adaptation of some kind has been effected, there is a strong impulse to retain this mode of adaptation. The entity continues to exist because it has utility in the psychological realm if not economic or physical utility.

The second kind of change occurs in cultures which continue to live in the traditional way as well as in those which value change. These often are modifications for the sake of variety, adjustments or substitutionary types of behavior. Most changes in dress are of this type. All cultures evolve a distinctive type of apparel consistent with the locale in which it occurs and the basic values of the social system. For the sake of variety, the elements which comprise this basic mode evolve and change. The changes are cyclical and evolutionary in character, fluctuations which shift back and forth between the range of dimensions acceptable to the culture.
The third type of change, changes in type can best be learned in cross cultural studies. Through a study of the history of any culture, one can pick out those changes which are revolutionary in character. One can study the conditions which produced the change in type. Historical evidence contradicts evolutionary and directional theories of social change. A change in type is not usually a culmination of a series of minor adjustments or modifications. This third type of change results from mixtures and collisions, from a crisis or conflict between two or more value systems or life styles or a change in the habitat. This type of change is almost always the work of an individual or individuals.

Robert Nesbit in Social Change notes that the following three conditions are usually present:

1) A mind prepared to change in an environment which requires it.

2) The environment contains all the essential elements for the changes which occur. In other words any innovation is usually composed of new combinations of existing elements but the items have not previously been used in the same context.

3) There is an agent to effect the change--a person or people who rebel against the existing order who work to accomplish the change often outside the system.

In the history of revolutionary changes, bursts of creativity come from contact of opposing ideas, of contact between cultural systems. They are often part of wars or follow wars. There is nothing like fighting for survival to force man to be creative.

Dress offers an opportunity to analyze maintenance of tradition values, both evolutionary or substitutionary and structural changes of factors related to the magnitude of change, of the effect of change on the changing unit, of the time span involved in making changes, of the changes in symbolic systems which accompany social change, and of the dynamics of change.

I'd like you to analyze Malaysian dress with me. While viewing the slides, will you identify any item of culture in dress, housing, food, child rearing practices, festivals, etc. in which the traditions of the area are being maintained. See if you can determine why these traditions persist. Identify evolutionary or substitutionary changes in dress as well as those which are revolutionary in type. Please note any discontinuities in the basic structure of Malaysian life. Who are the agents of change? Who are the individuals who are working to accomplish change? Where are they successful or unsuccessful and why?

I chose Malaysian dress to illustrate principles of change; first, because I've been there recently; second, because the country is in the process of making structural changes in society. The year 1971 was the beginning of the Second Malaysian Plan. This plan provides a blueprint for a new economic policy to achieve two objectives. The
first is the eradication of poverty irrespective of race. The second objective is the restructuring of society to reduce and eventually eliminate the identification of race with economic function in the process of building a fully integrative society.

Many Malaysian women, particularly the young, wear western dress part of the day. Most wear traditional dress for everyday dress, but particularly for special occasions. Often you see women wearing partly traditional, partly western dress. In addition, traditional dress often reflects the latest fashions in fabrics, colors and other decorative items.

The traditional dress of Malaysia contains elements of traditional dress of the countries which surround it. Malaysia lies in a crescent close to the equator. It borders the shortest sea route between India and China and is situated almost equidistant between these two land masses.

Malaysia occupies two regions—the Malay Peninsula and the northwest coast of the island of Borneo. These regions are separated by about 400 miles of the South China Sea. The capital, Kuala Lumpur, is 1220 miles from Kota Kinabalu in the north part of the state of Sabah. Thailand is to the north of Peninsular Malaysia and in the south it is connected by a causeway to the republic of Singapore. Across the Straits of Malacca lies the Indonesian island of Sumatra. Some of the leading women in Malaysia are descendants of the matriarchal societies of Sumatra. The Philippine Islands lie northeast of East Malaysia. Ancient and modern history show succession of diverse groups of people coming into the area.

The population of over 10.5 million is composed of three main racial groups—Malay, Chinese and Indians. About 45% are Malay, 35% Chinese, 10% Indian and Pakistani, 6% indigenous groups such as the Kadazan in Sabah and the Iban or Sea Dyak in Sarawak, and 2% Eurasian or European. The Chinese are mostly engaged in trade and commerce. The Malays were happy to let the Chinese do all the work until they realized that the differences in economic wealth were important in the modern world. Each group has maintained its identity in language, customs, religion, festivals and a few minor aspects of dress. All races identify with Malaysia as their country and home. Malay dress has been adopted by most of the people.

Like its multi-racial population, various religions are practiced. The state religion is Islam but freedom of worship is guaranteed by the constitution. The fashionable maxi skirt was particularly adaptable to the characteristic Moslem dress.

The climate is tropical and wet. The interplay of wind systems which originate in the Indian Ocean and the South China Sea divide the year into two monsoon seasons. There is no dry season, there are periods of several weeks when there is no rain. The average rainfall per year is between 80 and 100 inches. It usually rains during the evening rush hours. We soon knew why the gutters were three or four
feet deep. The average daily temperature varies from 70°F to 90°F. Relative humidity is generally high. No one wears hose, particularly panti-hose.

Most of the population live on or near the 3,000 mile coastline. Traditional housing is on stilts due to the frequency of the monsoon rains. The rapid growth of vegetation and the abundant supply of fish made food production relatively easy in the past. Women traditionally have harvested the plant crops, fed chickens and other fowl as part of food preparation activities. The men fished, took care of the ceremonial aspects of their life, and guarded the women engaged in farming activities. Home economics in Malaysia is closely associated with agriculture. The professional home economist may have animal husbandry, botany and other agricultural courses as part of their specialized training.

Land settlement is one of the major vehicles of progress in agriculture and socio-economic development. This form of development gives rural people an opportunity to resettle in planned land settlement projects. These projects provide the basis for better farming, better business and better living and above all a pride in their new communities. "Women play a vital role in the development of these communities. The Federal Land Development Authority encourages the growth of women's organizations, women's participation in small business projects such as tailoring and planting of short-term cash crops and increased the number of home economics courses." (Malaysian Official Yearbooks, 1971, p. 261)

Education is used throughout the country as a tool for achieving the objectives of the second Malaysian Plan. Education traditionally was in English. To improve the education of all in order to improve their economic condition, the government is requiring that educational systems use the national language, Bahasa Malaysia. It also is part of national pride to return to the Malay language. However, with the many languages and dialects still present English is widely used in commerce and industry and is a compulsory subject in school.

Home Economics training is an important agent in the improvement of rural family life. Each year a number of girls who have shown leadership potentialities are given home economics and leadership training in strategically located schools throughout the country. These girls return to their villages and remain a part of the community. They take pride in applying their education and helping other rural women to achieve a better standard of living similar to the high standard present in urban life.

There are thirteen states in the Malaysian Federation. Each state has a governor or sovereign ruler. A Conference of Rulers established by the constitution elects one of their number to be king. He rules during his lifetime. Upon his death the conference elects another of their group to be king. The head of the government is the Prime Minister. There is a senate and a house of representatives in the Parliament. The British influence in constitutional government and in the educational system comes from a long history of commercial relationships.
We were fortunate to be invited to the marriage festivals of the grandson of the governor of the state of Sarawak. The family chose to follow traditional Moslem customs. The guests wore traditional costumes. We sat on the floor with Moslem women, gossiped and chewed betel nut and lime. The bride wore a traditional white satin western wedding dress but received guests in the traditional manner.

Thus the changes in women's dress represents the social and economic changes occurring in Malaysia. The forms of dress which are particularly suited to the climate persist. A number of innovations are being accepted which represent the identification of the country and its people with the modern industrial world. Those who identify with the goals of the changes adopt new forms of dress. Where the basic beliefs essentially stay the same, the traditional symbols remain. Variation is achieved in either the modern or traditional dress by adopting beautiful forms of other countries—the beautiful batiks of the Indonesians, the textures and patterns of China and India, and the beautiful white wedding gown of the Western World.

Bibliography


It is an honor to be with you today to talk about a subject that is very vital to me, the Chilkat Blanket. For those who are not aware of what it is, I brought with me two blankets, they are dancing blankets, nobility blankets, with fringe about the body. You make a left hand turn as you come in the door, you bounce and the fringes bounce with you. The beauty of the blanket is on the back. There are two distinct types of designs, and two distinct types of weaving on these blankets.

Five summers ago Dr. Petzel of Oregon State University, called me in as professors do, and said, "Have you given any thought to the title of your research or your research for your thesis?" My interests were design for crippled elderly ladies or synthetic fibers vs. wool fibers in wet felts for paper making, since at that time I lived in Campbell River, a pulp and paper town. Dr. Petzel smiled and handed me a piece of paper, The Oregonian. She said, "See if Doris Gruber will see you. You live amongst the Indians; go and find out about Chilkat Blankets." Thus began, for me, not only the search for a historical textile, but a search into the meaning of being Indian. Where do you begin to do Historic Textile research? You go to museums, books, people who own them, to collectors, to the Indians themselves, if they have these blankets. I went to the museum in Victoria and they said read Emmons. I went over to Wilson Duffs at UBC and he said, "Don't try to interpret the patterns." I went back to my classroom and asked the Indian students that I had. "Oh, I believe my grandmother has a whole blanket." That was in 1969. The Indian, in our area at that time, had not started looking for an identity; it is a different story today. I joined every conference and committee that had the word Indian included. I went to one conference, and this is the concept behind my idea of Historic Textiles, at this conference they said, "If you want to know Indians go and live with Indians in their homes. Let books tell it the way it is." This is a concept I have learned to live with and believe in.

The area of my study is upper Vancouver Island, the northern end up to the Queen Charlotts, and finally up to Alaska. This picture is the Old Lady who made my thesis possible. When you use the term "The Old Lady or That Old Lady" in the Indian family, it is a term of
respect. She lives on the Komats Reserve. I joined the Museum Society and the curator there said, "If you want to learn anything about the Indians see if Mrs. Frank will see you." She allowed me to go and visit with her. She didn't talk about Chilkat Blankets at the first meeting, but she said she was in a film in 1915 by Curtis. "I was the heroine, and I have been looking for 30 years for a book called In the Land of the Head Hunters. I listened to her and then went back to school. I got a class to write fifty letters and mail them all over Vancouver and Victoria to every bookstore. I found an original copy. It cost me $25 and it was signed by Curtis. I took it back to her and she led me to the source of the blankets in Fort Rubert. We have had an enduring and wonderful friendship over the past five years.

Customs of the people. If you are invited into their homes and don't feel you have time to have tea, you must not decline, you must stay and have tea. On this first blanket, the coloring is different. If I had been two years earlier doing my research the Old Lady would have been able to tell me so much more. Unfortunately, she became senile. This blanket was traded to get names, or to get crests. They married off a son who was ten years old to an 11 mo. old girl, one tribe to another, in order to get the blanket. This is a precious status item in Indian culture. To get the names, the dances and the blanket it was potlatched. Five hundred dollars in gold pieces were paid to get the name, the crest and the blanket.

"If you want to learn anything about Chilkat Blankets be prepared to get down on your knees," they told me when I first started my research. The Indians respect this blanket. Only those who have the right are entitled to wear this blanket. You have to be born into nobility or acquire it through marriage.

Every blanket has a different design in the center, they can be identified by the central design and the teeth. Signatures are woven into the lower corners. Sometimes, to fool the white man, they change their signatures so they cannot be identified.

Teeth: The weaver of this blanket did not really know how to weave, so she adapted, improvised, simulated. She made the teeth by doing a couching stitch. By looking on the back you can see it is not woven. This is the only example in Chilkat weaving where you use a white and black thread together and you alternate them, that is how you get the teeth. She did not know how it was done so she made up her own way.

The ingenuity of these people - The weaver did not know how to do loom sewing, so she took a needle and thread afterwards. She came down from the north where her people made these blankets, but she was all alone amongst foreigners (a different tribe), that were hostile to her people. She wanted to have some of her home with her, so what she did not know she simulated. She painted a traveling pattern board on a piece of cloth and used that to work from. What did she do with the warp? When she could not get cedar bark she used cotton core or jute and spun her own from the sheep she had.
Here is her loom, (picture) a completely different loom, it is still in the village. It doesn't have two uprights, it is hung by a hook and cord from both sides. She could move it up and down as she needed.

Here are pictures of two hats I found, you cannot help but find other things when you are looking for something. She developed these hats to wear as Chief Hats. They are all beaded and are made of velvet, and tops of billiard tables.

Look at the beauty of the weaving, shown in this illustration. Look at the outlining stitch around each color change. Look at those claws. Some people say figures with three claws are birds, four are animals, and five are human hands.

Last month I was invited to dance at a Potlatch. This is the second time I have danced at a Potlatch. The first time it was to receive an Indian name, my husband danced with me. This involves a solo dance in front of a lot of people in a big house. This is the way they tell the people anything they want to be permanently recorded, since they don't have a written language as yet. It was announced to the people there that I, because Mrs. Franks husband had been killed, she was stepping down in the village. Her daughter was taking her place and moving up into the fathers place, and I was moving into the Old Lady's place; and this is where I am at the present moment.

In conclusion, I would like to say that I have been fortunate during the past five years to have been allowed to watch and associate with the emerging Indian. I have gained a first hand respect for their culture, their traditional way of life, and an insight into their contemporary problems. My only regret is a constant feeling of a lack of background in Anthropology. How much less of a struggle my research might have been if I'd been exposed to at least one course in Anthropology during my university undergraduate years. Perhaps it is time to consider greater interdisciplinary integration between faculties. A horizontal curriculum, would be desirable for a combined postgraduate degree in sociology, anthropology, home economics, and what about agriculture?
INVESTIGATION: JUST WHAT IS IT THAT WE ARE LOOKING FOR, ANYWAY?

Dr. Geitel Winakor, Iowa State University

In calling this talk, "Investigation, Just What Is It That We Are Looking For Anyway?", I am recognizing that we are all in the same boat together. I think it is a somewhat shaky boat.

The general theme of this meeting is Design For Teaching. Because we are college professors of Textiles and Clothing, teaching is the major responsibility for most of us. Yet in our field too many of us have not yet come to grips with the fact that research is an absolutely essential adjunct to university teaching. Too many still view research as a fringe, a frill, an appendage to be barely tolerated in some cases and also something which we would rather be taken care of by someone else, preferably elsewhere.

All of us are aware of the serious budgetary problems to be faced by colleges and universities and the fact that enrollment will at best remain fairly stable in the future, if not decline. All of us are aware that each program will be scrutinized very carefully by the administrators of our institutions, and questioned by legislators, trustees, and taxpayers. I believe that although there may be much clamor from legislators and the public for university personnel to teach more and do less research, in the end the programs which will survive at the university level will be those that produce much of their own knowledge and that integrate teaching and research most effectively. Programs failing to do this may be transferred to the 2-year colleges or eliminated. Although there is a clamor for economy, there is also a clamor for application of knowledge to solving society's problems.

All of us are aware of the apparent identity crisis in Home Economics and the number of institutions that have changed the names and organizations of their Home Economics units, although the number of such institutions making this change seems to have declined recently. I believe that such name changes are symptoms of a rather serious underlying illness and that they deal mainly with appearances rather than with the real problems. We have an identity crisis in Home Economics, a crisis which by the way is not unique to this field. It is a symptom of our efforts to justify our existence and to make ourselves seem more important and "relevant" to others. As such, however, name changes are merely cosmetic, and most organizational changes appear to be mainly matters of convenience.

I believe that part of our identity problem in Home Economics is associated with problems of the socialization or acculturation of
women. Home Economics has to some extent been a sheltered workshop for women who do not really wish to get in there and mix it up in the "real" field of research. These persons have behaved, consciously or unconsciously, as advanced high school teachers, content to gather their information for teaching from books and journal articles and various other sources. But they have not been willing to take responsibility for generating new knowledge themselves. They have rationalized this partly by saying, "ours is an applied field and therefore we can teach by applying the findings of others". More men have come into the field and while some of them are excellent, others are rejects from other areas; men who have come into Home Economics because so few women have been willing to take on the responsibilities of research and of research administration and have wanted to stick strictly with teaching and the administration of teaching programs.

I am deeply concerned that if Home Economics and particularly if Textiles and Clothing is to continue to be a part of the curriculum of major universities in the coming years it must recognize and get down to the generation of its own new information. What particularly disturbs me tonight is that, as I look back at old Proceedings of this association, I find that this problem has been recognized for a long time, yet very little progress has been made toward its solution. For example, at the national meeting in Detroit in 1964, the first in which I participated actively, a major portion of the program was devoted to concepts in Textiles and Clothing. Today, we heard a talk on conceptualization. After ten years we are still discussing the same topic at approximately the same level. In 1969, five years ago, I spoke to the central regional meeting about survey and experimental research. Although we have had research reports at regional and national meetings of this association, we still spend far more time talking about research than talking research.

While new information is popping out like measles in other fields, we seem to lack the desire, or the new information, or both, to share research findings at these meetings. Perhaps I exaggerate, but this is a very disturbing observation. Think of the change that has occurred in the field of geology during the past 10 years. If you don't know what I mean then you are not up to date on your general scientific reading, and should make immediate efforts to remedy this. Another field in which change has come very rapidly in recent years is biology.

Although we have made some progress in our field, I am inclined to feel that we do a great deal of sitting around, rubbing our hind legs together like crickets. Noise has been generated, but not very much light. And we get the same old speakers: Compton, Roach, Eicher, Winakor. Aren't you tired of hearing us talking again and again about research, teaching, concepts, and so forth? Wouldn't you like to hear our research? As I review the remarks that I made at the central regional meeting in 1969, I have two reactions. One is that most of them would bear repeating. But I don't want to repeat myself, because people would say "Can't she think of anything new to say?". On the other hand, if I say anything greatly different I suppose they'd say "She's not consistent".
The problem in textiles and clothing, as I see it, is an insufficient quantity of research, an insufficient quality of research and too few people participating in research. Among those not involved in research, I see inadequate understanding and very often outright antagonism to research. As I examine the transcripts of people with recent Ph.D.'s who are applying for jobs, I remark on the scarcity of root discipline course work in the records of most of them. There is one Textiles and Clothing course after another; there is in an entire Ph.D. program perhaps one or two statistics courses. How many doctoral programs in Textiles contain a healthy quantity of chemistry and physics courses? How many doctoral programs in the social science areas of clothing have enough sociology, psychology, or economics or some combination of them to really come to grips with the problems at hand? Such doctoral programs exist, but too many students prefer less rigorous programs. Research must have an underlying foundation of theory, plus a thorough understanding of methodology, and without adequate training in the root disciplines at the graduate level these people cannot possibly have a deep understanding of theory and an ability to use it effectively in their work.

Another handicap in textiles and clothing research is an excessive focus on current problems. This has always been a characteristic of Textiles and Clothing research. We are an applied field and research on current problems is expected of us, particularly by extension people, secondary school teachers, and the public. This is not to say that I think research directed to problems is unimportant, but I think that we must have some notion of where we are going to underlie and tie together our problem-solving research.

About 15 years ago, Florence Petzel and Karlyne Anspach reviewed research in Textiles and Clothing, respectively, during the first 50 years after the founding of the American Home Economics Association. These papers appeared in the Journal of Home Economics at that time. In reading these papers one realizes how much research was oriented toward specific problems and the fact that there was a tendency to drop a problem like a hot potato when circumstances changed. Then when the same problem came up in another disguise or in another form at some later date there was seldom anything completed on the subject and the researchers had essentially to begin all over again where they had left off. Problems were not pursued through to their solutions so that information would be available for application when a similar situation arose later. I believe that this sort of thing is still going on. If you examine the thesis abstracts published by the American Home Economics Association each year, you find that much of our research is still being done in isolated master's theses.

One of the first things that Textiles and Clothing researchers should do is to define at their respective institutions and for themselves as individuals research programs, not problems to be solved. Over the years I have become convinced that unless each researcher has a research program, and unless these programs are integrated within the department, we are going to move ahead very slowly, if at all.
Personally, I have four research programs in effect. That's probably too many, but at any given time only two or three of these are active because I don't have the students for all of them nor do I have the time for all of them while I have my present responsibilities. If a student comes to me and wishes to have me advise her on her thesis I ask one of two things. Either she must fit her research into one of my ongoing programs, or she must come prepared with an idea which she wishes to pursue on her own and show the ability to pursue it on her own. Of course, this research too must fall within the areas where I am qualified to direct research. If she wished to do something in an area where I was not qualified and current, or in which I was not willing to start to become so, I would have to ask her either to change her proposed topic or to select a new advisor. I would not wish to begin a new topic unless I wished to develop it into a program, and that would require a decision to abandon one of my existing programs.

