National Meeting Proceedings
1980

Association of College Professors
of
Textiles and Clothing, Inc.
ACPTC National Officers, Regional Presidents, and National Meeting Chairmen & Committees

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Hood College

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Virginia Polytechnic Institute and State University

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Howard University

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Evaluation
Maureen Brooks
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ASSOCIATION OF COLLEGE PROFESSORS OF
TEXTILES AND CLOTHING
7th National Meeting-1980
Capital Hilton, Washington, D.C.

PROGRAM

Wednesday, October 29th

9:30 am--3:00 pm National Executive Board Meeting

10:30 --11:30 am Tour of State Department Diplomatic Rooms

12:30 -- 2:30 pm Tour of Smithsonian Institution Collection

3:00 -- 5:00 pm Grants and Services Seminar
  Presiding: Joann Boles, President-Eastern Region
  Moderator: Kitty Dickerson
  Panel Members: Ed Acree--National Institute of Handicapped Research
  Dr. James Blessing--National Endowment for the Humanities
  Burt Kubli--Design Arts Program, National Endowment for the Arts
  Ritchie Coryell--Program Manager; Applied Earth Sciences,
  Division of Applied Research, National Science Foundation.

6:00 -- 8:00 pm Regional Council Meetings

8:00 --10:00 pm Hospitality Hour

Thursday, October 30th

9:00 am -12:00 noon "Textiles and Apparel in the 1980s"
  Presiding: Joan Laughlin, President-Central Region
  "The International Scene"--Robert Pennell, Director, International
  Business Intelligence, Monsanto Textiles Company
  "Fibers"--Jack W. Goldstone, Director of Marketing Research and
  Services, Allied Chemical Fibers & Plastics Company
  "Apparel"--Dr. Richard H. Sines, Chief Economist, American Apparel
  Manufacturers Association
  "Home Furnishings"--Marshall Doswell, Vice President-Corporate
  Communications, Springs Mills, Inc.

12 noon -- 2:00 pm "The Role of Government in Textiles and Apparel in the 1980s"
  Presiding: Marilyn Horn, President-Western Region
  Speaker: Paul T. O'Day, Deputy Assistant Secretary for Textiles
  and Apparel, U.S. Department of Commerce

2:00 -- 3:00 pm Regional Business Meetings

3:00 -- 4:00 pm Research Reporting Sessions

  General Interest (Education/Construction/Design)
  Presiding: Rachel Dardis
  "Pants Alteration by Graphic Somatometry Techniques"
  Carol Pouliot and Jane A. Farrell
  "An Engineered Method for Fitting Garments to Problem Figures"
  Helen I. Douty and Judith E. Ziegler
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Presiding: Carolyn Callis
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  Jane Lowry Swinney and Geitel Winakor

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Presiding: Rosalie King
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  Theresa A. Perenich and Leslie Fately
"Consumer Response to the Tris Controversy"
  Carol Avery and Linda Eppich

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Ira Block and Marcy Finkel
"Thermal Comfort Characteristics of Textile Apparel Fabrics"
Kay S. Grise and B. C. Goswami

Friday, October 31st

8:30 -- 9:00 am "New Perspectives on the History of Western Dress"
(Project funded by National Endowment for the Humanities)
Presiding: Barbara Densmore, National Secretary
Frances Duffield, Auburn University
Mary E. Roach Higgins, University of Wisconsin
Saul Schur, Grant Administrator

9:00 -- 10:00 am "Huari Textiles"
Anne Rowe, Curator of South American Textiles, Textile Museum*

10:30 am--12:00 noon "Some Thoughts on Textile Conservation"--Kathryn Dirks, Smithsonian Textiles Division
"Management Problems of Textiles and Costume Collections in the Small Museum"--Jean Taylor Federico, Curator, DAR Museum
"An Asian Perspective" (film and fashion show)--Mitsinoro Namba, Third Secretary of the Japanese Embassy, presiding

12 noon -- 2:00 pm Presiding: Jo Ellen Uptegraft, National Treasurer
Remarks: Claudia Kidwell, chairman, Department of Social and National History, Smithsonian Institution*

2:00 -- 3:00 pm National Business Meeting
Presiding: Marjory Joseph, National President