Some professors with whom I have talked feel that it is unreasonable to expect students to fit into your own research program. My experience is that very few master's students are ready to plan theses of their own independently of something that a faculty member already has under way; for the occasional exceptional student who can plan and carry out such a study, I am more than willing to go along with her. But nothing much is going to be accomplished either for Textiles and Clothing knowledge or for the student by having each student do a diddly little project unrelated to other work going on.

Compared to other academic fields, I believe that Textiles and Clothing has been particularly laggard in defining research programs as contrasted to isolated theses and small projects. Textiles research, it seems to me, has a particular tendency to chase off after the latest butterfly for which money and support are likely to be available. The present fad for flammability research is a case in point. Flammability is important; the problem is serious; but everybody whether qualified or not, doesn't need to be chasing it. In fact, because specific problems are easier to spot and support may be easier to obtain for specific problems in Textiles, I think Textiles people are even more seriously at fault than clothing people in pursuing problems rather than programs. Another recent fad in textiles is energy-related topics--textile researchers are busy climbing aboard this bandwagon whether they have any background in the topic or not. A particular reason for stressing programs rather than problems in textiles research is the length of time required to complete many research projects. It is a more common event in textiles than in clothing that the problem is out of date before the research is complete.

A second point, which cannot be overemphasized, is the need for better conceptualization. We must have an understanding of the concepts common to our field, both those that come from root disciplines and those which we have defined ourselves. NCR-65, a regional committee to which I belong, plans next February to devote its meeting to a discussion of fashion as viewed from points of view represented on the committee, which includes people from several social science areas. I
think this is potentially a very important contribution that this com-
mittee can make because Textiles and Clothing has a view of fashion
that extends beyond that in the various root disciplines from which
we draw our basic concepts. Although marketing research people have
dealt with fashion a great deal, I don't think they have conceptual-
ized it satisfactorily. In fact I find their papers on fashion to
be a dreadful omelet of variables and controls scrambled together.
They don't really know what they are studying and what they are hold-
ing constant. Nevertheless, they are getting much more public atten-
tion and support for their fashion research than we are. I think we
are capable of doing a much better job of it, when--and if--we get
ourselves put together.

Another area in which work might well be pursued is the applica-
tion of values to clothing. Some years ago, work along these lines
was done at Pennsylvania State University, but little definitive work
seems to have been done in this area since. An occasional paper comes
to the Home Economics Research Journal dealing with clothing values,
but reviewers have pointed out that although the Pennsylvania State
University work is usually cited, the authors of the papers do not
really seem to understand it nor do they apply the concepts correctly.
The values, as defined in the Pennsylvania State University research,
are outdated. They need to be updated and further defined and tested.
Here is a research program waiting to be resumed! Misapplication and
misunderstanding of previous work will get researchers exactly no-
where, and that, I fear, is where some of us are heading.

In my own field I have defined concepts pertaining to clothing
consumption and continue to attempt to define them more satisfactorily.
Regrettably, I often see research in which people have used these
concepts incorrectly or in which they indicate that they don't know
that the concepts have already been defined.

There are many areas in which concepts have not been defined ade-
quately. The paper contributed by Lowe and Anspach to the June 1973
Home Economics Research Journal was, as the reviewers stated, an ex-
cellent contribution toward remedying this kind of problem. We de-
sperately need more papers in which people raise questions about our
conceptualization and suggest ways of improving it and testing hy-
potheses about it.

Third, we need to base our research more strongly on theory, and
theory comes largely from the root disciplines. It is promising that
we have two speakers scheduled tomorrow on physics applied to textiles.
In order for textiles or clothing research to achieve general solu-
tions to problems, solutions applicable not only to the immediate
problem situation but in future situations, our research must be based
on theory and the solutions to our problems must be stated in terms
of theory. We have been guilty of doing much too much descriptive
research, where in we have described a current situation and perhaps
proposed some means of dealing with it but where the findings have
little further application or the application to a later situation is
extremely difficult to determine. Descriptive research has a proper
role to play, but it is only a preliminary kind of research that is done before one gets down to the nitty gritty of doing more serious research. To describe a situation is a kind of a ground or foothill activity; then you have to climb over this and get on to the main stuff. We have been poking around in the foothills far too long; I would almost say many of us are hiding out there.

As an example of research without theory, I give you the many studies in Textiles and Clothing which involve "satisfaction". Excuse me if I am kicking one of your sacred cows, but I do not think this research has gone anywhere toward solving any basic problems despite the huge amount of resources put into it. Until research on satisfaction is given some kind of theoretical base, I do not think it will produce any findings of lasting significance.

Fourth, we have not effectively used all of the various research methods available. For example, an excellent article by Mabel Skjelver appeared in 1971 in the Journal of Home Economics on the application of the historic method to Home Economics research. Yet, no paper applying the historic method to research in home economics has been submitted to the Home Economics Research Journal in the first two and one half years of its existence.

Nor have we dealt with a full range of topics reflecting our subject matter. I know of no research programs in the theory of patternmaking and fitting since Norma Hollen retired a few years ago.

Fifth, research must be effectively designed. I think a tendency sometimes present in our research is to include everything but the kitchen sink. I could name some names in this but I think I'll refrain from doing so. My concern is that when a researcher has a grant or a productive doctoral student, she should be very careful to define exactly what the problem is and exactly what she is going to do, and not attempt to cover the waterfront in fear that there may not be another opportunity later. Separating out all of the many variables and coming to any kind of reasonable conclusion is very difficult unless the design is plainly stated, the objectives of the study clearly expressed in this design, and the controls and variables expressly recognized and stated.

I have quoted many times from the article by John Platt in Science magazine (1964) on "Strong Inference". Platt emphasized the need for logical hypothesis testing, whether statistical or otherwise, and the urgency of following the scientific method. All too many researchers in Textiles and Clothing behave as if they know nothing about the scientific method and the technique of strong inference. Our researchers need to study logic and the scientific method more completely than they have done so far, and to incorporate these into every research project, large or small.

Another subject on which I have been known to harp at length is the need for statistical understanding on the part of Home Economic researchers and on the part of Textiles and Clothing researchers in particular. I am convinced that this is something that you cannot let George (the statistical consultant) do for you. Each Home
Economics researcher must have a sufficient understanding of statistics to talk logically with her statistical consultant, who cannot be dispensed with, and to plan the research and interpret the findings appropriately.

Many papers are submitted to the Home Economics Research Journal which suffer from what I call statistical schizophrenia. It is clear that the clothing and textiles person does not understand the statistics, and that the statistical advisor does not understand the clothing and textiles. If correcting this difficulty means going back to school for a lot of us, so be it. We all know, or at least we all say we know, how easily people become obsolete today. Let us do something about it. I find that I have to go back and retake or audit certain statistical courses about every five years, and it's almost like taking a new course each time.

One of the appalling things to me is that many people in Textiles and Clothing seem antagonistic toward statistics as if it were something evil, dirty, or at best unladylike. I cannot but think that this is part of the women's status thing and that matters statistical, like matters mechanical, are regarded as things with which females should not dirty their hands or clutter their minds. I remember that when I first started work on my Ph.D. a prominent and respected administrator in Textiles and Clothing said to me, "You aren't going to take the statistical approach, are you?". Well, I would argue that if you don't take the statistical approach you had darned well better take some kind of an approach. The historic approach, with its research techniques, is an alternative. The logical approach is yet another, but I think that the more tools each of us has in her bag, the better our research will be. For example, you cannot hide in the sand and take the historical approach alone any more because history is using more and more statistical techniques, such as numerical taxonomy.

I am sure that there is a strong fad element in the statistical approach particularly as the electronic computer has become more widely available. For a while, everybody was going "ape" over factor analysis, whether it was an appropriate tool for the job or not. But there is also a very powerful and lasting element in the statistical approach, and it will be with us for a long, long time.

There is no question that the statistical approach can sharpen up our research. A few weeks ago, I was monkeying around trying to explain what was going on with the data I had for more than 1100 families interviewed in a household textiles survey. A graduate student of my statistical consultant did some extra analysis experimentally for me. He was able to explain, in a series of relatively simple equations, what I had been trying to explain in text for five or six pages. Had I thought of it, I could have run these equations myself—but I didn't think of it. I wound up with one page of text nailing down the solution instead of five which merely discussed the problem.
In closing, I must say something about the presentation of research. All of us need to use good plain English with less jargon, and write better. There is no excuse for the fact that many of our research articles cannot be understood by advanced undergraduates and beginning graduate students. I am convinced that research papers should be used instead of textbooks in upper level courses. Textbooks are all right for beginning students but advanced students should be getting new information, hot off the griddle, if we have any. But if researchers insist on writing as if English were a foreign language to them, their findings are not going to be useful in teaching.

I also do not see why our research cannot be clear to moderately advanced students, extension workers, secondary school teachers, and others who may have an opportunity to use it in their work. Researchers should talk to other people besides just themselves. Unlike many researchers, I do not think that the solution lies in having popular writers write up research for lay people. I think the solution is for the researchers to write more clearly in the first place.

I think it has probably been evident from my manner that I feel very strongly about these matters. I feel that our mutual survival and the survival of our field depends upon the increase in quantity and improvement in quality of our research. I think that is a responsibility none of us can duck, although some of you sitting in this room might prefer to crawl under the table. If we do not all hang together in this matter, then we will surely hang separately. And personally, if Home Economics is shunted down to the junior college level, which I certainly hope it will not be, I don't want to go. I believe we are capable of standing up with the other fields that produce new information, if each of us only has the will and determination to do it and the necessary willingness to face the realities of modern research.

And now - having begun with a question, I will end with another-- where will textiles and clothing be 10 years from now?
TEXTILE CHEMISTRY AND ITS PLACE IN HOME ECONOMICS RESEARCH

Dr. H. Rex Richards, Colorado State University

If all the components of the title of this presentation were well-defined, the function of textile chemistry in home economics research would be relatively clear. Textile chemistry can be quite well defined within fairly narrow limits, but the opposite appears true of home economics. That this is the case was well demonstrated at the 11th Lake Placid Conference last October. The question that consistently arose was "what is a home economist?" Some felt that a home economist should be general and be "all things to all people", while others favored specialization. Mercedes Bates, Vice President of General Foods, gave what was probably the only meaningful definition at the Conference. She said that the strength of home economists lies in the fact that they have both the skills and the theory, and are therefore useful to a potential employer. Among the many attempts to define home economics, the speaker prefers the following:

"Home Economics is the Application of Basic Principles from Different Disciplines to Better the Quality of Life."

Dr. Geitel Winakor was the dinner speaker last night, and this speaker agrees with just about everything she said. Our research effort must be directed to developing principles that have wide application, rather than attempting to solve an individual problem. Too much research in the colleges of home economics falls into the latter category, and much tends to be Mickey Mouse (maybe Minnie Mouse is a more explicit term) research. This is partly due to lack of research expertise of faculty and partly due to lack of time because of necessary teaching loads. Some also feel that lack of funds is a big factor, but this view is not shared by the speaker. He feels that some of the very best research, especially basic research, can be accomplished with a minimum of funding. After all, there is a plethora of expensive equipment on most campuses and home economics researchers should be able to use such facilities. This can often be done with the full cooperation, in the research project, of other departments on campus. Departments of Chemistry, in particular, will usually give help, advice, and cooperation to home economics researchers.

Using the above definition of home economics, it may be possible to develop a concept for the place of textile chemistry in home economics research. If our function is to improve the quality of life, then our work on textiles or clothing becomes clearer. Improving the quality of life can involve both the materialistic aspects and the human aspects. In the former, home economics research can be directed
towards the improvements of fibers, fabrics, and textile products including apparel. This may involve the chemistry and physics of fibers and fiber systems, and it is obvious that textile finishes play a major role in this regard. Most of the work should be involved with consumer properties, or other properties which affect consumer properties. Much work needs to be done, especially on soiling and soil removal, moisture regain (so important for hot weather comfort), flammability, electrostatic propensity (mainly in dry climates), crease resistance, and color. Not only are the fiber properties and fabric properties important, but often of equal or greater importance is the structure or design of the end product. In this regard, the flammability, comfort, crease resistance, and soiling properties are all very dependent on the structure and design of the product, or clothing ensemble.

Regarding the human aspects of textiles, it may appear that there is less work, involving textile chemistry, to be done in this area than in the materialistic area. This is probably true, but there are some aspects well worthy of investigation. These can include consumer acceptance of products that have been exposed to varying degrees of chemical or physical degradation e.g. bleaching, abrasion, perspiration, or fading. Another example is visibility in smoky atmospheres produced by burning fabrics and the toxicity of such atmospheres.

Dr. Winakor asked why the program tended to be more discussions on research than presentation of research reports. The second part of this presentation will be a report on a simple research technique which demonstrates many of the views expressed above.

Many consumer properties depend on the surface properties of fibers to a much greater extent than they do on the inside of the fiber. Such properties include soiling and soil removal, electrostatic propensity, transfer of water, transmission of water vapor through fabrics (so important for hot weather comfort), and hand or feel of fabrics. Therefore, if some property could easily be measured, that is much more dependent on the surface than on the body of the fiber, it would be an extremely useful tool for following changes on the fiber surface.

Such a property is torsional rigidity, and a simple method of measuring the torsional rigidity of fibers will be described, together with its usefulness for continuously monitoring rates of reaction of fibers in a solution. The classical method of measuring the torsional rigidity of a fiber is to suspend a bar at the end of the fiber and measure its period of oscillation from the following:

$$ T = \frac{8n^3 IL}{t^2} \quad \ldots \ldots \ldots (1) $$

Where \( T \) is the torsional rigidity of the fiber, \( I \) is the movement of inertia of the rod about the fiber axis, \( L \) is the fiber length, and \( t \) is the period of oscillation of the bar.
Using this method, the bar has to be of reasonable weight, or the fiber curls instead of being taut. This makes the periods of oscillation relatively long. However, if a large mass is supported at the lower end of the fiber and a bar, of movement of inertia much less than that of the mass, is attached to the fiber, the torsional rigidity of the fiber can be determined. The torsional rigidity of a fiber is independent of the tension in the fiber, provided the fiber is not stretched. Therefore, the weight of the mass, attached to the lower end of the fiber, is not critical.

By using bars of different moment of inertia on the fiber, the periods of oscillation can be varied over a wide range. For oscillations too fast for the eye to follow, an oscilloscope may be used to "freeze" the vibrating bar and hence measure its period of oscillation. The measurement of such rapid oscillations is very important in the study of the relaxation of fibers which, in turn, is important for several consumer properties including recovery from stretch or other deformation.

If the bar is attached at a distance \( \ell \) from one end of the fiber of length \( L \), it is acted on by a fiber of length \( \ell \) and by a fiber of length \( L-\ell \). It can be assumed that fiber length \( \ell \) acts on part of the bar, and fiber length \( L-\ell \) acts on the remainder of the bar. However, the periods of oscillation of both parts of the bar must necessarily be the same. From equation 1, for torsional rigidity, the following can be derived:

\[
\frac{t_{\ell}^2}{t_L^2} = \frac{\ell}{L} - \frac{\ell^2}{L^2} \quad \ldots \ldots \quad 2
\]

where \( t_{\ell} \) is the period of oscillation of the bar at distance \( \ell \) from one end of the fiber length \( L \) (actually measured as described above) and \( T_L \) is the theoretical period of oscillation of the same bar supported at the end of fiber \( L \). Given \( t_{\ell} \) (observed), \( \ell \) and \( L \), \( t_L \) can be calculated. Plotting of

\[
\frac{t_{\ell}}{t_L} \quad \text{or} \quad \frac{t_{\ell}^2}{t_L^2} \quad \text{against} \quad \frac{\ell}{L}
\]

gives either a circle or a parabola. Experiments carried out by attaching bars at different positions on fibers (varying \( \ell \)), showed that the points obtained fitted closely on the theoretical curves for the following fibers: glass, nylon, polyester, polyethylene, polypropylene, and wool.

By immersing that part of the fiber just below the bar in a solution as shown, the period of oscillation of the bar can be monitored. From the resulting changes in torsional rigidity of the fiber, the rate of reaction of the fiber with the solution can be determined.
Such changes are especially sensitive to reaction at the fiber surface. Hence, a very simple non-destructive method is available to measure rates of reaction, or effects, of a wide range of reagents with fibers.

In addition to its use for rates of reaction in solution, the method may be used to study effects of gases or vapors on fibers. This may be especially useful and sensitive if agents cross-link the molecules at the fiber surface. Another use of the method is to study effects of temperature on fibers and determine such important properties as the glass point (second order transition temperature). By plotting temperature against $L^2$, a sudden change of slope is obtained at the glass point. The glass point is the temperature at which small sections of the long chain molecules start to rotate instead of just vibrating. At this point, the polymer enters the "rubber state" and, from there, the slow softening or melting are just a matter of rotation of larger and larger sections of the molecular chains. The speaker has used the method successfully for each of the above types of study.

The above may be a good example of a simple, cheap, sensitive device to follow a wide range of principles which are applicable to many textile properties, and consumer properties in particular.
ANALYSIS AND DESIGN AS A CONCEPTUAL BASIS FOR TEACHING TEXTILES AND CLOTHING

Dr. Robert F. Johnson, University of Minnesota

The society in which we live has undergone major changes since 1940. Clearly, the American economic system has been subjected to a strong shift. This has had serious consequences for the consumer.

Consumer sovereignty has been overthrown and the control of consumers over government has lost the efficiency it once had. Government bureaucracy has come under the domination of organized interests, principally business and industry. Galbraith analyzes this in terms of the formidable power of a relatively small number of large corporations, i.e., the planning system, and a corresponding decrease in the market system. This, he suggests, is responsible for numerous social, political, and economic problems.

Product development and advertising have enabled the planning system to control consumer reactions. Major corporations have too big a stake in the products they make to leave sales to chance. This is openly obvious for textile products. The textile product industry has steadily moved into the planning system since 1940, although a comparison to the petroleum industry, an extreme example, shows that there is still a significant market system component in the textile product industry. Nevertheless, the textile product industry which operates in the planning system mode has somewhat successfully used home economists in the handmaiden role to shape consumer reactions. A recent article even indicates the textile product industry is anxious for home economists to gather data on consumer preferences which would obviously used to develop marketing strategies. In fact, there appears to have been voluntary self-exploitation of home economists since such research has become a standard involvement in departments of textiles and clothing. It never appears to have been funded by industry. To the contrary, it is often funded by the people through various governmental channels.

Neo-classical economists still hold that there is nothing better for consumers than more education and information about products and services, which, of course, is to lead to wise decision-making. Home economists have more than a similarity in name to economists in this regard. The textile product industry has long used home economists as purveyors of taddled product information. All this adds up to a conscious or unconscious attempt of the textile product industry to incorporate university departments of textiles and clothing into the planning system.
The planning system has used its concerted power to shape governmental policies. Although there has been significant textile product consumer protective legislation in the last eight years, its implementation has been dominated by the industry. There are only rare evidences that home economists have acted for the textile product consumer to counter this dominance. Rather, home economics involvement appears to have reinforced the activities of the industry.

The diversity and complexity of textile products has increased phenomenally since 1940. Fabrics are no longer primarily from cotton, wool, or rayon, with an occasional appearance of linen and silk. Competitive efforts for new, novel products with their concomitant premium pricing has led to shorter product life spans before replacement. Textile product changes have been generally style-based rather than design-based.* The effect on the consumer of such a high flux or dynamic market with its product and brand proliferation, its inscrutable price-quality relationships, and its hidden and concealed performance potential, is sheer confusion. Surveys for years have documented that the consumer just doesn't know how to cope with the situation.

The planning system has brought us into what might be called the cowboy economy. This is characteristic of over-developed nations and represents the idea that we can foul our campgrounds and move west, that resources are unlimited, that they are to be turned into rubbish as soon as possible, and then replaced. The energy shortage has likely convinced most of us that the cowboy economy must be replaced by a spaceman economy where products are designed for lasting performance and durability, and when they are finished, they will be recycled and used again.

It can be argued that all these imbalances, due largely to the planning system, must be redressed. Particularly, the government must be liberated from the control of the planning system and returned to the people. However, this will only happen when the public awakens, when there comes forth a viable group to represent and advocate for the consumer, and when politicians are elected who are committed to the public interest. Home economists have a terrific opportunity.

Consumer Product Education and Information

Consumer education may be defined as a means of offsetting the superior position of industry by providing the consumer with information.