3:00 -- 4:00 pm Research Reporting Sessions
Consumer Economics
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Susan B. Hester and Kitty G. Dickerson
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Nancy C. Saltford and Cheryl Ostroski

*Text of talks not available for Proceedings
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Sharon Holder Hinchey and Lavonne Mattern
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"Liquid Ammonia Treatment of Viscose Fabric: Effects on Physical
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Lenore Basche Cheek
"Measurement of Pesticide Penetration of Selected Fabrics"
Jacquelyn Orlando and Donna Branson

6:30 -- 7:30 pm
Exhibits open for "What's New With You"

7:30 -- 10:00 pm "What's New With You"
Presiding: Ardis Koester, Leatha Darden
"The Organization of the National Consortium for Computer-Based
Education in Home Economics"
Frances Mayhew
"The Blue Jean Thing"
Marcia A. Morgado
"Educational Assistance for Apparel Shop Entrepreneurs"
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Susan M. Watkins
"What Do You Wear to an Energy Crisis?"
Carol Avery and Donna Pettigrew

10:00 -- 11:00 pm Exhibits remain open

Saturday, November 1

9:00 -- 10:45 am Presiding: Lois E. Dickey, President-elect
"Internship/Work Experience Programs" Panel Discussion:
Moderator: Betty Smith
Barbara S. Stowe - Michigan State University
Kathryn M. Greenwood - Oklahoma State University
Jacqueline Marro - University of Maryland
Mary Barry - Auburn University
Joseph C. Culver, Divisional Vice President, Human Resources
Woodward and Lothrop

11:15 am -- 12:15 pm "Retailing in the 1980s"
William McDonald, Vice President for Marketing, Woodward and Lothrop

1:00 -- 3:00 pm Regional Council Meetings
2:00 -- 3:00 pm Tour of Textile Museum
3:00 -- 5:00 pm National Executive Board Meeting

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Textiles and Apparel in the 1980s

Current and Future Developments in International Trade and Marketing of Textile Products

R.E. Pennell
Director, International Business Intelligence
Monsanto Textiles Company

In keeping with the general theme of "Textiles in the 1980s," it was suggested that my topic be "Current and Future Developments in International Trade and Marketing of Textile Products." I readily accepted, recognizing that the suggested topic provided sufficient scope for me to expound on almost any textiles-related theme one could imagine. I say that, not really in a flippant way at all, because in recent years literally every aspect of the textile industry has become international in dimension—raw materials, fiber production, distribution, manufacture of fabric and finished articles, governmental policy, trade agreements, economics, and labor relations have all become elements of geopolitics.

Since I have only 30 minutes for my portion of the program, I will limit my subject matter to fiber production, distribution and economics, trusting that my fellow speakers will treat many of the other important dimensions.

We will discuss the production and consumption of textile fibers across the world, both from an historical and probable future viewpoint. We will try to suggest the underlying forces at work which have, or will, cause change. Specifically, we will focus on:

- geographic consumption
- generic fiber types
- international trade in fibers
- economics

as highly-leveraged factors affecting availability and consumption of textile fibers.

Figure 1 summarizes the current situation. It deals in averages, and like most averages obscures many important details. It is correct in that it portrays world fiber consumption as slightly less than 16 pounds per person, but it fails to characterize the large deviations about this average.

1980

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Population</td>
<td>4.4 billion</td>
</tr>
<tr>
<td>Fiber Consumption</td>
<td>68.4 billion pounds</td>
</tr>
<tr>
<td>Consumption per Capita</td>
<td>15.6 pounds/person</td>
</tr>
</tbody>
</table>

Fig. 1

Figure 2 gives a more useful portrayal. Here the light bars show per capita consumption by world area, while the dark bars show the absolute pounds consumed. From this we can understand that the developed nations
(we are defining these as the U.S., Western Europe, and Japan for simplicity) consume about four times as much as the rest of the world on a per capita basis, yet represent only about 43 percent of all consumption. How and why has this changed over time?

The question of how consumption has changed is answered by Figure 3. The developed world consumed half of all fibers used in 1960. They have lost ground against the rest of the world in spite of substantial growth in per capita consumption because the underdeveloped world population growth has been approximately three times as fast, and they also have been increasing their per capita consumption. Overall the per capita consump-
tion, worldwide, has almost doubled since 1950. The explanation for this is shown in Figure 4, borrowed from Special Report No. 63 (Economist Intelligence Unit Ltd.) entitled "World Textile Trade and Production" by Vincent Cable.