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*Styling is used here in connection with aesthetic appeal while design relates to functional attributes. Aesthetic appeal in textile products is based on the visual and tactile senses; the consumer is not anatomically equipped to rapidly sense design changes and their validity. It might be argued that textile and clothing programs in home economics have been more associated with fashion-fad-styling than with design, while food and nutrition programs have tended to represent the opposite approach.
or with the ability to gather and process such information. The success of consumer education must depend on its ability to efficiently diminish the expertise gap. While the textile product industry is certainly to be categorized as expert, the diffuse textile product consumer group is not. This is recognized by industry spokesmen, economists, and legal circles. And the gap has only widened over the last twenty-five years. This can be attributed primarily to the increasing product diversity and complexity, the high flux market, and other factors already noted. But secondarily, the widened expertise gap must be attributed to the impotence of the consumer education approach. Industry has the ability to inform consumers at the point of purchase with reliable, accurate information. It has done little of this excepting those instances where compelled, but it has spent millions of the consumers' dollars to create images, etc. Non-industry groups including the educational system, have not been generally successful owing to a different set of reasons, including lack of resources and coordination but perhaps more importantly a non-comprehension of the fact that the consumer has plenty of rights but lacks remedy and protective mechanisms.

Certainly, there have been a few examples where relatively small, isolated groups of consumers had their skills improved. Nicholas Johnson gave the best example when he called Consumer Reports magazine "a Sears Roebuck catalog for intellectuals". Secretary of Commerce Throwbridge said in 1967 before a meeting of the American Retail Federation, "But who among us can make a career out of being the smartest shopper in town?" We at this Meeting are certainly expert in textile consumer products since that is precisely our professional sector, but who here is also equivalently expert in food, housing, automobiles, monetary affairs, etc. An infrequently mentioned difficulty with the consumer education approach is that it makes the consumer a crypto-servant of the economic system.

Thus, programs based on provision of product information, price-value relationships, etc., are an unproven means of effectively offsetting the inferior position of the textile product consumer in the general public and particularly in low-income groups. Supershoppership (or connoisseur-shoppership) to the extent that it is embedded in textile and clothing programs in universities serves only to create a few new textile product supershoppers; it is an elitist approach.

A further difficulty with the consumer education/information approach is that it accepts the status quo. At this point a quotation is helpful -

"Home economics should assume the role of change agent, effecting change, at policy-making levels, that relates to improving the quality of life, rather than simply helping people to adjust to the current condition."

A clear-cut example in textiles and clothing programs is the propagation of the 'principle' that over-the-counter fabrics should be pre-shrunk before sewing-up.
Consumer education might have been a viable concept in the 1930s, but it is in jeopardy today. In universities, to the extent that it is represented by super shoppership, it may soon be consigned to the relic heap of past practice.

**Consumer Intervention and Protection**

Consumer education as defined earlier, i.e., the providing of information or the ability to gather and process such information, does not normally include an intervention component. It does not educate the consumer collectively or individually to effectively bring about public policy change which will affect business and industry.3

Notwithstanding the prior exhortative quotation6 on the role of change agents in home economics, the embodying of such in textiles and clothing and other home economics programs in universities is in its very early infancy. There are increasingly public interest lawyers, accountants for the public interest, and even a Center for Science in the Public Interest and a Public Interest Economics Center which work for the defenseless and unorganized.7 Home economists do not yet seem to have been identified in this way.

It is imperative that professors of textiles and clothing in state universities re-examine their activities in terms of a basic patron - the people. The welfare of the state is normally one of the primary purposes for which state universities, particularly land grant universities, exist. It was reason not only for their establishment, but is reason also for their continued funding by the people. As problems of society proliferate, it is only natural that there be questions as to the universities' activities, such as -

a) What good is social knowledge in universities if it is not used to shape social policy?8

b) Have professors been too often the unquestioning servants of the privileged class and business rather than advocates for broader public interests such as health, safety, equal justice, etc.?7

c) Is the 'walking encyclopedia' type student a tenable goal in this information explosion era?

d) Is the trading of grades and certificates for the absorption of knowledge the be all and end all of student-faculty intercourse?

e) What fraction of time goes to improve the condition and quality of life for the majority of citizens who don't have much money or culture?8

f) When will university professors break away from the modern monastic model in which specialists are left to do "whatever they wish for a lifetime and be fed, housed, clothed, and cared for 'til death, provided they take the vow" to devote their lives "to finding the truth about 'something' that
will not be offensive to those in power or disturbing to the status quo)?

**How long will university professors continue to hide in the safe sanctuary of making statistical, mathematical, and scientific treatments of problems and leaving them on the shelf to gather dust when completed?**

Universities are in theory the knowledge organ of the people, while the legislative and executive branches of government are the power organs. A gulf exists between these knowledge and power organs. The knowledge of the one is sequestered and unavailable or unsuitable for the other, as the power to shape policy of the one is unused by the other. Getting the knowledge and power organs together for the service of the people not only must happen, it is the mechanism by which home economics, having always had the people at least as its implicit patron, can make its relationship to the people very openly obvious, explicit, and comprehended. If one does even a rough cost-benefit analysis, consumer education/information is no competitor against intervention and regulation for consumer protection.

**Identification, Analysis, Design, and Intervention**

At the University of Minnesota, one hears of identification, analysis, design, and intervention as the components of an approach termed "activism based on expertise". Indicated here are (a) the identification and analysis of broad-scale problems of the textile product consumer group, (b) the design of solutions and (c) the collaboration with public policy agencies on the application of these solutions to yield a collective benefit for the whole textile product consumer group via regulation, etc.

Since the patron of this program is very explicitly diffuse textile product consumer group, problems tend to fall into two categories at this time, viz., hazard and deception. Galbraith proposes that "much innovation in consumer (products) is felt to be fraudulent. It is taken for granted that many much-heralded inventions will have as their most striking feature that they do not work or (that) they will prove hazardous." The activism + expertise approach tackles head-on what some refer to as dead body consumerism, i.e., industry's allowing the bodies to pile up while waiting for government decree to practice available technology.

A curious turn is now taking shape. For the last five years we have been deluged with predictions that flame-retardant apparel was going to cause the demise of the industry. But by April 1974, the American Apparel Manufacturers Association was leading a campaign for all clothing to be flame-retardant by 1979, pointing out "the beneficial experience that industry has enjoyed with the present federal sleepwear standards, compliance with which proved a positive asset to sales" and hinting that this could be likened to the durable press boon to industry of the 1960s in regard to sales and profits. This is an area crying for analysis, design, and intervention.
Necessarily, this type of program takes on a definite adversarial role vis-à-vis industry. This cannot cause undue pressure from industry, since the textile product industry has never materially supported textile and clothing programs in colleges of home economics. A definite advantage is that it removes any trace of education oriented toward a producing role which may have at times obscured educational orientation toward the consumer's role.

Deceptive and fraudulent practices are centered around labeling and implied as well as express warranties. This area is not so dramatic as hazard but is much more frequent and almost certainly contributes more to the national economic loss than textile product injuries.

Analysis refers to the application of measurement techniques (metrology) to unambiguously define the problem and to provide working hypotheses for the design of solutions. Economic, mechanical, physical, and chemical metrology are useful in this type of analysis. The analytical level ranges from simple to complex, but must not be sophisticated for sophistication's sake.

The design of solutions is generally not to be confused with new product design or product redesign as practiced in industry. Sometimes, however, product design must be considered in order to design standards and specifications for public agencies. The goal here is to reduce the profitability of faulty designed products to such a level that the producer will have a real incentive to market products which are fit for the use intended. Thus, convergence is found with a very new field, human factors engineering, which perhaps mistakenly is said to be the only field "whose academic orientation and job philosophy are directed toward the user of a product or service."

However, we are doing outright product design in one current project which involves 'quick-release' clothing. Other examples of the application of this approach are:

a) In connection with TexC 5622 (Issues and Trends in Textile Consumer Protection) more than 200 students have completed effective complaint projects, each differing from the others, and primarily dealing with a large variety of deceptive practices connected with textile consumer products.

b) In connection with TexC 5626 (Recycling Processes) analysis of problem areas in detergent products, design of solutions, and intervention with the Federal Trade Commission.

c) An extensive application to the Federal Trade Commission's Trade Regulation Rule on Care Labeling of Wearing Apparel during its first stage.

d) A very extensive application to camping tents and sleeping bags in regard to the flammability hazard with intervention at the Consumer Product Safety Commission, and the Minnesota, Massachusetts, New York, and California legislatures.
Extensive coursework in the mechanical, physical, and chemical properties of textiles and clothing and the corresponding metrology form a considerable portion of the expertise identified in the name of the approach. The motivation of this coursework is not to create supershoppers, nor is it oriented toward textile product innovation, development, or production.

Student acceptance of the activism + expertise approach has been generally enthusiastic. The real problems, the analytical and normative challenge, and maybe even the controversy are appealing. The approach builds self-confidence and perceptual capacity.

It is emphasized that it is not proposed that consumer education has to disappear. Perhaps when coupled with activism + expertise, the two can complement each other and maybe even synergistically.

For those conferees who feel the need to get home economics into the arena, many of these things need not have been said. I have attempted to sharpen the issues, and to indicate one approach. Application of such tactics in only several departments across the country could yield results all out of proportion to the effort.

References


DRESS, SOCIETY, AND CHANGE

Dr. Mary Ellen Roach, University of Wisconsin-Madison

Introduction

In December, 1969, just before the young women at the University of Wisconsin had publicly manifested any of the symptoms that later would readily identify them with the women's movement, I asked a class of women students to discuss in the examination papers they were writing: "The changing social symbolism of women's dress during the twentieth century." Afterwards, as I began to read their papers, I was first astonished, then both regretful and grateful. Regretful for my failure, as a professor, to prepare the students for handling the topic I had given them; grateful that I was learning something from the reactions they made to my question—for reactions I received, practically no discussion. Apparently, two things had happened: first, neither their readings nor their class discussions had provided them with the conceptual background and data needed for developing a discussion on the topic I had given them; second, I had unwittingly tapped the suppressed resentments toward society of a group of young women ready for participation in the women's movement, but not yet activated.

My question, really a projective technique, as it turned out, provoked responses that were in some ways not clear, in other ways loaded with meaning. In one of the first papers I looked at, I read that the emancipation of women occurred in 1906. I have no idea what the student had in mind when she made this statement. However, her message certainly aroused my curiosity concerning what I would find in other students' papers. In a sample of their statements, which I will share with you, you can glimpse what they were inadvertently expressing—their frustrations and their groping for ways to relieve their feelings of frustration. According to my students:

"The no-underwear look has freed women from physical restraints and has put her on equal footing with men."

"The pants suit can be used as an example of our (women's) desire and ability to do any man's job."

"This trend toward women wearing pants more often would indicate that women wish to take over more of man's role. Woman now has left her happy home in full pursuit of demeaning the superiority of her husband by endeavoring to support the family."
"The great variety and extremes of women's clothing today reflect the desired freedom and social equality so many women desire."

One young woman wrote, in reference to pants, "Women, however, are more feminine than ever," revealing, I thought, a wistful sense of uncertainty, despite her defensive stance.

So I saw my error in giving students a discussion topic, which they, through no fault of their own, were unprepared to handle, and recognized, as never before, that scholarly performance, whether by students writing an exam, a professor working on a textbook, a researcher preparing a journal article, or a group of college professors of textiles and clothing discussing topics at a national meeting, must be based on: clear conceptualization of the field of study being considered; a sound background in the literature available, including the historical; and a working knowledge of a set of concepts that can be used in making an analysis of the topic being discussed. The scope of the topic I chose for this conference, "Dress, Society, and Change," immediately placed all these requirements upon me in an overwhelming way. And I decided, in retrospect, that I must have mistakenly thought that I was choosing a subject for a twelve volume work to be completed in or about the year 2000!

**Conceptualization**

Fortunately, all of us have colleagues available to aid and support us, even if they may not know it. Compton and Hall¹ provided me with a general conceptual perspective from which to proceed, as a matter of fact, with a perspective from which any topic in the textiles and clothing field may be viewed, either a broad one like the whole field of textiles and clothing itself or a specific one stated as "Dress, Society, and Change." Their identification of the concerns of Home Economics--from the perspective of human ecology--as the relationships between human beings and their near environment in a rapidly changing world also clearly identifies the concerns of scholars concerned with textiles and clothing, and reminds us that the near environment includes housing, home furnishings, household equipment, food, and family members as well as textiles and clothing. All of these elements interact with each other within the micro-environment provided by the family, which, therefore, has an inner dynamics of its own; however, they are also in dynamic relationship with the biological, physical, social, and cultural macro-environments or systems within which the family, as micro-environment, exists.

Initial orientation to the consideration of the topic "Dress, Society, and Change," then, requires understanding of dress as an element of the near environment of individuals as well as an element within the complex dynamic macro-environments of human existence. Once we comprehend the complexities of existence in a number of environmental systems, we also recognize that change in one system is likely to cause reverberations, hence change, in other systems. The topic I have chosen allows me to elaborate in a small way upon how
change can breed change and how historical background on change can be useful in teaching and research. I will do this using as my major analytical concepts, dress, technology, social structure, social role, society, and change. My working hypotheses are (1) that in the last two centuries changes in role expectations and social structure in the United States have accompanied changes in technology and (2) that changes in form of dress have accompanied changes in role expectations, social structure, and technology.

I will define the concepts I intend to use in the belief that the formulation of definitions in social science areas is a necessity, rather than a luxury indulged in by the academic in order to revel in the sound of his or her own words. Although you may not agree with my definitions, you will at least have a chance to understand the directions through which my thought processes lead me.

Definitions of Concepts

Technology: The knowledge of how to produce something to take care of a human need or to accommodate to some human desire.

Dress: Modifications human beings make in their appearance. Its form depends on technology available.

Social structure: A pattern of interconnected social positions.

Social roles: The behaviors expected of individuals occupying various positions within the social structure. These expectations are for both actions and qualities that occupants of a role should exhibit.

Society: A group of interacting individuals sharing a common culture (way of life) and acting out social roles within the social structure according to the cultural patterns shared by the group.

Change (Cultural): Alterations in cultural forms, that is, in the part of environment made by human beings. Included are alterations in patterns of social structure, social roles, form of dress, and technology.

The Technological Revolution in America and Changes in Social Structure and Social Roles

No one can set an exact time or place to mark the beginning of the technological revolution; however, it was well under way in England by the mid-1700's. In the United States industrialization, utilizing contributions of the technological revolution, began on a small scale very late in the 1700's, at first in New England in the manufacture of textiles and a few other commodities. The agricultural South, organized from an early time on a modified manorial system with slave labor, long resisted industrialization.

Large scale industrialization in the United States followed the Civil War. After that time, technological inventions proliferated as
did factories and other types of business. Many independent businessmen operated small factories and retail establishments. Developments in transportation, both in steamships and the railway, encouraged new jobs in trade and transportation as exchange of goods through great distance made country-wide markets and marketing systems possible. As many types of blue collar and white collar jobs became available in business and industry, smaller proportions of workers were in agricultural pursuits in America. Late in the century, and early in the twentieth century, small retail establishments and small factories operated by independent businessmen began to give way to a number of complex large-scale corporations. The large corporations seemed fitted for coping with the new technologies: they could better afford, than the lone businessman, the expense of the machinery needed to utilize a new and more productive technology; they could gather together more capital to work with than one person, or a few people, could; and they could bear greater financial risks. The development of corporations generated yet more demand for white collar workers (office workers) since the successful operation of the large-scale corporation also depended upon a large-scale bureaucracy.

In summary, by the end of the nineteenth century, utilization of new technologies had clearly had an effect on life in America. It had made great changes in the occupational structure and had forced many American people to settle in urban areas in order to have access to their places of work: in factories; wholesale, retail, and service establishments; in financial institutions; and in governmental offices. The changes in the occupational structure had touched men more deeply than women. Women, engaged in child bearing and rearing, and required to do much hand labor in caring for the home, preparing food and making clothing and household items, and under the pressures of social values concerned with women's place—for both practical reasons and reasons of sentiment—did not ordinarily work outside the home.

Thus, the technological revolution of the nineteenth century tinkered with traditional roles for men more than it did with traditional roles for women. It pulled men away from farming, hand crafts, and small businesses and sent them into the factory and jobs with transportation and the large bureaucratically organized offices associated with corporations, financial concerns, and government. We can imagine that moves to urban centers and new jobs were sometimes quite traumatic for families used to the relative family closeness provided by the agricultural way of life and for family roles, if, for example, as was true in the steel industry, men sometimes worked 12 hours a day, 7 days a week.

Illustration: Women

An examination of the nature of women's roles during the period between 1890 and 1910 illustrates how technology was beginning to effect role expectations for them by this time: expectations for both actions and qualities, including qualities of dress and appearance.

The dominant and preferred role for the adult woman was that of wife, homemaker, and mother. Her ability to bear children remained a
valuable asset as long as many hands were helpful in providing for family needs. Since she had responsibilities for caring for family and home, discretionary time that could be allotted to regular work outside the home was generally not available to the married woman. Home tasks for the woman were generally time consuming. Water might have to be carried from the well and carried back outside for disposal after dishes were washed, or other cleaning was done. The kitchen stove required constant attention in order to keep fires going for cooking, and sometimes heating. Coal or wood must be brought in for use. The reservoir on the side had to be filled to keep available a supply of warm water for washing and bathing. A pitcher pump was a step saver; but a real step forward was a sink with faucets producing both hot and cold running water and with a drain for removing waste water. The sewing machine, which revolutionized the production of clothing, was one of the first products of the technological revolution to greatly affect homemaking routines, and was a treasured adjunct to often austere life in nineteenth century rural America. If leisure time were available, genteel recreation available for women included afternoons of sewing together, and other quiet entertainment. Horseback riding was an allowed activity, but the female who rode a horse was advised against a modern fad to ride astride, since according to social arbiters of the time the woman's body was not so constructed that she would look her most attractive when astride.4

By 1900 40 percent of the people in the United States lived in urban areas in order to be close to the kinds of work the technological revolution generated. In general, however, work outside the home for the adult woman was a contingency for only the unmarried, the widowed, and the poor. And most of the women who worked were engaged in activities that were similar to those done in the home, or extensions thereof. Women were, therefore, best prepared for jobs as domestic workers in homes, and similar work in hotels, restaurants, laundries, and rooming houses (that took in school teachers and other single men and women). Since the United States was still more than 50 percent agricultural in residence, women also worked as hired hands, for example, in berry picking or other harvesting. Some operated farms. Teaching school and being a nurse were occupations that required more skills than domestic service or farm labor, but were in general still extension of "womanly skills."

By the late 1900's the new technologies, which had brought many new occupations to men during the nineteenth century, were also bringing new kinds of occupations to women who were forced to work. The typewriter marked the entrance of women into the office. And for her office work she preempted a costume that seemed to match to some degree the male office worker's somber suit and white collared shirt: she wore a shirtwaist and skirt--sometimes a man's necktie and straw hat. In addition to being a typist or stenographer, she could also be a bookkeeper, although not nearly as often as a man could. The invention of the telephone brought another occupation to women, that of switchboard operator. Clerking in dry goods stores, which helped distribute the products of the expanding nineteenth century industries, was work available to women; and occasionally, a woman might be an entrepreneur by setting up her own business, such as a millinery shop.
Women also went to work in manufacturing, as did children and men. They worked in textile factories that flourished in New England. In the dressmaking industries, they were the major labor force. Sometimes they were placed in metal industries with special tasks, such as polishing aluminum.

By 1900, then, about 5 million women were in the labor force, representing 18 percent of the total labor force of over 114 million. Eighteen percent of the 5 million were in agricultural pursuits as laborers or operators; 8 percent were in professional service mostly as school teachers and music teachers. Thirty-nine percent were in domestic and personal service, mainly as lodging housekeepers, laundresses, nurses and midwives, servants, and waitresses. Ten percent were in trade and industry as bookkeepers, saleswomen, typists, and as telephone operators. The 25 percent in manufacturing were mostly in trades like dressmaking, tailoring, and book binding.

Census data for the 1970's show changes that have taken place in the work of women in the twentieth century. The number of women in the labor force has grown from five million in 1900 to 31 million, or 38 percent of the labor force. Only 2 percent of females in the labor force are farm workers and 15 percent blue collar workers. A fairly large proportion, 22 percent, continue to be service workers. The largest shift is to white collar jobs of various kinds: 60 percent of women in the work force are in this occupational category.

Although consideration of the period from 1890 to 1910 shows that the technological revolution was tinkering with women by this time, a housewife in 1900 could still feel she had social and economic value (1) because of the great amount of work she did around the home; and (2) because bearing and caring for children was highly valued. But technology of the twentieth century has dealt the valued homemaker role at least a quadruple blow. First of all mechanized helps in the care of the home—electric and gas stoves, washing machines and dryers, vacuum cleaners, dishwashers—all have reduced the load of physical labor for the homemaker. Secondly, by taking over many of the productive activities of food preparation, clothing manufacture, and aspects of decorating the home, industry has simply replaced her once valued activities in these areas. She no longer is required to make many economic contributions through her care and production activities in the home; her major role in the home has become largely managerial. In addition, as medical technology and technology of sanitation have added years to people's lives, the possibility of overpopulation looms as a threat and the value of producing and rearing children is being questioned. Lastly, a technology that makes births controllable and predictable enhances a woman's usefulness within the work force—really makes a woman available for the labor force.

Applications

Historical analysis of occupational and other role shifts accompanying the technological revolution of the nineteenth and twentieth centuries and the application of concepts and perspectives drawn from
role theory are useful in both teaching and research related to the general topic of "Dress, Society, and Change."

In Teaching

One obvious place for use in teaching is in history of costume, for history of costume is not just an interesting pictorial tour of changing forms of dress. It is part of the study of the decorative arts; but it is also analysis of changing technologies, production systems, retailing systems, social structures, social roles, and ideologies. Approached from this broad perspective, it has a great deal of socio-cultural as well as psychological significance. And best of all, it helps a great deal in understanding present forms of dress.

Visuals, such as slides, can enhance the presentation of historical background in teaching by providing additional support for the kind of working hypotheses I have proposed. For example, they may provide graphic evidence that, as I have hypothesized, new roles and hence changing role expectations, have accompanied changing technology in the nineteenth and twentieth centuries. They may also illustrate, again as I hypothesized, that form of dress in the last two centuries has followed the dictates of new technologies. For example, they can show the extensive use by women at the turn of the century of shirtwaists and skirts, types of designs standardized enough for manufacture by factory methods. This use of shirtwaists and skirts also appears to support the hypothesis that changes in form of dress were accompanying changes in role expectations within new kinds of social structures, especially new occupational systems. At least, used in somewhat standardized outfits, they seemed to clothe young working women in expectations for standardized behaviors that would allow them to blend in as inconspicuous, functional parts of the office.

In Research

In some of our research at Wisconsin we have followed up leads provided by historical study and used concepts from role theory as a basis for casting hypotheses about clothing and appearance as part of the qualitative components of social roles. In examining some of our descriptive data, which can be interpreted in only a broad way, we have found that appearance and dress are important considerations when women are asked to describe the ideal man and when men are asked to describe the ideal woman. According to our female subjects, a man should be first of all, kind and considerate. Secondly, he should have a pleasing personality and third he should be attractive in appearance. Male subjects placed kindness and considerateness as most important characteristics for women, too. Appearance of women, however, was equally as important as personality; and intelligence rated almost as high. Fourth in importance for men was their being good providers; no such demands were placed on women by men.

In analysis of harder data we have had available, we have found that husband and wife couples generally agree on what role actions for
wives should be and on what appearance should be. About half of the couples we studied had expectations for appearance that clearly differentiated men from women, the other half did not. And to our surprise those who agreed on differentiated types of role actions for husbands and wives (traditional homemaker and breadwinner concepts), rather than more egalitarian (similar) types of role actions, were not necessarily those who thought men's and women's appearance should be differentiated.

Conclusions

In summary, if we are going to understand dress, society, and change, we must (1) perceive dress as an element of the near environment that impinges on human behavior; (2) comprehend that dress is a functional part of the complex, dynamic world environment in which we live; (3) be able to use some kind of systematic analytical schemes that will help us interpret how cultural factors relate to changes in form of dress, also its functions and meanings; and (4) ideally, eventually accumulate longitudinal research data that will provide more information than the enlightened hindsight currently available to us.

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CLOTHING BEHAVIOR . . . PERSONALITY . . . MEN AND WOMEN

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In a world which is becoming more and more automated and impersonal, there seems to be a need to understand people, individually and collectively. An awareness of the relationship between clothing, a very visual form of behavior, and the behavioral sciences, may aid in this understanding.

RATIONALE FOR THE STUDY:

In the past most clothing behavior studies have been concerned with men or women, but few have looked at the similarities and differences between the sexes. Throughout history the male has often been very concerned with his clothing and appearance. He has been more vivid and at least as vain about his dress as woman has been. This past century, the fashion dominance has turned to the woman, and man has been quick to laugh at her "slavery to fashion," without realizing that his own conformity to social code has surpassed the so-called "slavery" of woman. Fashion has now found a new freedom, particularly among the men. Man is not becoming more feminine, but an interest in fashion is again becoming acceptable.

In most societies, no matter how primitive nor how advanced, sex roles are emphasized by defining appropriate dress for men and women. These roles, however, may be different or completely the opposite from one culture to another.

We are now witnessing a convergence of clothing styles for men and women at a time when there is also a growing convergence of sex roles. Nevitt Sanford, director of the Institute for the Study of Human Problems at Stanford University, stated, "we are clearly approaching a time when there will be no kinds of valuable work that cannot be performed as well by one sex as by another." [As quoted from The Sexual Wilderness; The Contemporary Upheaval in Male-Female Relationships, by Vance Packard, 1968. Page 105.] Men and women are sharing responsibilities in and out of the home; and with increased leisure time, leisure dress for men and women is becoming more alike in design and color.

Changing sex-role and clothing behavior is certainly not limited to the West. Japan is also experiencing great changes, often difficult changes. This is a nation in which sex-roles and manner of dress are both becoming more "Westernized." In centuries past, Japan had been very much a patriarchal society - Japanese women did not receive the right to vote until the New Constitution in 1946. Though women are "equal" according to the Constitution, and they have quickly entered the labor force, the emancipation of Japanese women is still progressing slowly.
Greater changes have taken place in their clothing standards. From the ancient times, Japan has had a long-standing tradition of transvestism - court nobles considered themselves best dressed when they most closely resembled women. This did not change until the 19th century when they became self-conscious about their attire. However, the traditional kimono is still basically the same garment for both men and women.

In the 1880's, Western dress became a requirement for the students. Businessmen, doctors, teachers, and other professional people turned to the Western suit, a symbol of prestige. Today the traditional garment is the exception rather than the rule.

PURPOSE FOR THE STUDY:

This particular study was undertaken for the purpose of investigating the relationships between clothing behavior and:

- sex
- feminine or masculine personality types
- sex-role concepts
- Japanese and American cultures

The aspects of clothing behavior studied included interest in, tolerance, acceptance and innovation (T-A-I) of uni-sex clothing items; and the femininity-masculinity ratings of these items.

DEVELOPMENT OF THE INSTRUMENTS:

Part I: Background information, description of the sample

- Fe scale of personality from the California Psychological Inventory (CPI), designed to assess femininity-masculinity of temperament and interests. Scores indicate the degree to which an individual's responses are in agreement with those most characteristic of men and women in our contemporary culture.

- Measure of sex-role concept, to assess one's degree of restrictiveness. The subjects were to indicate which occupations they felt a woman should never have, selecting from a list of 17. This was adapted from an instrument developed by Dr. Helenan Lewis at Western Michigan University.

The last three parts are in response to 15 line drawings of uni-sex clothing items - clothing which may be worn by both men and women, bi-sexual clothing. Line drawings were chosen so that the subject would not be influenced by color, fabric design, or the model. Ideas for the garments were taken from current men's and women's fashion magazines.

Part II: Measure of tolerance, acceptance and innovation (T-A-I) of uni-sex clothing items. A question was developed for each of the three attitudes being measured.
Part I: Background information, Fe scale of personality, and the measure of sex-role concept.

Part II: Measure of tolerance, acceptance and innovation. The subjects viewed the 15 uni-sex clothing items, giving fairly rapid, initial responses for each item viewed. They were to respond to the line drawings, assuming that they could wear the item and could afford to purchase it if desired.

Part III: Measure of interest.

Part IV: Femininity-masculinity (F-M) rating scale of the clothing items (viewed for a second time).
STATISTICAL ANALYSES:

Included the use of:

- Two-tailed t-test as a measure of difference between means of independent variables (level of significance = .05 or less)
- Simple correlations between variables
- Frequency distribution and means for the various responses

FINDINGS:

1. Men and Women: Significant differences indicated in interest in, tolerance acceptance and innovation of uni-sex clothing. Women showed a greater interest in, and T-A-I of such items.

   Significant differences were also indicated in the femininity-masculinity rating of the accepted clothing items. Women rated the items more feminine than the men.

2. Japanese and American: No significant differences were indicated in any of the aspects of clothing behavior studied, however, differences were noted between Japanese and Americans in their sex-role concept scores. Though the Japanese may be Westernized in their clothing attitudes, they tend toward a more traditional sex-role concept.

3. Feminine-Masculine Personality: The only relationship was with an individual's ratings of accepted uni-sex clothing items - a more feminine rating of items by those with a higher or more feminine personality score. No relationship was indicated between personality and interest in, and T-A-I of such items.

4. Sex-role Concept: Significant differences indicated in interest and T-A-I. Greater interest and T-A-I were indicated by those with a less restrictive sex-role concept - those with less restrictive clothing attitudes had less restrictive sex-role concepts as well.

CONCLUSIONS:

Concern with clothing and appearance has been said to be becoming sexless, however, the results of this study indicate that the sexes still do differ in the particular clothing attitudes studied.
As might be expected, the women rated the items which they accepted more feminine than the men rated the items they accepted. However, the great majority of the over-all ratings for the 15 items were toward the feminine side of the scale, even though the majority of the design ideas were selected from men's fashion magazines. It appears that, as in the women's fashion industry, the full effects of the changes proposed in the men's fashion world have not yet been accepted by the particular sample used in the study.

Comparisons between Japanese and Americans did not reveal significant differences in clothing behavior for any of the aspects measured by this study. Influence from television, movies, magazines and increased travel and trade, may have had somewhat of a neutralizing effect on the differences between the two cultures which were compared.

It should also be noted that the Japanese student studying in America generally has a higher level of education and comes from a family having a higher socio-economic level than the "average" Japanese. As indicated by the background information, the majority were raised in large cities and have fathers and/or mothers who are in one of the first two occupational divisions established by the United States Bureau of Census. A difference might have been found if the Japanese had been students in Japan rather than in America.

It is hoped that this study has helped, at least a little, in our understanding of people - their personalities, attitudes, cultures and consequent clothing behavior. And, that further research may be inspired by these results.
THERAPY OF ATTRACTIVENESS: SHARING CONCEPTS AND EXPERIENCES WITH COMMUNITY AGENCIES

Dr. Lillian B. Matthews,
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A year ago, I had the opportunity to offer a workshop entitled Therapy of Attractiveness. The premise on which the program was based was that our bodies and physical features, our choice of clothing and accessories, and our personalities are interrelated and an expression of the way we feel about ourselves.

Researchers in clothing and in psychology have published enough similar findings to support high correlations between physical appearance, mode of dress, self esteem, and many social factors. For a long time, I had played with the idea of bringing together the researchers of these findings and those in various social agencies who operate on this same premise when presenting grooming, personal development, and clothing programs as a tool for therapy and rehabilitation. The social agencies who offer these programs are correctional institutions for adults and adolescents, community mental health and state hospitals, family service programs, child care centers, and various levels of formal and informal education.

Thus, several thousand program announcements were mailed to the following within the Chicago and surrounding areas: Mental Health Centers and State Hospitals, Guidance Centers, Community Services for Vocational Rehabilitation, Retarded Children, Psychiatric Clinics, Opportunity and Half Way Houses, Youth Counselors, Boys Clubs, Youth Centers, Criminal Justice Agencies, Law Enforcement Agencies, State Reformatories for Adolescents and Women, and the Cook County Jail. Invitations were also distributed to Home Economics teachers in Illinois, Wisconsin, Minnesota, and Iowa, to Extension Home Economists in Illinois, and to members of Central Region ACFTC.

The specific objectives of the workshop, therefore, were:

1. to aid professional workers and volunteer leaders attached to the various institutions and social programs to develop and conduct personal development, grooming, and attractiveness programs as a tool for therapy and rehabilitation.

2. to provide opportunity to exchange concepts and experiences.
With these objectives in mind, speakers were invited to discuss such topics as:

Physical Attractiveness: Cues for Self Esteem and Social Interaction.
Self Esteem Through Attractiveness: Correctional Programs.
The Adolescent Dilemma: Appearance vs. Behavior.
Psychiatry and Beauty: Fashion Treatment for the Mentally Ill.
Teaching Personal Development to men, women, and adolescents.

Most of the conceptualization and research developed by those of us in clothing in higher education has been concerned with modes of dress as related to social and personality factors. There is a group of psychologists who have been involved with discovering the effects of physical features considered attractive and non-attractive in social interaction. Dr. Norman Cavior, psychologist, West Virginia University, laid the foundation for the workshop by discussing Physical Attractiveness: Cues for Self Esteem and Social Interaction. Dr. Cavior drew not only from his own research but that of Dr. Ellen Berscheid, University of Minnesota, Dr. Elaine Walster, University of Wisconsin, Dr. Karen Dion, University of Toronto, and others.

This group of psychologists have concentrated their research on physical attractiveness as related to dating patterns, success in marriage, self-esteem, and adult reactions to physical attractiveness of children. Their findings have led them to believe that physical attractiveness is probably more important in social interaction than each of us already believes and that we fight this knowledge because it violates the American concept of democracy that all people are created equal.

Based on findings from their research, the following are a few of their conclusions:

1. The mesomorphic body type is the most culturally preferred. Both children and adults generally agree as to who is attractive and who is not attractive, except when social competition plays a role.

2. Differences in agreement as to who is attractive and non-attractive depends on the degree of attractiveness of the individuals making the judgements.

3. There is a higher correlation between physical attractive ratings by the self and those who do not know the individual than those who do know the individual.

4. Those who are rated high in physical attractiveness are thought of as more responsive and sensitive to others,
more interesting, poised, modest, sensible, to have a better character, to have more prestigious occupations, and to rate higher on managerial and competitive behavior.

5. We tend to consider the more physically attractive person the most popular and better in social relationships. There is evidence that teachers are more apt to blame the unattractive child for misbehavior than the attractive child. There is a higher relationship between physical attractiveness and date selection than between date selection and personality characteristics.

Dr. Cavior attempted to discover if some of these findings based on non-delinquent populations persist in delinquent populations. Within male correctional institutions, he found that the delinquents were generally not as physically attractive as non-delinquents. He divided the inmates into four different levels of attractiveness and found that the more physically attractive men had less problems in jail with the guards, administration, and with other fellow inmates. The less attractive men appeared to have bigger problems and less self esteem which can lead to feelings of rejection, anger, and fighting back at society. It is continually being found that law enforcement officers are more apt to arrest the unattractive than the more attractive delinquent and that the physically attractive may get paroled faster than the low physically attractive. Inmates who had facial surgery resulted in 35% less returns to prison. Thus, by improving the physical features, these men probably changed their self image so that they were able to adjust to society's norms and become more acceptable.

Jo Green, who conducts "Self-Esteem Through Femininity" programs at the Illinois Dwight Reformatory for Women and in the Cook County Jail, has found many of these same phenomenon operating in her relationships with female delinquents and inmates. The Self-Esteem Through Femininity Programs are part of a larger program entitled "Guides for Better Living" which are sponsored by the W. Clement and Jessie Stone Foundation of Chicago and now operating within 120 correctional institutions across the United States. Feminine development instructors are trained in three to four day seminars in Chicago. On returning to their communities, these instructors interest community agencies in these programs and recruit volunteer instructors. It is estimated that the recidivism rate for women who have taken the classes is barely 5%. This is quite a bit lower than 40% - 60% national rate.

"Guides for Better Living" programs are based on the premise that improvement in outer appearance is a necessary step to developing inner resources. As habits are difficult to change, the program works in easy stages to affect change. These stages deal with (1) posture, walking, manicuring and makeup; (2) body dynamics and physical relaxation and development; (3) feminine hygiene and attitudes; and (4) job preparation. Classes are held for two hours on Saturday mornings for 12 weeks with twenty women in each class. The cost of the program is not only supported by the Stone Foundation but by public and private sources. Some commercial companies provide equipment and cosmetics necessary.
Jo Green is a very dynamic person and has a way of convincing women of their need for such change, thus they readily volunteer for classes. Most of the women earnestly try to lose weight, let their fingernails grow, have their hair styled at the beauty school which is organized to train those interested inmates in obtaining a license in beauty culture. The women at Dwight wear attractive combinations of pants, skirts, and blouses which they choose from five or six different available colors. These outfits are manufactured in the small apparel manufacturing plant on the grounds and in which some of the women work. The women are encouraged to individualize these outfits with their own allowable accessories.

As the women in Dwight Reformatory have been sentenced from several months to many years, they settle down and become part of the community. Therefore, there is time for long range goals to be accomplished. However, at the Cook County Jail, women are waiting for sentencing and their stay is only from a few days to a few months. The women here are upset at being in jail, resulting in a much more chaotic atmosphere than at Dwight. The Femininity Programs, therefore, must be reduced to four weeks and it is more difficult to observe the results of the program. Also, it was more difficult to convince the guards at the jail of the importance of the grooming sessions and to get their cooperation. The cosmetics supplied by the commercial companies were given away as prizes for attending all classes. When a large supply of eyelashes were received and help given in how to apply these eyelashes, then it was easier to discuss how to care for the skin, hair, etc.

Many of the practices of grooming, manners, table etiquette, etc. which we consider ordinary and habits, are new to many of these women. Jo Green found that many of them had never worked or applied for a job and the few who did were not successful in acquiring the job; thus they would resort to earning their living on the street, writing false checks, etc. As they role play interviews, the problem arises as to how you explain your past--do you tell the truth or do you make up a story? These women discovered that they needed to be convincing, whichever method they used, and that the way they were dressed and groomed becomes an important factor in how convincing they can be.

In the Cook County Jail, a more immediate problem was the fear of facing the judge or facing the parole board. When going before the judge, many women are convinced that they will get maximum sentences and there isn't much they can do about this. Several of them, with Jo's help, acquired new clothes, had their hair styled, and spruced up their grooming before appearing in front of the judge. One judge remarked to one of these women that she did not appear to be the kind of person who would commit such a criminal act. The jury was influenced by this remark and her sentence was reduced. This supports Dr. Cavior's findings, that those who meet our stereotyped image of attractiveness do receive different responses from others. The girl was surprised that "it worked" and her feelings about herself immediately began to change.

Many of the facilities in jails are not conducive for good grooming practices, but volunteers working with the administration and learning
the language of the institution and the inmates can influence change. The program must be well planned and acceptable to the institution. Volunteers can come from beauty school operators, modeling agencies, various women's organizations, etc. However, these people must be current. Educational materials are available from publishing companies such as Milady in New York.

You are aware of the increased concerns for humanizing the State Hospital's treatment of mental dysfunction over the past ten or more years. Many of the patients from these hospitals have been either discharged to their families or moved to community extended care centers where they are able to make decisions for their own behavior under minimum supervision. In the Elgin State Hospital in Illinois, the residents have been reduced from 7,000 ten years ago to 1,500 today with very little reduction in professional staff. The physical facilities have been renovated so that patients can take care of their own grooming and clothes. For those persons who are able, they can take a trip to town to purchase their own clothing and this decision making results in the feeling that the clothes really belong to them and pride is taken in their upkeep. Mary Karrels reported that a male patient whose clothes were chosen by the hospital aides but paid for from his trust fund, continually tore up his clothes for he felt they were not his. When he was allowed to select his own clothes from the men's store in the town, he ceased this activity. There are many such cases. It appears that part of the therapy is to have these people make as many of their own decisions as possible, for it gives them something to plan for and contemplate on in the future.

Many of the residents in State Hospitals need to relearn homemaking skills. Apparently, more of the institutions have developed homemaking programs where 6 to 8 residents work together under the guidance of an instructor. An integral part of these programs is a course in grooming, clothing selection, care, and construction for those who are interested. When groups of residents go downtown to shop or to eat in a restaurant accompanied by a supervisor, the trip is used as a teaching device in how to dress when shopping, how to purchase various clothing items, how to eat in a restaurant, etc. On their return, they discuss what they saw and what they learned.

The grooming skills are part of the everyday ward program, where maintaining cleanliness, physical attractiveness, and manners are stressed. Long term residents are rewarded in some way when they behave in the expected manner. When these habits are formed, they do not receive stares when on the street, for they do not look "funny." This is all in preparation for moving into sheltered care facilities and, if possible, into their own home environment where they can be more independent.

You probably read the recent article in the Journal of Home Economics by Jean Fleming who is a Home Economist and an instructor at the Dodge County Mental Health Center - Inpatient, Moraine Park Technical Institute and Wisconsin Department of Health and Social Services, Division of Vocational Rehabilitation. In the last five years, Jean has organized and taught classes in "Life Adjustment" in the health center where the primary
objective is the involvement of the patients in a learning experience. These experiences include learning new skills and relearning old skills, such as basic homemaking, personal living (including grooming, apparel selection and care), and the use of community resources. This program is similar to the one I have described at the Elgin State Hospital in Illinois. This approach is what we now call the systems approach, which also includes a humanistic approach to examining a social problem. Hopefully, it results in appropriate action which is beneficial to the individual who is being rehabilitated to society.

At the Atlantic City AHEA annual meeting, Myra Timmons, from Texas Tech University, reported on her community involvement at the sick children's clinic. She studied the total organization, purposes of the clinic, their various activities, and the needs of the children. She discovered that a new source of clothing was needed and involved her students in fulfilling this need.