Figure 4 shows that all of the developed nations fall on the upper right hand end of the data points. Clearly this shows a strong relation between per capita income and per capita fiber consumption. Specifically, the relation developed from this data is that for each doubling of real income, fiber consumption would increase by 60 percent. Much of the past growth of fiber consumption, then, has been related to per capita increases driven by gains in real income across the world.

If we disaggregate the past 20 years of fiber consumption growth into its components, (Figure 5), we see that about one-third is due to world population increase, while two-thirds is due to per capita increases. Note, however, that 65 percent of all growth came from underdeveloped world areas.
FIBER CONSUMPTION GROWTH SEGMENTS
1960-1980
Billion Lbs.

GROWTH DUE TO:

<table>
<thead>
<tr>
<th>AREA</th>
<th>TOTAL GROWTH</th>
<th>POPULATION INC.</th>
<th>PER CAPITA USE INC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>6.0</td>
<td>1.5</td>
<td>4.5</td>
</tr>
<tr>
<td>W. Europe</td>
<td>4.3</td>
<td>0.9</td>
<td>3.4</td>
</tr>
<tr>
<td>Japan</td>
<td>2.2</td>
<td>0.9</td>
<td>1.3</td>
</tr>
<tr>
<td>ROW</td>
<td>22.8</td>
<td>8.3</td>
<td>14.5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>35.3</td>
<td>11.6</td>
<td>23.7</td>
</tr>
</tbody>
</table>

Fig. 5

What is going to happen in the next 10 years? Let's begin by saying that consumers in the developed world have traditionally allocated seven to eight percent of their disposable income for clothing, which is the largest fiber use. Escalating petroleum costs may cause them to change this allocation, but we have limited data and are therefore unsure about it. One thing is quite certain; textile goods have been vastly more inflation resistant in the past decade than they will be in the next. Clothing prices have inflated only about one-half as fast as overall inflation rates during the seventies, and most textile fiber prices have not inflated at all. One major producer's composite fiber price index recently rose back to 100—the level of 1967. This simply cannot continue.

Because we believe the likelihood of more rapid escalation of textile goods prices, and spending dislocations driven by petroleum effects may be significant, we are projecting very limited growth in per capita consumption among developed nations. Certainly, this implies a break with the earlier statistic relating textile consumption with real income growth, but per capita consumption must reach a practical maximum at some level, and this forecast reflects our opinion that for the developed nations that level is close at hand.

Figure 6 shows our estimate of world fiber consumption in 1990. The average annual growth will be 2.5 percent. We expect the developed nations to consume about 38 percent of the 88 billion pounds of fiber used in 1990, while the less developed world will use 62 percent.
The developed world will average 46 pounds per person while the rest of the world will use only 12 pounds. This may seem small, but let's remember that it was less than 7 pounds in 1960. Putting it together in the same way we looked at growth between 1960 and 1980, we see that growth over the next 10 years will be controlled more by population (53%) than by per capita increases (47%) (Figure 7). The demand increase will be even more concentrated in the less developed world, as they contribute 75 percent of the increase.

FIBER CONSUMPTION GROWTH SEGMENTS
1980-1990

<table>
<thead>
<tr>
<th>AREA</th>
<th>TOTAL GROWTH</th>
<th>POPULATION INC.</th>
<th>PER CAPITA USE INC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>2.0</td>
<td>1.1</td>
<td>0.9</td>
</tr>
<tr>
<td>W. Europe</td>
<td>1.7</td>
<td>0.3</td>
<td>1.4</td>
</tr>
<tr>
<td>Japan</td>
<td>0.7</td>
<td>0.4</td>
<td>0.3</td>
</tr>
<tr>
<td>ROW</td>
<td>14.7</td>
<td>8.4</td>
<td>6.3</td>
</tr>
<tr>
<td>TOTAL</td>
<td>19.1</td>
<td>10.2</td>
<td>8.9</td>
</tr>
</tbody>
</table>

Fig. 7

Now let's talk about the kind of fibers that have been used and will be used in the future. Let's begin by making sure my terminology is clear. Figure 8 shows that man-made includes both cellulosic and non-cellulosic fibers. It also serves to remind us that the terms non-cellulosic and synthetic can be used interchangeably. The first three synthetics listed constitute the overwhelming majority of consumption of that group, which also includes spandex, aramid, and a variety of other specialty fibers.