Carolyn Callis, from the University of Tennessee, also reported at AHEA on the community involvement of her students at a State Psychiatric Hospital. They participated in and conducted an appearance program to help the residents feel better about themselves.

Lynda Schindel, graduate student at Northern Illinois University, completed her study entitled "Systematic Approach to Functional Clothing Design for the Aged." The systematic approach with implications for design, and the nursing home environment provided background information for the specific study of the Elmwood Nursing Home. Clothing is viewed as a three part interaction of body and physiology, fabric and design properties, and the near environment. Garments designed considered these interactions for the following patients: one with joint stiffening of the shoulders and mental confusion; one non-ambulatory patient with extremely cold limbs; and two with partial or no control over eliminating habits and also confined to a wheel chair. This study not only resulted in functional clothing for specific physiological disabilities but they were attractive, giving the patients a sense of dignity in being able to keep themselves modestly covered at all times and to aid in dressing themselves.

These and other studies are very worthwhile projects which resulted in opening up lines of communication between nursing homes, state hospitals, correctional institutions, with various communities. But can we be satisfied with ourselves to channel our service and contribution only through isolated projects and student directed activities? The university's purpose is teaching, research, and service. Is our service to be limited to within the university? Can we, on the residential staff, service communities to a greater extent than we do now?

University faculty of social-psychological aspects of clothing and appearance can instigate interdisciplinary community programs within family service agencies, child care facilities, community mental health agencies, correctional institutions for men, women, and adolescents. We can incorporate findings from our research with those of psychologists and use these in impressing administrators of all community agencies with the important part physical attractiveness and grooming plays in therapy and rehabilitation.
This action could result in aiding professional and volunteer leaders of these agencies with the organization and execution of attractiveness or grooming programs?

There is no limit to the scope of which we can become involved. As Carolyn Callis has reported, the need is great. Is it feasible for administrators in higher education to allot faculty time for community service, as is now done for research activities? These questions and suggestions could be the basis for future consideration at our regional ACPTC meetings.

REFERENCES


In the research process, we select theoretical concepts which we want to test empirically by executing a series of basic research steps. Frequently, as academics, we emphasize the process of and the findings of the research, but in a field like ours, application of the research also is important. Using computer language which is so common today, the findings can be called the output, and use and application can be called the feedback.

My topic today involves a discussion of application (or feedback) and some examples of clothing research output and feedback in which I have participated. Research output may have three kinds of usefulness or feedback: (1) the results can be of interest and value to other researchers and sometimes we refer to this use of research as knowledge for the sake of knowledge; (2) the results can be of value to professional workers and community leaders in public policy; and (3) the results can be of value to the public or layman, and I would include the commercial world in this category. Frequently the distinction is made between the first example of research use (knowledge for the sake of knowledge) and examples two and three as a distinction between basic and applied research. I personally believe this is a false dichotomy, a distinction that is not always possible to make, as sometimes so-called basic research is found to be very useful and have immediate application and sometimes applied research is not found to be useful at all.

I will discuss two major clothing research thrusts of my own in terms of output and feedback. In each case, the major objective of the research was probably knowledge for the sake of knowledge, but the output has been utilized in other ways also.

The two research areas are (1) a longitudinal study of teenage girls' friendships and opinions about acceptance and clothing and (2) research on African dress and textiles.

High School Girls' Friendships, Acceptance and Clothing

The first research area, the study of one class of high school girls from the freshman through the senior year, may be familiar to you through the articles published in the JOURNAL OF HOME ECONOMICS and the Experiment Station Research Report 222 published in February 1974, which has been mailed to many of you recently. The study can be summarized by the sub-title, "Birds of a Feather." We found that four peer groups developed in the freshman year along lines of parental social class rank and continued over the four-year period. Both
change and stability occurred in the membership of each of these four groups, but basically each group differed from the other over the four years to have an identity of its own. Within the group, members held opinions about acceptance and clothing which were basically similar to each other and frequently different from the members of other groups. In addition, some girls were excluded from friendship groups either by chance, choice or rejection; and although their opinions as an aggregate were not similar to each other, their opinions on acceptance and clothing did differ from group members.

What was the output of this research study? An annotated bibliography, seven M.A. theses and problems, one Ph.D. dissertation, nine published articles and one final report.

What was the feedback of this output? First, the articles were beamed toward different audiences. Several emphasized the straight research results, and were published in periodicals aimed at professional colleagues. Two (one in FORUM published by J. C. Penney Co. and the other in MICHIGAN JOURNAL OF SECONDARY EDUCATION) emphasized the implications for educators, parents, social workers. Therefore, the articles themselves differentiated between knowledge for the sake of knowledge and the utilization of knowledge by adults working with teenage girls.

Second, the research results provided feedback for the theoretical concepts and propositions outlined by Gregory P. Stone in his article, "Appearance and the Self." As we designed the research instruments and analyzed the resulting data, we had chosen Stone's theoretical concepts of "program" (the way we present ourselves to others) and "review" (the assessment by the viewer of the "program"), the role of appearance in the identification of others and in the identification with others. Our data generally supported his ideas that appearance is influential in establishing or discouraging discourse.

A third type of feedback was the training of the graduate students who participated in the research for their own degree programs or as graduate research assistants. Fourth, there has been feedback into classroom teaching by using the research findings in teaching. Fifth, lectures have been presented to other professional groups (such as the extension home economists in Ohio). A sixth possibility of feedback has not materialized specifically from this study to date, however, it is an idea which has intrigued me: an action program with teenage girls who want help in clothing selection in a particular high school setting. Using the information generated from the research, home economics teachers, counselors, or social workers could aid teenagers who do not understand the clothing norms in a particular setting or could aid teenagers who understand the norms but do not have the knowledge or skill to manipulate their wardrobes to suit those expectations.

**African Dress and Textiles**

The second research area was initiated by my three-year residence in Nigeria from 1963-1966. The African dress and textiles research findings cannot be summarized as neatly as the teenage research because the African research is not composed of one single research project,
but instead, of many allied projects. My initial area of interest while living in Africa was to establish a working bibliography of African dress for myself in order to find out what published material already existed. At the same time, I perceived the variety and number of handcrafted textiles which existed in Nigeria and began to collect examples of as many as possible. As I collected the textiles, I tried to find out what research existed concerning them. I was engaging primarily in secondary research in contrast to the primary research thrust of the high school study.

Upon my return to the United States I encouraged graduate students also to do secondary research on beads and textiles. Our first field research study is now underway in Nigeria.

The output of the African research thrust includes a bibliography of African dress, an article on African dress as an art form, an article on Nigerian handcrafted textiles, a forthcoming book on Nigerian textiles, four M.A. problems and theses (one of which has been published), and two or three more which are in progress, and also a Ph.D. dissertation in progress on the analysis (through photographs) of the dress of five generations in one Yoruba family in Nigeria.

The feedback from the African research output is much more varied than the feedback from the more unified research study reported earlier. First, photographs and African cross-cultural examples of dress were incorporated into an introductory textbook on dress titled THE VISIBLE SELF: PERSPECTIVES ON DRESS. Second, lecture materials have been incorporated into two undergraduate courses at Michigan State, "Survey of World Dress," and "Culture, Society and Dress." Third, Nigerian fabrics and slides of the fabrics have been used in the beginning textile course and a textile design course taught at Michigan State University. Fourth, lectures have been given on Nigerian dress and textiles in other universities. Fifth, a yearly graduate seminar on African Dress has been taught at Michigan State which has introduced Africa through the study of dress to students generally ignorant of that continent. Sixth, graduate students have been stimulated to visit Africa on specially focussed tours to study African dress and textiles. Seventh, specific Nigerian textiles have been on loan to the Smithsonian Museum for their African Hall and the the Museum of Modern Art's traveling exhibit, "African Textiles and Decorative Arts." Eighth, two exhibits of Nigerian textiles have been organized in the past year. One at Michigan State had 5,000 viewers in three weeks and a repeat of the exhibit was held at Hampton Institute. Ninth, feedback into the commercial world was given by consulting with Time-Life Books writers and researchers who are currently publishing a book titled "Exotic Dress" which has materials on a Yoruba form of dress called the Dansiki and on batiks designed in Europe for the African market as well as on indigenous African starch resist batiks. Tenth, there has been feedback into Africa and Nigeria with a stimulation of interest in an area of life taken for granted. Publication of the African dress bibliography and African textiles outline plus personal contact and correspondence with Africans about African dress and textiles has made some Africans more aware of the beauty of their handcrafted cloth and their distinctive ways of dress. Such contact has also stimulated further research by Africans themselves.
Finally, the most current feedback example is my cooperative effort with the Urban 4-H Youth Programs in Michigan on a project titled "Ethnic Heritage Series" in which we are developing multi-media modules for testing in five urban areas. (A module usually contains 20 slides and has an accompanying tape-recorded or written commentary plus supplementary written materials.) "Ethnic Heritage" is an inclusive title which purposely covers any ethnic group. We are utilizing the African materials first. The purpose is to teach black youngsters about their African heritage, but also to teach youngsters of other backgrounds to appreciate Africa. So far we have a set of slides which introduces as an example, the variety of terrain, housing, transportation in Africa which we call the General Cultural Series. In addition, we have a module on starch resist batiks from Nigeria, appliqué cloths from Dahomey, Adinkra cloth from Ghana, and hairstyles from Nigeria.

Except for the cultural series, each module has a project or series of projects for the 4-H'er to carry out with appropriate modification for the American setting. I will show you one of the modules as an example— that of hairstyling in Nigeria.

(Slides followed with accompanying commentary.)

NIGERIAN HAIRSTYLES (Commentary for Slides)

1. In every part of the world, people attempt to improve upon their personal appearance. One area of the body that is easy to modify is the hair and the women in Nigeria are like women everywhere in that they arrange their hair in many different ways. This elaborate style worn by a Yoruba (yoh' roo bah') woman is done with many tiny strands wrapped with shiny black thread.

2. We are talking about the Yoruba people who live in southwestern Nigeria. Most of the following pictures are of the Yoruba from the area in and around Lagos, the large coastal city. A few pictures of people from other parts of Nigeria are also included.

3. A woman who wants her hair done in Lagos in a Western style might go to a beauty salon such as "Sally's" where professional hairdressers work. She might also find a hairdresser in the market place. It is difficult to do one of these hairstyles on one's self but friends and relatives often fix each other's hair.

4. Several hair styles are distinctive of Yoruba land and are named after familiar objects, particular events, or special occasions. This style was called the "War Is Over," a style named to celebrate the end of the Nigerian Civil War in 1970. Braids formed on each side of the head are joined together to give the appearance of a crown.

5. A woman who is "dressed-up" may cover her elaborate hair style with a head-tie called a gele (gay lay). It used to be in
poor taste to appear in public with the head uncovered but this custom is changing. The rest of this woman's dress which is typical of the Yoruba includes a blouse and a fabric wrapped around the body like a skirt that is called a wrapper.

6. Before the hair is arranged it must be clean and fully dry. The ends are all separated and combed out into a "bush." The hairstyle chosen depends upon a person's head shape as well as the length and thickness of the hair. This young woman is one of the Ibo (ee-bow) people from the East Central State.

7. The hair is sectioned into the desired divisions and a conditioner such as pomade or vaseline is applied. Hair-tying that resembles wire sculpture is called irunkiko. It is done by separating strands of oiled hair and wrapping them with shiny thread.

8. Children begin to learn the techniques of arranging hair at an early age when they go everywhere with their mothers. Hairdos last about one week and Saturday is the day when many women have their hair done in Nigeria.

9. The strong narrow combs used to separate the hair are either plastic or wooden.

10. Wooden combs develop a beautiful lustrous finish after they have been used many times. This woman is drawing out a thread to be wrapped around a strand of hair also called a plait (plat). It is a combed out, twisted section of hair. Only in the last 25 years has it become fashionable to wrap strands of thread around each plait to help the hair stand out from the head. Before that styles were done without thread and usually by braiding.

11. As many long thin braids as possible are desirable and the process of thread-wrapping allows more braids to be made. The thread can also be adjusted to put in kinks or curves or puffs. The little girl is having her hair done in a style called "half-moon."

12. This is a fairly simple style in which thread has been wrapped around the plaits of hair. When a Nigerian wears her hair in a "natural" style she means she is wearing one of these plaited styles. "Corn-rowing" is braiding the hair in patterns close to the head and is also typical of West Africa, but is the word we use in the USA.

13. Names such as star, laundry basket, rain-falls-on-the-ear, beret, and skyscraper are used to describe hairstyles that have some resemblance to familiar objects. One style with many thread-wrapped plaits pulled to one side of the face is called "I feel all right."

14. Men have a choice of several hairstyles too. A shop is located in the market place which has a sign showing different cuts that the barber will do.
15. These variations were fashionable during the 1960's.

16. It will take longer than an hour to plait a more complicated hairstyle. Price varies according to the length of the hair and the number of braids in the style. Hair-tying need not be limited to African hair. As long as the hair is long enough and has coarse body, it can be tied.

17. Most women go to beauty shops only on special occasions so an elaborate hairstyle done professionally might be an indication that there had been or was going to be an important occasion. Less complicated hairstyles are worn for everyday.

18. Differences between hairstyles of men and women in Nigeria have been obvious. Hairstyles are one way to tell the boys from the girls at an early age.

19. People from different regions also wear their hair differently. This hairstyle of many tiny braids is unique to women of the Kanuri people in the northeastern part of Nigeria.

20. Nigeria and America have exchanged some hairstyles. The wife of a Nigerian student in America is wearing the familiar "Afro" which was worn in this country before it appeared in Nigeria. Her daughters have their hair done in traditional Nigerian hairdos similar to styles that are being worn by some Americans today.

(End of slides and commentary)

After the slide presentation a discussion follows including a demonstration on the hair of someone in the audience. Because cornrowing and plaiting of hair have become more popular and widespread in the United States recently, one or more members of the audience may participate as demonstrators. If the group is large, smaller numbers can cluster around one demonstrator. A handout sheet is available to take home which illustrates different examples of hairdo styles.

Conclusions

The topic assigned me was the application of research. What are the implications from these research output and feedback examples in which I have been personally involved? These specific examples illustrate several major points:

1. Output and feedback are not always easy to separate from each other as categories. For example, I listed the training of graduate students as feedback from research but this example could also be looked upon as output.

2. Application of research or research feedback is varied. The feedback may be in support of theory, in support of teaching, or in support of public or community programs (such as the 4-H example or the Nigerian textile exhibit). The potential
types of feedback should be made more visible as we write research proposals so that administrators and funding agencies (whether Agricultural Experiment Stations or other government or private foundations) can understand the potential application of our research as we make efforts to obtain support.

3. Research feedback in our field may need other than conventional delivery systems. We expect to publish articles in professional journals, present papers at professional meetings and incorporate research results in our teaching. However, to get support for more research we need to extend to audiences beyond our professional peers who can utilize the research results and in turn support funding for further research. To reach these audiences we may need to use more visual materials for example, and we may need to be willing to communicate our research results by using language lay audiences will understand.

4. Output and feedback both are not always quantifiable, especially in an area such as the socio-psycho-cultural aspects of clothing. We can easily be impressed with numbers or record-breaking examples (such as high yields of bushels of corn or wheat per acre) but what is impressive in regard to the research output from the study of high school girls and their opinions about clothing and acceptance or the study of African dress and textiles? I have quoted numbers in some cases--nine articles published and 5000 people attending one exhibit. But what do these numbers mean? Perhaps the numbers are meaningless. Instead we must ask a non-quantifiable question: What impact has the research had or what potential impact can it have?

We can tally one bibliography, for example, but the real question is, What use has been made of it and what research has been stimulated by its use?

In regard to feedback in the research location--in one case only one high school, in another case the African continent generally or Nigeria specifically--again we cannot quantify impact. I can best illustrate this by a story of a 12 year old boy, a nephew of a friend of mine, who asked his aunt after he saw an American woman photographing some of the local handwoven cloth, "Auntie, is it really beautiful? It is so common, I don't know whether it is beautiful or not."

Another aspect of our research which is not quantifiable relates to the subject matter, the content. My own belief is that clothing is one critical variable in the development of self-image and personal identity. My research referred to here as well as that of Lillian Matthews' presentation has specific implications in regard to (a) understanding the self-images and personal identities of teenage girls or men and women inmates and (b) in developing pride in the cultural heritage of black Americans by black Americans as well as enabling others to develop an appreciation of that pride. If only one individual has a different self-image as a result of our research, who can quantify that?
References


3Published articles in chronological order from this longitudinal study are as follows:


Final Report:

In addition, one M.A. problem was drawn from the project:

Clark, Jeanne (M.A., 1964). "Case studies of sixteen girls' opinions on clothing, appearance and group acceptance."


In choosing to speak on "The Physics of Textiles" I have helped myself to a very broad subject. Rather than go too deeply into physics, I shall deal with one branch of textile physics with which I have worked and consider some of the ways in which physics and related sciences may improve our understanding and teaching of textiles.

Physics is perhaps the most central of the sciences. Accordingly, the physicist makes contact with many on the fringe of his field, such as chemists, mathematicians, and statisticians; and their expertise and philosophy inevitably rub off. I shall discuss later some of the ways in which the physicist's central position may be an advantage in such applied sciences as textiles.

Corresponding to the branches of classical physics are the mechanical, electrical, thermal, optical and acoustical properties of textiles. Together, I suggest, these physical properties comprise 90% of the textile properties of significance to consumers. It is hard to reconcile the present emphasis on relevance to the consumer with the traditional bias towards organic chemistry in textiles.

I begin one course with four or five hours of discussion on the properties which are seen as desirable, unnecessary, or undesirable in various end uses. When I call for suggestions, the first property mentioned is invariably strength. For many applications, strength is more useful as an index of quality than as a characteristic in itself, and there are some interesting minor applications where strength in undesirable.

Strength is followed by properties such as extensibility (or often inextensibility), elastic recovery, stiffness or limpness, wrinkle recovery, shrinkage, hand, thermal insulation, color and its retention in the presence of various hostile agencies, static electricity, noise absorption, and so on. Observe that these are all physical, and mostly mechanical, properties. Properties such as resistance to acids are significant only in a few applications and are extracted from the students about as readily as teeth.

The French have names for practitioners of the branches of physics, such as mechanicians, thericians, and electricians. Most of these people are described only by gaps in the English language, but the mechanicians have been well represented in textile physics, by home economists among others. There is time for one example, that of hand.
Forty years ago, F.T. Pierce published a classical theoretical paper, "The Handle of Fabrics as a Measurable Property." It ran to 50 pages and contained no references at all, since it was completely original. It is a good publication to show to students and others whose idea of a good term paper or thesis is one with a well padded bibliography.

It was basically an analysis of fabric stiffness and includes the development of stiffness measurements from the simple cantilever appropriate for structural materials (Fig. 1)* to the various shapes in which the less rigid textiles could be bent for stiffness measurement. It describes the evolution of the fixed-angle flexometer (Fig. 2) almost in its present form as the Shirley and Monsanto Stiffness Testers. As a study in the development of a test method it is still perhaps unexcelled. Pierce has been called "the father of textile physics" as have several other claimants to the title.

We know now, of course, that there is more to hand than stiffness. Compressibility and friction are important contributors, too much or too little of any being related to a poor hand. The failure of the practical approach is worth noting in the Handleometer, a device for pushing the test fabric through a small hole in a smooth plate by means of a metal finger. The force needed to push the finger through the hole was claimed to be a measure of hand, since, for example, a fabric having a high stiffness, friction and resistance to compression would give a very high reading. But would a moderate reading indicate good hand or an unpleasant combination of roughness and limpness or of stiffness and compressibility?

I like to think that two important contributions which a physicist can make are in fostering quantitative thinking and in encouraging clear definitions of concepts. It is a fair criticism of many home economics students that, while being perfectly literate, some are not very numerate. I see it as part of our job to make students just as fluent and confident in numbers as in words; for them to be able to communicate clearly and concisely in tables and graphs as well as in sentences. Otherwise, we are failing to prepare them for the modern world in which professionals read and write.

As an example of the second point, I would like to talk about absorbency in textiles, a property of unquestioned significance but vague definition. It is generally thought of as having something to do with moisture regain and being related to comfort in apparel.

Tables of moisture regain will show data like: wool 16%, rayon 11%, cotton 8% and polypropylene 0%. Why then do we not make towels of wool or rayon? These data fail to take into account the skins of wool and viscose fibers, which hinder moisture transfer.

Why does a polyester or olefin garment feel quite damp when pulled from a spin dryer? The answer is in the physical capillary forces holding moisture in the fabric pores.

In determining comfort, the distinction between moisture regain, moisture transmission and surface texture needs to be drawn. Here is a sample of rayon lining cloth with a regain of 11% and a piece of textured

*Figure numbers refer to slides shown with the lecture, and are not included in this paper.
polyester, having only one thirtyeth the regain. Which would you rather have next to your skin?

Strangely, most texts refer to obscure chemical treatments such as Wurlanizing—which I believe was last done commercially seven years ago—while devoting little space to one of the most common and costly physical processes: drying. In this energy-conscious era, those to whom we grant degrees should at least have a firm idea of the reasons for both the mechanical and thermal parts of this two-step process.

I shall finish with mechanical properties now and avoid invading Ron Hastie's field, but it is important to stress the importance of a sound theoretical background. As an example, we know that certain dyes, notably the azoics, are very sensitive to humidity; their light fastness is usually better in Arizona than in New England. They invariably fade faster in the controlled conditions of a Fadeometer or a Xenotest than in the hot, dry atmosphere of outdoor exposure boxes. Disperse dyes, on the other hand, tend to sublime outdoors under glass, giving lower fastness ratings. If this bit of information sounds esoteric and not worth a minute's explanation, reflect on the number of graduate students who have used up a year or two of their lives on some project such as "A Comparison of the Effects of Fadeometer and Outdoor Exposures on the Fading of Selected Fabrics."

As a "thermician," I have been concerned with the physiology-clothing-environment interactions in human thermal comfort. Whether one explains the use of apparel in terms of the Figleaf Theory, the Display Theory, the Hierarchy Theory, or the Comfort Theory, thermal insulation ranks as one of the most important properties in the use of household and apparel textiles. Strangely, very few laboratory courses contain even an elementary experiment on heat or moisture flow through textiles.

While in Winnipeg, I worked with windchill, defining it in terms of the amount of clothing needed to obtain thermal equilibrium (Fig. 3). Thus, since it takes 18 mm of clothing to keep a walking person comfortable in near-calm weather at 0°F., any other combination of conditions which calls for 18 mm of clothing would have a windchill apparent temperature of 0°F.

At Texas Tech. I have applied a similar concept to human biometeorology under hot conditions. The analysis becomes greatly complicated by physiological variables which had not been measured directly. No attempt is made here to describe the steps between the statement of the problem and its solution. As an example, a temperature of 80°F. with 80% humidity is perceived by the average person as equivalent to one of 90°F. with 10% humidity. Full sunshine raises the apparent temperature by 12 F. degrees but this increase would be halved in a wind of 18 m.p.h.

Teaching textiles is an easy job since we have some excellent texts to lean on, notwithstanding any small criticisms which I might make. But they necessarily reflect shortcomings on the demands which we make of the authors, such as an approach which I think is insufficiently oriented towards consumer properties and performance, and a disproportionate stress on some fibers which are no longer important to the American consumer.
One text devotes less space to all the non-cellulosic man-made fibers than to silk, even though our consumption is already in the ratio of 1,500 to 1.

I would be the first to agree that a profound treatment of physical aspects is not required in our courses; I do not even mention such basic concepts as stress and strain. But the physicist's most valuable contribution may well be to bring a degree of objectivity, characteristic of physics and the related sciences. Turning to an example of statistical curve-fitting, it is interesting to plot the annual U.S. consumption of apparel textiles, including linings, and of household textiles. Since these may be expected to grow exponentially, or to have a growth rate in proportion to their size, it is logical to plot these amounts on a semi-logarithmic or ratio scale (Fig. 4). This gives straight lines with fluctuations. If we fit these lines by eye, or mathematically, we find that apparel has had an average annual compound growth rate of 3.2% while household textiles are growing at 6.2%. Extrapolating these lines shows that after 1979, we can expect to be consuming more household than apparel textiles. There is naturally a degree of uncertainty in this date but a more elaborate analysis shows that we can be 95% sure that the crossover will occur sometime between 1976 and 1986. May I stress that the amounts are in pounds, not dollars. Since we are now preparing students for careers in the 1980's, this has implications for the relative emphasis to be given to both types of textiles in our courses.

It is worth stressing that our consumption trends follow a geometric progression, with textile consumption increasing at 4 to 5% annually. It can thus be easily shown that more than half of the textiles and apparel which have ever been made, have been made since 1959, both in the United States and the world.

To examine another relationship, the rate of change from one type of consumer good to another, as from natural to man-made fibers, is commonly described by a Hubbard curve, equivalent to a normal Gaussian relationship. Cumulatively, such a relationship should appear roughly as a straight line on a probability chart. If we plot the proportion of man-made fibers in U.S. textile consumption we have a remarkably close fit to a straight line (Fig. 5). Despite the joyous forecasts of natural-fiber interests, there has been no reversal of this trend for 37 years and the relationship is clearly of some predictive value. Please observe also the absence of the so-called "textile cycle."

Analogy is useful in describing concepts, even if invalid in proving anything. It is interesting to compare the change in our consumption habits in fibers with corresponding data for dyes and foods (Fig. 6).

Topology is a type of geometry in which any amount of shape distortion is allowed as long as surfaces are unbroken and contacts are maintained. I use topological maps freely in teaching the economics of textiles and apparel. This example shows at a glance the chief consuming states of apparel at a satisfactory level of accuracy perhaps in a more interesting, rapid and informative way than any alternative method.
These are a few ways in which I like to feel physics and related sciences can enrich the teaching of textiles and provide a barrier between ourselves and some of the less learned forces which are sometimes exerted on us. Explanations have necessarily been brief but question time may provide the opportunity to amplify them.
PATTERNMAKING AND THE MECHANICS OF GARMENT STYLE:
A THEORETICAL APPROACH

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Some of you may recall a television advertisement from quite a few years ago in which a little bird steps to the middle of the screen and announces, "I've got six seconds to say it--He gives his message", and then collapses in exhaustion. That is how I feel right now. I've got 30 minutes to give you the essence of four years intermittent work, and work which is not even yet complete as you are about to find out. For that reason, I'm going to alter the title of my paper to something quite a bit narrower than previously publicized: Namely, "Pattern Making and the Mechanics of Garment Style: A Theoretical Approach."

This is quite a different conception of the application of physics, or more correctly, mechanics, to garments than you have previously encountered in the work of the clothing physiologist or the textile scientist. To them, in theory, a well made garment, regardless of its style, is free from compression, tension and torsion, except for what might exist in the garment body plane. The theoretical conception I have chosen to deal with, all to briefly, unfortunately, is based on the premise that style, the variety we find within one type of garment, is created through how we push, pull or twist fabric to suit the demands of a designer's sketch or idea.

I think it only fair to myself and to you to give some account of why and how the ideas expressed in this paper evolved. To some of you, the end conception of this paper will be that I have taken a fairly easy subject and made it unnecessarily complicated--a sin for which there is no redemption.

Actually the whole thing dates back to the time when I was working in the garment industry in Los Angeles and observed a gray tweed skirt which I thought to be one of the most beautifully draped garments I had ever seen. In essence, it was a three-quarter circle skirt in four gores which draped exactly like an A-line skirt with flare just to the outside of the hip bone which folded to the front. (Figure 1) I pondered the proper pattern for that skirt and how to achieve it for almost two years before I figured it out. My friends in the industry, and certainly none of the pattern books I could lay my hands on, explained how to make the pattern or why it worked.

After having finally figured that skirt out and having also been responsible for teaching pattern making, I have come to the conclusion that the current approach to teaching pattern making lacks a scientific
basis and is at best a cookbook methodology which does not necessarily prepare students to make patterns which we do not acquaint them with in the laboratory. I'm not even sure we are providing them with principles of pattern making, much less sufficient to make them proficient pattern makers, stylists, designers or sewing teachers. We can only tell our students how to produce a pattern, or one similar to it, and if they could read our pattern cookbooks themselves—something I can't always do—they could do as well without us. We are not able to tell our students why a pattern is produced in a certain way. I, for one, cannot defend the dissemination of this kind of information at the University level. It may be alright for high schools but the university or college is socially responsible for the discovery and expansion of the foundations of knowledge.

The answer to this situation, as I see it, lies in the development of a theory—an explanation—which can be scientifically tested for its validity and upon which prediction can be based.

To begin to develop a theory of the mechanics of garment style, one should have a model, that is an ideal standardization, which is free of those elements we wish to introduce, control and predict. The draped block pattern, the basic fitting pattern, or whatever other name you wish to give it, is the most likely candidate for this. (Figure 2) By definition, the function of the block pattern is not that of a garment, but that of a structure which fits the body perfectly and is without style. Being free of style, it thus proves to be an adequate standard against which all changes that are introduced can be measured.

With this model in mind, we need next to enumerate the various methods by which style can be introduced. Basically, there are four methods by which this can be done (Figure 3) (plus a few of what I call sub-methods):

1. Fabric can be cut away from that which is present in the model.
2. Fabric in the model can be cut into a greater number of pieces.
3. Fabric pieces in the model can be joined into larger pieces.
4. Fabric can be added to one or more of the pieces in the model.

Among the sub-methods I include:

1. Shifting of controls to new locations.
2. Changing the character of the controls.
3. Adding new parts (e.g. collar, belt).

Commonly, all four of these methods are used in combination to create a single garment style. Essentially, the first three methods, and all of the sub-methods, do not change the mechanical relationship within the garment at all. Just as with the model, any style with
FOUR METHODS OF INTRODUCING STYLE

Figure 3

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essentially only these changes would be in a state of equilibrium. That is, all forces active within the garment would be equal and opposing. Basically, there are two types of forces with which we need to become acquainted: tension and compression. Tension forces are those which pull and compression forces are those which push.

In a styled garment, the mechanical forces can be divided into two types: structural and modal. (Figure 4) Structural forces, which can be either tension or compression, are those which exist along seam lines and are responsible for holding the structure together as well as holding the pattern pieces in proper relationship to one another. (And to be technically correct, the two threads used are defined as belonging to or being a part of the pattern piece.) These structural forces must be in a state of equilibrium or there would be no garment.

It should be pointed out that it is generally only the structural forces in a garment with which the clothing physiologist deals in his theoretical explanation of garment structure. It is too constraining and limiting for the apparel designer or pattern maker to work within this theoretical framework, however, because it does not allow for the explanation of style within a garment, nor does it allow for the comparison of style variations between garments. In fact, it does not even recognize the concept of style which is of course, of prime importance to the designer whether he is involved with the technical or aesthetic aspects of design. The designer's concept of mechanical forces must hence, be extended to include the concept of modal forces—those which are responsible for surface variation in a garment, such as the ripple or flare of a skirt, the folding of a cowl, or the puff of a sleeve.

The examples I have just given to illustrate modal forces, which include both tension and compression types, are extremely significant for they also illustrate the principle that modal forces are introduced when the mechanical relationships within a pattern are changed through the addition of excess fabric. The addition of fabric is the most common method of styling garments and at the same time, the most complex and difficult to understand, much less measure and predict.

In adding excess fabric to any garment or pattern pieces, we do two things; we first increase the dimension of one or more of the edges of that piece, and secondly, we change the shape of one or more of the edges. Therein lies the key to successful patternmaking, whether it be by a paper and pencil method or with the use of cloth—the total shape of the pattern piece. At this point, I take exception to the popularly held conception of control of fabric grain as being the key to successful patternmaking. Garments can be successfully cut from grainless, non-woven fabrics or from knits which have grains in only one direction, provided the cutter has a thorough understanding of the shape of garment pieces and the interaction between them when they are stitched together and placed on a figure.

At this point, I think we are ready to divert from what must sound like sermonizing on my part—to the analysis of an example. And I hope this analysis will leave you with as many questions as it does answers.
Figure 4
Since you have already been introduced to the tweed skirt that is the problem I am going to tackle. (Figure 1) I will however only analyze the front panels of it even though it is in part the back panels which control the direction of the folds in the front.

The analysis of the skirt naturally starts with the skirt front pattern pieces as found in the model. (Figure 5) Logically, the first response most of us would make would be to shift the waistline darts into the hemline. (Figure 6) At least, many students would try this, and so did my engineering consultants. Although this is a step in the right direction, it is not the correct solution because it does not provide a means for the control of the flare we want, neither does it provide excess fabric to create the flare.

Another solution often tried is the addition of excess fabric at the side seams. (Figure 7) By logic alone, this should work, but the resulting garment demonstrates that it does not. What happens instead is a fanning of folds from the hip area.

It then becomes obvious that the correct solution lies in opening up the interior of the pattern piece and adding excess fabric. This realization leads to two other common, but erroneous solutions. The first of these is to open the pattern to the hipline, while folding out a small amount at the hip line. (Figure 8) When it is explained that this shortens the side seam resulting in the garment having an uneven hem, and that making a correction for length would yield the same result as adding excess at the side seam only, the alternative would seem to be to split the pattern piece to the hip line and then to center front and the side seam. (Figure 9)

Finally, we come to the proper solution of the problem which consists of opening up the pattern to the waistline, (Figure 10), or in other words, changing the dimension of the hemline and changing the shape of the waistline. As we shift the outer edge of the pattern, increasing the size of the hemline, to allowing for vertical excess through the pattern piece, the shape of the waistline changes. But that is not all that is happening; another very significant change is occurring in the waistline area. This second change is essentially an addition of excess fabric in a horizontal direction as opposed to the vertical addition which was purposefully made. (Figure 11)

These horizontal excesses are extremely important because it is from these areas that the mechanical forces we depend upon to create surface variation in the pattern are exerted. The tremendous significance of this excess fabric can be most readily seen when, as sometimes happens, there is an incorrect attempt to blend or true them out of the pattern, and their effect is lost. (Figure 12) Their effect can also be seen if they are, as they should be, sewn to their proper adjoining seam which in all cases will result in a straight appearing seam.

In this particular case, we have created a shortage of fabric in the seam allowance that has to be clipped in order to get the seam allowance to lie flat. The point at which we must do this clipping is most important because it is the point where tension exerts a pulling
force upward on the skirt, thus controlling the location of the fold. Throughout the remainder of the seam, where it did not match the original model, the excess fabric has been pushed or compressed downward. As it is compressed downward along the side of the vertical excess fabric, it appears to exert a pushing force, aided and reinforced by the skirt back, in the direction of that vertical excess, thus causing it to stand out from the figure. (Figure 13) That is in essence the theory of the mechanics of garment style.

Although it is only the direction of the mechanical forces for a given fabric that has been hypothesized in this theory to date, it should be recognized that our knowledge is and will remain extremely limited until we can hypothesize or measure the amount of these forces. Our thinking to date would lead us to believe that some of the variables involved in the amount of force exerted would seem to include (1) the amount of excess fabric added into the pattern, (2) the number, degree and continuity of the angles in the seam edge, (3) the overall size of the pattern piece and (4) the properties of the fabric, including specific gravity. Unfortunately, these elements have not undergone the scrutiny of systematic research. Furthermore, it is also unknown as to just where the compression forces are dissipated in the garment. Do they end where the fabric folds outward from the body or do they end on the center edge of the fold? Is this different for different fabrics? The questions which can be asked are almost endless. And, by now, some of you I am sure would suggest useless. Even if we did know the answers what difference could it possible make? Some of the advantages I can think of right away are answers to such questions as (1) how many slashes should I put in a pattern to get the desired effect? (2) where should I put the slashes to get the desired effect? (3) how far should the grain-line be dropped in draping to achieve the desired effect? and probably more important to us all, the answer to this question (4) what will the relationship be between my final fabric and my preliminary muslin copy.

I've come to the end of my paper knowing that to many of you it seems very vague and incomplete. Part of this is due to the time constraints we have faced, and part is due to the fact that it takes some time to absorb the substance of what I have been saying, which I assure you will become more clear as you experiment with similar problems in the laboratory. And part I will admit is due to the fact that I don't have all the answers. There are so many other garment styles which need to be worked through, and that, colleagues, I leave to you.
CLOTHING FOR COMFORT AND PLEASURE

Dr. Erna Gunther
(Transcribed from tape, not edited by speaker)

I am pleased to be here with you and especially in this very nice auditorium. I might say a few words, before I begin what I have planned to say, about the beautiful exhibit of Navaho blankets in the museum today. These blankets have a very important place in textile studies of any anthropologist. There is much that one can see in the blankets that points to the culture of the people. In the first place, they vary in measurement not more than 2 inches in either direction. There are various kinds of blankets; the ones on display are used for wearing and also for sleeping. When a Navaho has his blanket with him he really doesn't need anything else in the world except possibly his horse. He can live very comfortably. He wraps the blanket around him to sleep and he wears it so that the blanket measures from the collar bone down to the middle of the calf. As I said, they vary just a very few inches in length and also in the width. Sometimes we feel that we are the people who are technically exact, but here you find a wonderful example of exactness from people who did not have a tape measure, a rule or anything of that kind.

They measured in a very interesting way. For instance the people I have worked with here in the Northwest, don't say, "My fish is this long," holding the fingers apart; they say, "My fish was this long," measuring a distance up the arm. In other words, they come from the tip of the finger up the arm. We tried out the method and actually you can be more exact by their way than you can our way. I just wanted you to realize that the blankets form a magnificent collection, and when you see so many of them you can learn about the structure of the blankets, and something of the thought that went into making them.

You might also be interested in the origin of the red used in the blankets. At first only grey, white and black were used in making Navaho blankets. When the Spanish soldiers began coming into the Southwest and fighting, the Indians would take the uniforms of dead soldiers, if they were not torn up, and use the pieces of the cloth. If the uniforms were very torn they would take the cloth and boil it to make red dye for use in dyeing their wool. I never see red in a Navaho blanket without thinking of this piece of history.

Now let me go on to what I really intended to say.

I must say first, in case some of you don't know, I am an anthropologist by training, and I look at textiles from a logical point of view. In other words, I am very much concerned about the place of textiles in a culture and the place of clothing in a culture. I would like to review for you just a little bit about man's attitude toward clothing and the place
of textiles in the whole field of clothing. In the first place it is very interesting that we give so much thought to clothing today. Clothing is a very very important item in our culture. There are many cultures where clothing was not important. I think one of the first things we must do is to separate clothing, and types of clothing, from relation to modesty. There is no relation between clothing and modesty. There are many many people in the world who live in cold climates who do not wear any clothing. I am very familiar with the group the Nootka who live on the west coast of Vancouver Island where the men wore no clothing for work, but possibly put on a garment to sit in the house so they would have something on the back because the fire was in front. This had no relation whatsoever to who was in the room or where they were at the time.

When the first missionary came to this area he insisted that the men wear trousers to church. The men bought some trousers but they did not like to wear them, so they found a hollow tree near the church. They came to that tree and put on their trousers and when the service was over they took them off and put them back in the hollow tree until the next Sunday. That did not arouse any anxiety on the part of the group as a whole. This was just something to please these men who came to talk to them. They really did not know what it was about but it was entertainment and so they went. If the missionaries wanted them to wear a pair of trousers, well that was a nice little thing to do, but they were to uncomfortable for regular wear.

There you have an instance of people going completely naked in a temperature where most of us wouldn't enjoy being in that condition. They start training their children very very early. When the youngsters are about one and a half to two years old they take them down to the salt water, winter and summer, and make them go into the water to get accustomed to the temperature of the salt water, and Nootka Sound is not very hot. This is the same way in which people acclimate themselves to feel you've got to wear clothes. You don't have to wear clothing if you get used to wearing none early enough in your existence. We have many people in the native world even today that still will have a blanket and nothing more.

We go back in history and pre-history to find out how some of the ways of mankind have been established. One of the very earliest records that we have of man's work are the cave paintings, which you see in southern France and northern Spain. These cave paintings have been dated back to approximately 40 thousand years ago. They are magnificent paintings of all the animals that existed in those days, the animals they hunted and the animals that supplied them with their food. One of the amazing things about these paintings is there is not a single human being in them. In other words, they never painted a picture of themselves or of their fellow-men. They did, however, about 30 thousand years ago begin to make what we call mobilary art, in other words a carved figure. The first figures that we find are the figures of women, and none of these women would win prizes in our fashion shows. They were small figures, and all looked pregnant. They had funny round heads and they all had something on their head that we cannot possibly analyze. Perhaps it was the way they indicated, say curley hair. If it was hair it set on the head just like a beanie. It certainly
must have been hair. They had very very short stumpy legs and no feet and no arms. Arms, feet, and legs are the hardest things for a sculptor to make, and consequently, these creatures went without them. They were found in a cave in Austria near the town of Willendorf and so these figures have been called the Venus of Willendorf.

A few years ago we were in Vienna for a meeting of anthropologists. Of course, everyone looked forward to seeing the real one because this figure has been reproduced over and over. One noon we all went to the Natural History Museum, and the first people who got there really set up a scream because they had a reproduction sitting there. Everybody said, "What did we come here for." We turned to one of the guides, and he said, "With so many anthropologists here we didn't trust the real one." It was really a great surprise, as we had been other places at other times and they had had their treasures out. We said, "Where is she," and the guide said, "We won't tell you." The answer was that she was in the vault. It was really a great disappointment since this was the first indication we have of man making a human figure. Now whether a man made this figure of a woman, or a woman made it of herself, we have no idea. We have no idea what the relationship was between men and women of that period, but this first representation of a human figure was in a piece of sculptor instead of having it on the wall of a cave.