FIBER TERMINOLOGY

NATURAL FIBERS:
- cotton
- wool
- silk, jute, flax

MAN-MADE FIBERS:

CELLULOSICS
- rayon
- acetate

NON-CELLULOSICS (SYNTHETIC)
- acrylic
- nylon
- polyester
- olefins
- glass
- other synthetics

Fig. 8
Figure 9 shows total fiber consumption, history and forecast, as well as the amount of synthetic fibers within the total. In the 1970's total consumption grew at a compound rate of 3.3 percent per year. Within this overall average, synthetic fibers grew at an 8.3 percent rate, while natural fibers (mostly cotton) grew about 1.6 percent per year, and cellulosic fiber declined slowly. The forecast you see for 1990 implies a continuing growth rate for natural fibers of 1.6 percent, no growth for cellulosics, and a halving of the previous synthetic growth rate to 4.2 percent per year.

![Graph showing fiber consumption history and forecast](image)

If we look at this time evolving picture on a pie chart basis we see the following:

![Pie charts showing fiber consumption for different years](image)
We expect that by 1990 world consumption of synthetic fibers will equal that of natural fibers and exceed that of cotton alone. Examining this changing fiber mix over time on a per capita basis shows that over the past 20 years synthetics have taken all the growth in fiber consumption—and more. As Figure 11 shows, we expect this to continue.

You may well ask why this is a credible forecast given the world oil situation and future outlook. The answer has three parts. First, you must understand that synthetic fiber production requires only a very small fraction of all the crude oil used, about 1 percent in the United States and perhaps slightly more in other world areas where auto and other industrial consumption is lower. The 1 percent is split about equally between petrochemicals used as fiber raw materials and energy needed to manufacture the fibers. We believe this argues convincingly for continued availability of petroleum supplies, especially considering the further fact that over the life of a garment, synthetic fiber articles consume less total energy than natural fiber garments.

Second, synthetic fibers impart a value in use unmatched by other fibers. Durability, wrinkle resistance, and ease of care are the most notable of these. Synthetic fibers are so commonplace in our lifestyle today we take their benefits for granted. But this was not the case just 30 short years ago—nor is it the case for over 3 billion of this planet's population even today. How long has it been since you rode in a car with cotton or rayon reinforced tires? How long since you bought a bedsheet that needed ironing before going back on the bed? When did you last see a pair of silk stockings—and are you sure you could recognize them if you did? How much of our floors would be carpeted if we had to pay the price of wool carpeting?

The third part of my answer takes a rather different tack. Simply put—it says "There's no better than a very slim chance that the per capita con-
sumption of cotton which is 90+ percent of all natural fibers can grow at all." According to a 1978 study by A. D. Little, Inc., the theoretical maximum world cotton production is just under 100 million bales or 47 billion pounds. Considering the disruptive potential of weather conditions and economic pressures for food production, we believe our 1990 forecast of 37 billion pounds, or 80 percent of the theoretical, may represent a practical maximum. There is simply no other realistic alternative to synthetic fibers to meet the world's needs of the next decade.

As you might expect, the per capita consumption of different fibers varies across the world in much the same way as overall fiber consumption does. Figure 12 describes the current situation as we estimate it.

![Graph](image)

Note the extremely low use of synthetics in the underdeveloped nations. Primarily, this is the result of the fact that synthetic fiber production is a high technology industry. Most developing countries have had neither high technology nor the industrial infrastructure to implement it. This fact represents a major obstacle for developing nations to overcome in meeting their societies' needs. For many nations, people are the most available, lowest cost, national resource. As these nations have struggled to create jobs, and grow their industrial base, cheap labor has been used as an instrument of national policy--a policy focused heavily on generating hard currency to fuel the industrialization program.

One of the most effective ways to use cheap labor is in the textiles area, and we have seen first Japan and then others follow a progression that has now become familiar. Cheap labor is first used to make low cost, low quality labor-intensive goods, especially textile goods. Later, as the education, skill, and affluence of the work force progress upward, emphasis is shifted to production of greater value-added, better quality goods. Finally, the step is taken to back integrate into fiber production, the most technical and investment heavy, but least labor-intensive portion of the industry.