When we look at mankind generally we find there are a great many people who have been through a period when they had a blanket and nothing else. Now in the early days, that blanket usually was the skin of an animal. This is another interesting fact that you get as you go through history, you find that native peoples had a great deal of knowledge of natural history. They knew every part of the animal and they used every part of the animal. You find the clothing which they made was all first of the skins of animals. They learned the dressing of skin before they learned anything they could use to make a textile. One thing that we have hunted for, and we have never found until we come to the very sophisticated cultures, is the use of skin cut into strips and woven. That's not done, and I don't know why, because they did cut skin into very very fine fringes.

The uses of fringe is really a fascinating thing in clothing history because fringes are made with tremendous care. For instance the Plains Indians have beautiful skin garments. The woman's dress was a long narrow sheath dress, with a fringe coming from the back piece and fringe coming from the front piece. The fringe is always scalloped because a fringe hangs better when it is not all the same length. It took me a long time to find that out, but it is perfectly true. I have played with a number of Plains dresses and held them up and seen the way the fringe cascades down the side.

Another very interesting thing about the garments is that from very early times they liked garments to make some kind of sound. That is a quality we have dropped almost completely today. I think today we have great big necklaces that might give a little sound again. It is rather an interesting trait. There is a wonderful example of it in a poem by Lee Ho, a Chinese poet, who spoke of the tinkle of the jade on the princess' dress. You find everywhere in native life that they frequently ornament
their dresses with something that makes a sound when they move, not a clatter necessarily, but a sound. For instance, the people whose material I have been working with the last few years take the beaks of the Sea Parrot. When I say that some conservationist always is horrified by the idea that so many Sea Parrots die for somebody's shirt, I tell them that since parrots shed their beaks they do not die. These beaks make a perfectly charming sound when you put them at the ends of fringe.

The indians are very careful about where they put fringe on garments. If they are going to have a fringe they will have it at the legs or down the sides where it moves when they move. Many of you are familiar with the Chilkat blanket. One name for the Chilkat Blanket in the Tlingit language from the people who make it is the Dancing Fringe. The fringe was weighted. Sometimes when the blanket is made especially for dancing they will weight the ends of the blanket so that when the dancer fastens it around his wrists and swings around the fringe has the most beautiful motion you have ever seen.

There is a new magazine put out in Canada called ArtsCanada. They have a tremendous article in it on Northwest Coast Costume. On a double page, which folds out, they start a dancing group in Chilkat blankets. You see these dancers make a complete circle. It is a most beautiful piece of photography, showing what they do with a Chilkat blanket. The idea of having sound with your costume is a very popular thing.

When the indians began getting trade goods they did a very interesting thing too. One of the items that the early fur traders brought to the indians were thimbles. They all had perfectly satisfactory thimbles, made of a piece of leather which they put over the finger; but the traders didn't know that, so they brought thimbles. Well, the indians bought the thimbles in great quantity, but they didn't use them as thimbles, they used them to put on a belt. The women wore belts which had the thimbles hanging from the back. You can imagine the sound that they made, it was perfectly beautiful. One of my friends, who is also an anthropologist and very much interested in textiles, made herself a belt like that. From the sound of her coming into the room you know immediately who it is. She went around and collected really old thimbles; some of them that were made of brass. I have been looking for thimbles, old ones, for quite some time because I want to copy that belt, but I haven't gotten enough thimbles together yet to make enough sound.

Now, the interesting fact is that when we see books, especially the big picture books that are written about primitive man he is always wrapped in a blanket, and he is always wearing at least a loin cloth. The error they always make is that this loin cloth is worn from a point of view of modesty. I'm sure that that is not what they did. I don't think they wore a loin cloth, I'm quite sure that they wore a cape that was protective and not just a loin cloth. You find that women possibly wore something around the waist long before men did to protect themselves. I have always thought possibly they started these early garments when they were going through tall brush and so on; it would protect them, but evidently that is not particularly important. It is more important to have a robe that you can sleep in than for protection.
I have been working in the records of the early explorers. I want to know what the explorers found and what they saw. None of the books that I have been reading in recent years, describe these people after 1800, so I really get a good picture of what they looked like when the early explorers came. They constantly mentioned the fact that the people went without clothing as much as they possibly could. They also described the fact that the women wore clothing and quite a bit of it, while the men wore none. This, I think, is a very important fact. They even tell you how long the skirts were that the women wore. Now first, whatever clothing there was was clothing that was made of skin because, you see, there was no way that they had of doing anything by way of weaving.

Weaving may very well have come in in the period that we call the neolithic period, the second great period of man's history. In that period there is something that happened preceding weaving, and that was agriculture and the domestication of animals. From agriculture they got the idea of using vegetable fibers and from the domestication of animals they received the opportunity to get the wool of these animals without killing them. Those are important facts in man's history. The type of fiber that was used very early, I think, are like the fibers that are used by the people on the northwest coast, because up here on the coast there was no agriculture and no domestication of animals.

There was one questionable domestication for which we still can't find any documentation at all, "The Little Wool Dog." Well this dog was not as little as he is always written about. I have spent a couple of days in the Natural History Museum, part of the British Museum, and in the library with a librarian who was intensely interested in what I was looking up. We worked together constantly and every single reference we found went back to Vancouver, who spoke about the wool dog. He said it was like a Pomeranian; so I looked up what the Pomeranians looked like in that period. I went to the Victoria and Albert Museum and looked up lap dogs, but they were not Pomeranians that they have on their laps. Also, we found that the Pomeranian mentioned was a Spitz dog, which is a wolf dog, which is more like the dogs of the North. This Little Wool Dog has disappeared because he was no longer isolated and he mingled with other dogs in the Indian villages. So he is gone, but we do have some blankets with some Wool Dog hair in them; he was beige in color as far as we know. He was sheared in a manner that would probably answer his character. He was said to be very fierce. The way they sheared them was to take his hind legs and tie them together, and take his front legs and tie them together, shove him on a branch of a tree and shear him with a clam shell knife. Now, with that treatment they did not improve his character. I talked with a woman about thirty years ago, she was about 65 years old at the time, and she said when she was a little girl her grandmother had Wool Dogs. They kept them on an island off shore, down near Marysville. It was the little girl's job every day to take the row boat and go over and feed the dogs. That way they kept the breed reasonably pure. Here was one example of a little bit of domestication, but otherwise they did not have anything of this sort on the coast.

Now, we have a great many fibers that were used in weaving, they are important. One of the big things that they used were nettles. They waited until the nettles were brown in the fall, and then they were not
so nettley. Then they picked them and stripped the bark off since it was
the bark which they twisted into fiber and into weaving thread. They did
that in a very interesting way; as you would imagine they would have got-
ten the nettles off by that time because the strands were twisted and then
rolled on the thigh. This was a regular activity of the women. Now, in
order to do that they wore a skirt which allowed them such freedom. They
wore a skirt of cedar bark that was shredded in strands so it could very
easily be pushed aside and the thigh used as a roller in preparing the
nettle bark.

The cedar bark was the mainstay of the household. They used the
cedar bark—now that is the bark under the big heavy bark that we see
on the outside of a cedar tree. When I talk about cedar bark, people
often say how do you do those things with it. Well, you take a whet and
you get the big bark off. Then you strip the bark, which is called the
Cambium layer, off the tree. You dry it. You soak it, then dry it again.
It has to be worked over about six months before you are going to use it.

As man developed culture he became more aware of the foresight that
was necessary to carry on. We can see that in stone tools. The stone
tools that he first used were made of flint and flint can be chipped very
easily and very quickly. If he saw a herd of wild animals coming that
he wanted, he could stop and make some arrows and have them done in order
to shoot the animals. We have a French anthropologist who has done a
tremendous amount of work on prehistoric tools, and he said, "Look, if
you are used to making an arrow you can do it so fast." So, then in one
occasion, you see a need, you make something for it and you act upon it.
When you get into the Neolithic Period you grind and polish stone, and if
you were to make a lance it might take your spare time for six months to
do it; in other words, there is planning. When you begin to get agriculture
you have to have planning. When you begin to do anything that needs a
great deal of preparation you have to have the foresight that you need to
do that before a certain time. Now, the only way that man had any calen-
dar was from the migration habits of animals.

There is a very interesting paper which is raising all kinds of
questions and arguments. A man has written that in the painted caves
there are paintings of very realistic animals, you invariably see around
the bottom a few geometric designs. Everybody has been wondering for
years what these designs could possibly mean. This man says they are
signs of time, and that it is the beginning of the calendar. This sounds
good, but people still question it. In many parts of the world where man
lived there were not such impressive seasonal changes to give them an
awareness of the present or the past. The awareness of time is really a
very important culture feature, and you find places where time does not
have the meaning it has to us. For instance, I have been working with
the Eskimo in recent years and really they have no sense of the past.
If you ask an Eskimo when something happened he will say, "Oh, not today."
They figure it by when someone came. If you try to find out how long they
lived in a certain place, they will say their grandfathers lived here, and
they knew grandfather. Grandfather is about as far back as they know.
I have both Eskimos and indians in my classes. The indians are very dif-
ferent. They know their ancestry for many generations, they keep a family
tree. The attitude is totally different. I asked them once in class to

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write something about their ancestors and the Tlingit Indians were just elated. They would write you a ten page paper right away quick. The Eskimos just sat there, not knowing what to say. This is really a very startling thing when you see it right there in your classroom.

I really hadn't intended to go on so much on this matter of the past, but I do want to tell you some more about the cedar and the use of cedar for clothing because we never associated the cedar tree with clothing. The cedar tree actually supplied so much material for the lives of the Indians of the Northwest Coast that it should have a memorial to it. They use the cedar tree from the root to the very little buds you get on the tree. They have a very tiny little bud which looks like a tiny cone. They boil that and use the broth for curing colds. The cedar tree roots are used to make baskets. The roots of the cedar tree are tremendous in length; ten to fifteen feet long and of course they taper. You can only use a section in between the very tapered end and the tough end near the tree. It has to be gotten in a certain season of the year. Again, we have here the beginning of foresight, the beginning of planning things. Usually the cedar trees grow away from the village itself. I asked a number of Piute women why they don't make more baskets today, and they say around Seattle we have no cedar trees. They can't afford to go far enough away to find cedar trees. If they find any cedar trees they are apt to be in a National Forest and they are not allowed to work on them, so they have a very hard time getting material. In California you have the root of the Redwood, which is the base of the basketry. You come into the region here and all the way up to the Frazier River you have the Cedar tree which is the basis for the basketry. When you go further up into Alaska you have the Spruce tree; there were those three great conifers for basketry.

The cedar bark that they strip off the tree is taken home and soaked in salt water and a great deal of preparation is made for it. Then they finally slit it and cut into the strips used to make mats. They make the mats that they sleep on. They make the mats that they cover themselves with. When they have a feast they make mats about 25 feet long and lay that on the floor of the house to serve the food on like a tray. Now just for a meal they will have the cedar bark mat on the floor. They will have a dish that may be cut from the cedar wood. They will have spoons that are made of Alder to serve with.

These people have no plates, but they have spoons of various sizes. You have a big spoon as a ladle, you serve onto a spoon that is about as big as my hand. It has a handle on it with a bowl. You eat with a small spoon off the next size spoon. People always ask me what kind of plates the Indians used so they can get some. I say, "Well, they don't have any," and they ask if they ate with their fingers. They did eat with their fingers, but they also eat with those spoons. For a woman to have sets, not one set, but a number of sets with 60 spoons each was not extraordinary. To this day they have things in great proportions. There was an old woman on the reservation who said to me, "You know, I finally have enough plates, cups, saucers, spoons, forks, and knives to serve 250 people." She had big bushel baskets standing in her garage, as they had just had a wedding of one of the daughters. Somehow 60 became a number, 60 spoons is a set,
and when you feed 250 people, as they did at the smaller feasts, you really need a lot of spoons. They worked in large numbers like that because, you see, whole villages want to visit other villages, and the feasts were tremendous things. The figure you can see upstairs, lying on its back, (about 12 feet long) is the bowl that they served the food in. While these feasts were going on, the men would go out fishing early in the morning and they would bring in fish as their share, instead of a present for the host. They would bring in a canoe full, nothing less than a canoe full could be presented.

I can't begin to express to you the proportions in which these people lived and worked, and the proportions which they felt were necessary. This was something which was very very difficult when the white people first came among them. The representatives of the Hudson Bay Company, all Scotsmen, who turned a coin over both ways before they spent it; they were the ones who had to deal with these masses of things. If the white men were to offer them one fish for a feast you can see how ridiculous the indians would have thought that was. There is one name which has been given to the people of the Northwest Coast which I think is very true. It is in a book which isn't much good for anything else, but it did invent this one name, they called them the Capitalist of Indian America, and that is really a very good term for them. They capitalized tremendously on what they could get out of the natural environment because they had no agriculture.

They used the environment very carefully. They knew that the animals would not come back if they did not do certain ceremonies for them. They were very particular about it. When the first Salmon came in the spring they had the First Salmon Ceremony. It was eaten by only one group in the village, either by the children or by the older people. It was not served as a general thing, but was served in a ceremonial way. The people came down to the water; wadded out into the water with their rattles and sang. They said, "Swimmers we are glad to see you back. Go back to your place and tell them we are treating you well and have more come." This kind of procedure went on and still does today in some of the villages on the north end of Vancouver Island. The Salmon Ceremony was carried on along the entire coast from Northern California all the way up to Alaska.

There was a great respect for the animals, and they never killed more animals than they needed. They never wasted anything from an animal they killed. If they didn't use all of an animal to eat, they used it for decoration. They knew every bit of an animal's anatomy. There are some Chevists used on the masks of the Eskimo which are very thin, fine little feathers that come from under the tail of the "Auk." You have to examine a bird very carefully to find that particular thing. They used the crest of the Crested Auklet, which is very much like the little crest on the Quail. They use the crest to sew in the water tight seam of their parkas. These parkas were made of seal gut. The intestines were taken, split, cleaned, dressed until they became transluscent, almost like plastic. These were made into water tight garments. The parkas were so water tight that a man could get into a kayak, fasten the end of his parka into the round hatch with a wooden ring put over his head, and he could then turn over in the kayak and wouldn't get wet. The seams are really beautiful.
things. Jacqueline Antoven has done a very nice book of stitchery and she and I worked out this water proof seam. It is when you look at these things that you begin to appreciate native life, what they knew, and that everybody knew it. There were no experts in only one thing.

Coming back to the cedar bark. The way they chop it is very interesting. They lay it over the sharp edge of a paddle and chop it. It doesn't break, it only gets soft. It is so soft that they use it in the cradle, they use it for diapers, they use it for towels. If you think we are very modern, at the end of a meal (feast meal) the young men of the household go around with a wooden box of water and a couple of the cedar bark towels and hand them to each person. Instead of having individual finger bowls they have one for each row of guests. You can take this culture and analyze it bit for bit. The early explorers saw many of these things and they said, "They do it with other kinds of material, but they do it exactly the way we do at home." This amazed them very much.

There was one young man with Captain Gray, who was really the most critical and analytical person you ever came across. At the age of 26 he had been around the world three times. That was rather unusual in the 1790's. He had been at a banquet the Spaniards gave for the Americans and British, at Nootka Sound. This banquet took place on a Spanish ship, and he said, "They served us on silver plates." This amazed the farm boy from somewhere around Boston very much. He said, "They took them all away after one course, brought a new set and piled the used ones up in the corner as they didn't have a chance to wash them." He was very particular to show how many plates they had, and they were all silver plates. Well, you see, those poor Spaniards had nothing else to make their plates of. If they had made them of pewter as the boy was used to seeing, he would not have been surprised, but the silver really surprised him. All the Spaniards who came to the Northwest came from Mexico where silver was the cheapest metal they could find, so that was what they made their plates of. You should read the diaries of the early explorers. They are choice. They are wonderful, and if you want some entertainment read them. They came in ships and this was the difference between their expeditions and people like Lewis and Clark who had to carry everything over land. It was a very interesting difference.

Now I would like to show you some slides; I have a confession to make, I had three little boxes of slides with me in Sitka, and to put it mildly I left Sitka in a great hurry, my class was over at 12:00 and my plane left at 1:30, but I had made some preparation ahead of time. I picked up the wrong little boxes, and so the slides I am going to show you, though they will have some relationship with what I am talking about, won't be the ones that I really wanted to use.

First, before we see the slides, let me say this about the cedar bark, it made marvelous clothing. One picture that I wanted to show you was of a Nootka woman in 1788, sketched by a Spanish explorer artist. All these expeditions had an artist along with them, and what these men have left us with are simply gems. The woman has on a wrap-around skirt which is made of cedar bark. It is wrapped around, fastened, and tucked under near the front, which goes down and opens with a nice little curve. That meant she could take off the skirt and wear it as a cape. It is a
beautiful double garment. She could wear it as a cape or sleep in it. For the upper garment, she had a little cape which she put on over her head. It was also made of cedar bark. It is round and hung down, with a very fashionable gap between the skirt and the cape. If this woman walked down Broadway today no one would turn around and take a second look. They might look if they were interested in the material, but they would not look with surprise at the combination of garments that were a Nootka woman's dress.

The Spanish artist also did a man, who had a bear skin over his back. He carried something in his hand which doesn't show in the picture; either a herring rake or spear with a long handle. He had a little cap on and the bear skin was on his back, tied around the neck, and that was all, his front was completely bare.

The sketches that these Spanish artists made are tremendously interesting. They are doubly interesting because we have enough sketches from all these people that we can tell what was their own idea, and what was actually there. I must say the sketches that needed the greatest imagination were the sketches of the only Frenchman that was on the Northwest Coast. He did some wonderful sketches of women. He liked them rather corpulent, and he put clothing on them, but he put it on in such a way that they couldn't have worn it, as there was no way to keep it up. He has one woman with a very large bosom, wearing a piece of skin, which is a dress. She is sitting and she had this dress out of skin; it had no shoulder straps and there was not elastic back then. We can tell every thing that these people wore, what they ate, how they lived, etc. Cook and his artist went into a Northwest Coast house in 1778, and I can tell every single piece in that room that he sketched. You were right there. It is like going into another century and into another culture. This is the door to see the Northwest as it once was.

Now lets look at the pictures and if we have any time left I will be glad to answer any questions.

Here is an example of painting, a sleeveless shirt made of skin. The painting has all the characteristics that are in the traditions of Northwest Coast art.

Killer Whale - He is in the most graceful position that I have ever seen for a Killer Whale, and then below you have a face that is a rock. The Killer Whale lives on rock and in the pictures of the Killer Whale this rock is always shown. There is always a face on it so you know it is the Killer Whale and his house. This has many of the characteristics of Northwest Coast painting. It shows, for instance, the lines and ribs shown in x-ray. The ribs have been used as decoration because one of the standards of Northwest Coast art is that when you have defined a figure by the outline, you must fill the entire outline. This comes from the Queen Charlotte Islands.

Blanket - This is another blanket tied around the shoulder. The little bit of fur on it is sea otter, for which the early fur traders simply swamped the Northwest. The two images show the characteristics of Northwest Coast painting. The circle that is in the claw of the animal is a joint. They always show any ball and socket joint by putting it in
the form of an eye. Along the sides are sketches that represent the clan to which the individual belongs who owns the blanket. The fringes that are on the back, except for the outside one, are sewn on. They make fringe, cut it, then sew it on.

Use of animal skin - this is another example of the use of an animal skin. The previous one was Caribou, which comes from the interior. The blanket came from the Tlingit who traded with the Indians from the interior. This is a small part of a costume that was worn on the upper Yukon River, and is also of Caribou skin. I showed this because I wanted you to see various forms of decorations. On the fringe there is a line of white that is a wrapping of porcupine quill that has been soaked until it is soft and then wrapped around the fringe. The quill makes the fringe stand out much better than if it were all by itself. This is the lower part of a woman's skirt; the red paint along the edge where there are great beads down the center is to emphasize them. Up above there is again fringe with great beads on the upper part of it. The costume for both men and women included trousers which had the feet attached directly to the trousers. When the moccasin wore out they could put a new sole on them. The decoration is again of porcupine quill. The Eskimos say these costumes are more useful than the old ones because of the V shape in the front and back. When they sit down on the ice they always have something warm to sit on.

Here we have an example of head gear. These are frontlets that sit on the forehead. This is not a mask, but sits on the forehead and goes up above it. It is made of wood. The figure is carved, and inlaid with Abalone, which comes all the way from Monterey, California. It was traded many years before the explorers and fur traders found that they could go down to Monterey in the winter and collect Abalone to use in the summer for very high values in trade. There is a piece of Ermine skin which hangs down the back and is usually sewed onto a piece of canvas. The bristles that stand up above the fabric are the whiskers of a sea lion. The Indians used the whiskers of the sea lion and also of the seal. The whiskers look very translucent almost as if they were made out of plastic. You see a little bit of red feathers, those are the tail feathers of the Flicker, woodpecker. Along the sides you also have pieces of Ermine. The combination of all those materials make a very beautiful hat. Today this hat is called the Friendship Hat because when they have Potlatches, and people come from another place the guests are greeted on the beach by the host and hostess wearing this type of hat. The host and hostess do a dance in which they come toward each other and away from each other. Every time they meet they give the head a very sharp shake, and inside, behind those whiskers there is a little pocket filled with eagle down. The eagle down, with the shake of the head and some wind on the beach, comes out and is a blessing, just like incense.

End of tape.
MINUTES EASTERN REGION BUSINESS MEETING

June 21, 1974

Dr. Amelia Adams called the meeting to order. Eastern Region did not have sufficient members present to conduct a business meeting. She brought the group present up-to-date on pending business. Items which need attention are:

1. Elections
   a. 2 seats to National Executive Board ACPTC to be vacated by Ellen Randolf as of August 1, 1974 and Amelia Adams as of August 1, 1975.
   
   b. 2 seats ERACPTC Executive Board (now termed Council) to be vacated by Amelia Adams and Ellen Randolf.
   
   c. 1 seat Spring Mills Advisory Panel

2. Announcement that Dr. Mary Ann Zentner has withdrawn her name from the list of nominees to the Spring Mills's Advisory Panel. Helen Douty's name will be added in Mary Ann Zentner's place.

Carole Johnson moved that we move into a committee of the whole in order to draw up a slate of nominees. Ellen Randolf seconded the motion. Motion carried.

The following names were suggested. At this time all have not been contacted for permission to include their names on the ballot. Nominations for National Executive Board are: Mary Ann Gaydos (74-7), Kathleen Jones, Barbara Stowe (75-8), Ruth Weibel, Vivian White, Geneva Yadav. Nominations for Eastern Region Council (75-8) are: Eileen Francis, Lois Gurel, Mildred Jamison, Barbara Nordquist, Shirley Thomas, Eleanor Quick. Carole Johnson will serve as chairperson of the nominating committee and will send out and collect the ballot this Fall.

Mary Ann Zentner suggested that we have printed a ream of official ERACPTC letterhead. The group present agreed.

Barbara Stowe reported on the results of the first planning meeting of the Publication Committee. The members are: Lois Gurel, Helen Douty, Eleanor Quick, Darlene Kness, Imogene Ford, Evelyn Stout. Barbara Stowe will serve as advisor from the ER Council and Carole Johnson as Editor. The report is attached to the minutes. Please note the proposed cost estimate is based on four issues. A discussion of funding followed the report.

Mary Ann Gaydos gave the Treasurer's Report:
Income

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Balance as of 1/74</td>
<td>$2,997.03</td>
</tr>
<tr>
<td>Sale of 8 proceedings @ $5</td>
<td>40.00</td>
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<td><strong>TOTAL</strong></td>
<td><strong>$3,037.03</strong></td>
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EXPENDITURES

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Proceedings Boston meeting</td>
<td>726.06</td>
</tr>
<tr>
<td>Planning Meeting ER Publication</td>
<td>383.99</td>
</tr>
<tr>
<td>Travel ER Council Portland meeting</td>
<td>800.00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1,910.05</strong></td>
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</table>

BALANCE  June, 1974  $1,126.98

Discussion followed regarding means by which funds could be secured to augment the budget. It was felt that initially the publication should be free. With a proposed expense of approximately $900 to plan the Atlanta meeting, additional funds will be required. Several possibilities were suggested: increase conference registration cost; sell subscriptions at $5 to colleges, libraries, etc.; submit a proposal to industry for a grant to get the initial publication off the ground; apply to AATCC/AHEA Liason group for Textiles and Clothing research funds; apply to the Kellogg Foundation; solicit contributions from membership. This last suggestion in combination with an appeal to certain companies and AATCC/AHEA group were identified as the most fruitful.

Barbara Stowe then moved that a planning meeting of the Publication Committee established by the ER Council be held pending the securing of necessary funds with the purpose of initiating the proposed publication. Seconded by Oris Glisson. Motion carried.

Meeting adjourned.

Carole C. Johnson,
Secretary
Proposed Publication of the
Eastern Region College Professors of Textiles and Clothing

PURPOSE:
1. To promote communication of professional activity among the members of ERCPTC and others in the profession.
2. To increase the visibility of our profession among related institutions, groups, agencies, trades, and businesses such as:
   a) State and Federal agencies which have regulatory powers over textiles and clothing products.
   b) Consumer protection agencies
   c) Federal and state legislators
   d) Manufacturers and sellers of textiles, clothing and constituent materials
   e) Trade organizations which set standards and write test methods
   f) Departments and boards of education
   g) Funding agencies for research and innovative teaching.
3. To aid in the recruitment of graduate students and faculty.
4. To aid in the placement of graduates.

FORMAT AND CONTENTS:
The publication format most likely to fulfill the above would be a newsletter. The contents would likely include:
1. At least one position paper submitted by an ERCPTC member and/or an editorial.
2. Book reviews and abstracts of current research published or progress reports.
3. Teaching innovations.
4. Sources of funding for research and teaching.
5. Legislative and regulatory agency watch - Eastern region states and the federal government.
6. Notices of and brief reports from meetings and workshops within our profession, but especially notices of such meetings held by institutions, agencies, businesses, etc. which relate directly to our profession.
7. Information on companies or agencies which will publish texts, books of readings, etc.
8. "People News" - professional positions or advisory posts taken by members; honors, awards, etc.
9. Announcements of positions available.
10. Letters to the editor.

EDITORIAL STAFF:
A. Editor
B. Associate editors for research a) textiles
   b) clothing
C. Associate editor for innovative education
D. Associate editor for legislative & other governmental activity
E. Associate editor for news
F. Associate editor for book reviews and abstracts
   Editorial positions will be held for at least two years with a staggered mode of replacement.
PUBLICATION SCHEDULE:

It is suggested that the newsletter be published four times per year. Although all issues would have the same general content each might feature or emphasize topics of interest as follows:

- September - professional meetings
- December - graduate study opportunities
- March - summer schools, tours, positions available
- June - research, significant developments in the profession

It is suggested that the publication begin with the March 1975 session.

CIRCULATION:

1. The newsletter would go to all members of ERCPTC as part of their annual dues.
2. ACPTC members in the Central and Western Regions could receive the newsletter by subscription or as part of their dues if the regions wished to pay a flat fee.
3. Colleges and universities with textiles and clothing curricula could subscribe.
4. At least initially, complementary copies of the newsletter would be sent to individuals or groups such as:
   a) Home Economics Education Departments in colleges and universities.
   c) Trade and Professional Associations - ASTM, AATCC, NRMA, AAMA, Conference Board, CRICAP, SOCAP, etc.
   d) Major publishers and/or publications such as - DNR, WWD, Merchandising Week, major journals in sociology, psychology, business, art and textiles.
   e) Major apparel and textiles manufacturers and retailers - to their main research and marketing officers.
   f) Congressmen from states of the region. Ideally state representatives should receive the publication, if the number is not prohibitive.

PUBLICATION AND COSTS:

A preliminary discussion with Dr. Doris E. Hanson, Executive Director of AHEA, suggested the association could handle publication and mailing of the newsletter for a fee. Exact costs and extent of AHEA involvement will, of course, depend upon format and circulation.

The following rough cost estimates are based on a regional publication using a format similar to the "Association for Consumer Research" newsletter:

Estimate of 4 issues

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
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</thead>
<tbody>
<tr>
<td>4 issues @ 1,500 copies/issue</td>
<td></td>
</tr>
<tr>
<td>Reproduction costs</td>
<td>$1,200.00</td>
</tr>
<tr>
<td>Postage-bulk rate (by permit)</td>
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</tr>
<tr>
<td>Under 2.8 oz. - $.017 each piece</td>
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<tr>
<td>Over 2.8 oz. - $.11/lb.</td>
<td>180.00</td>
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<tr>
<td>Description</td>
<td>Amount</td>
</tr>
<tr>
<td>------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Editors - Secretarial services @ $2.20/hr.</td>
<td>495.00</td>
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<tr>
<td>56 hours service/issue</td>
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<tr>
<td>Postage, paper, stencils, telephone</td>
<td>350.00</td>
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<tr>
<td>$50/editor</td>
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</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$2,225.00</strong></td>
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</table>

**TITLE OF PUBLICATION AND LOGO:**

The committee welcomes suggestions from the membership. A contest among members and/or students for title and logo is another suggestion.
Charlotte Bennett, central region president, called the meeting to order at 4:00 PM.

Minutes of the previous meeting were corrected and approved. (Dates for the 1975 meeting in Lincoln, Nebraska are October 29, 30, and 31.)

The treasurer's report was presented and approved. A summary of the financial statement is as follows:

<table>
<thead>
<tr>
<th>Account</th>
<th>Balance</th>
<th>Date</th>
<th>Revenue</th>
<th>Disbursements</th>
<th>Balance</th>
<th>Date</th>
<th>Revenue</th>
<th>Balance</th>
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</thead>
<tbody>
<tr>
<td>Checking Account</td>
<td>7/25/73</td>
<td>$1,124.31</td>
<td>6,459.38</td>
<td>6,798.74</td>
<td>784.95</td>
<td>6/10/74</td>
<td>87.00</td>
<td>871.95</td>
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<tr>
<td>Savings Account</td>
<td>9/21/73</td>
<td>3,356.28</td>
<td>137.04</td>
<td>1,155.00</td>
<td>4,648.32</td>
<td>6/10/74</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Books were audited by Richard J. Oldfield, CPA, Menomonie, Wisconsin.

Committee Reports

A report of the 1973–74 Nominating Committee was presented by Holly Schrank and new members of the Planning and Advisory Councils were introduced. Members elected by mail ballot are as follows:

<table>
<thead>
<tr>
<th>Election Results</th>
<th>Planning Council (3 year term)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ardis Rewerts</td>
</tr>
<tr>
<td></td>
<td>Maureen Webb</td>
</tr>
<tr>
<td>Advisory Council (1 year term)</td>
<td>Pauline Jarma</td>
</tr>
<tr>
<td></td>
<td>Emma Jordre</td>
</tr>
<tr>
<td></td>
<td>Donice Kelly</td>
</tr>
<tr>
<td>National Executive Board (3 year term)</td>
<td>Marcia Metcalf</td>
</tr>
</tbody>
</table>

107
Springs Mills Advisory Panel (2 year term)
Fern Rennebohm

ACTION REQUESTED
Members were asked for suggestions of ways to get a larger number of Association members more actively involved in Association operations. Suggestions may be directed to Holly Schrank at Michigan State University. Charlotte Bennett expressed gratitude for the fine job on the 1973 Proceedings produced by Kathryn Greenwood and her committee. Both 1972 and 1973 Proceedings are available for $5.00. Checks must be made out to ACPTC-Central (no vouchers, please) and sent directly to the Proceedings chairman (1973, Kathryn Greenwood; 1972, Holly Schrank).

ACTION REQUESTED
Members were asked to check their records for a copy of the 1946 Proceedings of Central region (xerox or original). Frances Coleman offered a 1969 edition. The addition of our 1969 and 1946 Proceedings will complete Central Region's files at AHEA Headquarters and provide us with one full set of conference Proceedings.

The report of the Membership Committee was read and accepted. A membership committee of 19 persons representing the 19 states in the Central Region has been working toward the development of a bank of information relative to ACPTC membership during the past few months. Each membership committee person was supplied with a packet of forms by the membership chairman for distributing to the various clothing and textile units in his or her state. The forms were designed to provide the names of full-time and part-time faculty members teaching in the area of textiles and clothing as well as whether or not they each hold membership in ACPTC.

Committee members in the various states are presently forwarding the completed forms for their respective states to the membership chairman, who is hopeful that all will be received by July 1st. Lists of members as well as potential members will be forwarded to the president for use in carrying out plans for expanding the membership as well as identifying persons for various future committee appointments.

Mary Ellen Roach asked whether textile design faculty were eligible for membership in ACPTC. Charlotte Bennett related the current bylaws statement of eligibility and encouraged members to send names of potential members to Robert Hillestad, Chairman of the Membership Committee, and to encourage potential members to join ACPTC. The Environmental Arts Association (formerly Art in Home Economics) might be one possible contact point.

PROPOSED CHANGES
Lillian Matthews commented on proposed changes in ACPTC bylaws that have implications for our regional bylaws and handbook. Proposed changes will be sent to Association
members later this year and approval will be by mail ballot, as specified by current bylaws. Some of the potential changes include a new system of election of national officers and broader committee structure. Members were urged to consider the implications of changes as they vote.

New Business

ACTION REQUESTED
Charlotte Bennett presented an idea being discussed by the Executive Board regarding ACPTC liaison with other organizations (such as ASTM and ATTCC). Members were asked to send the following information to Mignon Perry:

1. name of organization ACPTC should consider for liaison arrangement.
2. are you a member?
3. do you hold an office or committee position? (name it)
4. would you personally be willing to serve as a liaison person?
5. what are the organization's publications? headquarters address? meeting times and sites?
6. what might be some areas of interface between ACPTC and this organization?

Please send responses to Dr. Mignon Perry, White Hall, Washington State University, Pullman, Washington, 99163.

The practice of rotating meetings between cities and campuses was discussed. Charlotte Bennett explained factors such as the energy crisis, increasing membership, lower campus attendance, and fewer invitations to meet on campuses have initiated reconsideration of the current practice. She also commented on the willingness of hotels to provide "extras" which help to reduce expenses of the conferences. Discussion followed which was favorable to discontinuing campus meetings. The Planning Council will therefore investigate potential meeting sites for 1978, 1979, and 1981 in various central region cities.

Audrey Newton renewed the invitation to the 1975 meeting at Lincoln, Nebraska. Several ideas for the meeting were suggested.

The meeting adjourned at 5:15 PM.

Holly Schrank
Secretary
MINUTES OF WESTERN REGION BUSINESS MEETING

June 21, 1974

Minutes were not submitted, by region secretary by publication date.

Western Region

Cash on Hand and in Checking Account, October 16, 1973 $ 523.92

<table>
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<tr>
<td>97 Active memberships 1973-74</td>
<td>$485.00</td>
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<tr>
<td>2 Retired memberships 1973-74</td>
<td>5.00</td>
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<tr>
<td>3 Grad student memberships 1973-74</td>
<td>7.50</td>
</tr>
<tr>
<td>Interest on Savings Certificates (3)</td>
<td>$500</td>
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<tr>
<td><strong>Total Receipts</strong></td>
<td><strong>545.60</strong></td>
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<tr>
<td><strong>Total Expenditures</strong></td>
<td><strong>768.20</strong></td>
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</table>

Cash on Hand and in Checking Account, June 14, 1974 $1,801.32

Note: There are also three Savings Certificates, 003947 and 004282 purchased previously and 023532 purchased this year. These were purchased through The First Security Bank of Utah, Provo Branch, where we have our checking account.

$1,500.00

$1,801.32
SUMMARY OF MINUTES

National Business Meeting, ACPTC
June 22, 1974

Dr. Mignon Perry, President-Elect of ACPTC, called the meeting to order.

It was voted that the minutes as circulated from the National meeting in Charlotte in 1971 be adopted.

Reports were requested from officers and committees:

The treasurer, Jo Ellen Uptegraft, gave a report of the financial condition of ACPTC and of the estimated budget for 1974-75.

The Nominating Committee report was given by the Committee Chairman Ellen Randolph. The officers and committee members for the coming year were presented as follows:

President-Elect - Charlotte Bennett
Secretary - Carlene Rose
Membership Committee - Mary Ann Zentner, Chairman; Audrey Newton; Janet Bubl
Publications Committee - Mary Jean Wylie, Chairman; Anna Jean Treece; third member to be appointed by Chairman
Liaison Committee - Mignon Perry, Chairman; Vivian White; Naomi Reich
By Laws and Handbook Committee - Amelia Adams, Chairman; Lillian Matthews; Ellen Randolph
Nominating Committee - Jo Ellen Uptegraft, Chairman; Mary Ann Zentner; Audrey Newton; Janet Bubl
Budget Committee - Jo Ellen Uptegraft, Chairman; Mignon Perry; Charlotte Bennett
Liaison with AHEA - Amelia Adams
Evaluation Committee - Myra Timmons
Research Expertise - To be named by the 1974-75 Board
Dr. Anna Jean Treece reported for the publications committee. A triple fold flyer will be developed to inform prospective members of ACPTC of membership opportunities. A tear sheet will be included for response. It was suggested that these be mailed to all colleges. Proceedings of all three regions will be combined and given to all members in 1975. There are no additional plans for implementing at present. Future consideration will be given concerning the continuation of this policy.

It was suggested that the National meeting of ACPTC might in the future be held every two years. Since the Dallas meeting has been set, no immediate plans will be made. A central location might be desirable for all meetings.

Myra Timmons reported plans for the National meeting in Dallas, Texas in 1977. She encouraged a return of all evaluation forms with suggestions from members.

Amelia Adams extended an invitation for the National meeting of 1980 to be held in the Eastern Region.

Ellen Randolph reviewed the By Laws and Handbook revisions. The major changes are: that officers be elected by mail ballot from the membership and that permanent committees be established.

Carlene Rose presented three resolutions as follows:

"Whereas ACPTC has now come of age and whereas the By Laws and Handbook were in need of revision to bring items into line with our present practices and whereas there has been many hours spent in study, evaluation, and interpretation of these documents. Be it resolved that a vote of thanks be extended to the members: Dr. Lillian Matthews, Dr. Virginia Carpenter, and Mrs. Ellen Randolph, Chairman."

"Whereas we have come to the end of another very successful convention and whereas we have had the privilege of becoming involved in programs which have been interesting, informative, and varied in approach and whereas every physical arrangement has been well organized and smoothly carried through and whereas the hospitality of this city could not have been improved and whereas arrangements have been made to have ideal weather in a rose garden city. Be it resolved that Dr. Ruth Gates be given a vote of thanks for all her work and be it further resolved that Dr. Gates be asked to extend our thanks to all members who have worked with her on this Convention."

"Whereas leading an organization made up of members spread across the continental U.S.A., Hawaii, and Canada is an immense undertaking and whereas the success and unity of an organization depends a great deal on its leadership and whereas an organization is often judged by the calibre of its leadership. Be it resolved that a vote of thanks be
extended to our outgoing president, Dr. Amelia Adams for her capable and professional leadership during the 1973-74 fiscal year."

Concern was expressed about the history of ACPTC. A brief history had been included in the 1971 proceedings. It was, however, suggested that names of people, who might have information to include, be given to officers of the Association.

Dr. Virginia V. Carpenter,
Secretary
ASSOCIATION OF COLLEGE PROFESSORS OF TEXTILES AND CLOTHING

National Treasurer's Report

For the fiscal period June 24, 1973 through June 13, 1974

Balance from ACPTC Treasurer - 2/18/74 $4,497.09

INCOME

Dues transmitted from AHEA $4,920.00

TOTAL INCOME AND BALANCE ON HAND 4,920.00

$9,317.09

LESS: EXPENDITURES

Transmittal of dues to AHEA $ 342.30
Bylaws Expenses 22.96
Travel Expenses 1,213.20
President's Expenses 500.00
Contingency Fee (Portland Meeting) 800.00
Estimated Expense For Proceedings (Portland Meeting) 2,000.00
Presidential Mailing to Membership 200.00

TOTAL EXPENDITURES $5,078.46

BALANCE JUNE 20, 1974 $4,238.63

Jo Ellen Uptegrafft
ACPTC, Treasurer
## ASSOCIATION OF COLLEGE PROFESSORS OF TEXTILES AND CLOTHING

### Membership Report
1973-74

<table>
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<th>STATUS</th>
<th>REGION*</th>
<th>TOTALS</th>
<th>GAIN/LOSS</th>
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<td>W</td>
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<tr>
<td>ACTIVE</td>
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<tr>
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**TOTALS**

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* Members outside the continental United States

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<td>4</td>
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</tr>
</tbody>
</table>

**Totals** 3 - 9 12
ACPTC NATIONAL OFFICERS 1973-74

President
Dr. Amelia Adams  
Norfolk State College  
Norfolk, Virginia 23510

Secretary
Dr. Virginia Carpenter  
University of Rhode Island  
Kingston, Rhode Island 02881

President-elect
Dr. Mignon Perry  
Washington State University  
Pullman, Washington 99163

Treasurer
Mrs. Jo Ellen Uptegraft  
University of Oklahoma  
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