In today's world, fiber production is concentrated in the developed nations, but textiles production in the rest of the world exceeds fiber availability. This dichotomy is the underlying basis for a very large interna-
tional trade in man-made fibers today. Figure 13 gives an estimate of the 1980 situation. As you see, the developed nations ship about 2.4 billion pounds (about 15 percent of their production) to the developing countries. You are probably aware that international trade in garments and other finished textile articles occurs in the reverse direction and is the subject of considerable controversy at the highest government levels here and in Europe. I will not open that can of worms on this occasion, since I'm sure that others on the program are closer and more informed in this area.

<table>
<thead>
<tr>
<th>MAN-MADE FIBERS</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>(Ex-Olefin &amp; Glass)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>World Trade</td>
<td>1980</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>$\text{Lbs.}$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EXPORTS</th>
<th>IMPORTS</th>
<th>NET EXPORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>1.3</td>
<td>0.1</td>
</tr>
<tr>
<td>W. Europe</td>
<td>0.6</td>
<td>0.2</td>
</tr>
<tr>
<td>Japan</td>
<td>1.0</td>
<td>0.1</td>
</tr>
<tr>
<td>ROW</td>
<td>0.9</td>
<td>3.4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>3.8</td>
<td>3.8</td>
</tr>
</tbody>
</table>

Fig. 13

Looking only at the principal synthetic fibers--acrylic, nylon, and polyester, we estimate world production this year at about 23 billion pounds. This will approximate 80 percent of available world capacity. At the present time the U.S. is the dominant producer as our technology and world scale plants afford us an economic edge. Even our European competitors who are angered by the U.S. government regulation of some oil prices will concede our greater efficiency (Figure 14).

<table>
<thead>
<tr>
<th>PRINCIPAL SYNTHETICS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(Acrylic/Nylon/Polyester)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Billion Lbs.</td>
<td>1980</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PRODUCTION</th>
<th>% CAPACITY</th>
<th>CAPACITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>7.6</td>
<td>87</td>
</tr>
<tr>
<td>W. Europe</td>
<td>5.2</td>
<td>70</td>
</tr>
<tr>
<td>Japan</td>
<td>2.9</td>
<td>94</td>
</tr>
<tr>
<td>ROW</td>
<td>7.4</td>
<td>79</td>
</tr>
<tr>
<td>TOTAL</td>
<td>23.1</td>
<td>81</td>
</tr>
</tbody>
</table>

Fig. 14

However, as we look into the future, we expect the pressures of population growth, nationalism, and the need to create jobs and acquire hard currency will stimulate the developing countries to strive for greater self sufficiency in fibers production. Our forecast for usage of these
fibers will require about 9 billion pounds of new capacity in the next
decade--nearly 1 billion pounds per year. This assumes that all capacity
is operated at its practical maximum of 92 percent of design. Figure 15
suggests that as much as 60 percent of that new capacity may be built in
the underdeveloped world.

<table>
<thead>
<tr>
<th>PRINCIPAL SYNTHETICS</th>
<th>(Acrylic/Nylon/Polyester)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BILLION LBS.</td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>7.6</td>
</tr>
<tr>
<td>W. Europe</td>
<td>5.2</td>
</tr>
<tr>
<td>Japan</td>
<td>2.9</td>
</tr>
<tr>
<td>ROW</td>
<td>7.4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>23.1</td>
</tr>
<tr>
<td>USA</td>
<td>9.8</td>
</tr>
<tr>
<td>W. Europe</td>
<td>7.1</td>
</tr>
<tr>
<td>Japan</td>
<td>3.8</td>
</tr>
<tr>
<td>ROW</td>
<td>13.8</td>
</tr>
<tr>
<td>TOTAL</td>
<td>34.5</td>
</tr>
</tbody>
</table>

Fig. 15

Before I conclude, let me return for a moment to an earlier point. The
U.S. fiber industry suffered a catastrophic shock in 1974. The period since
has been marked by dramatically higher raw material prices, galloping infla-
tion in other costs, and chronic excess capacity as demand growth slowed
while previously committed capacity additions came on-stream. The result has
been severely depressed prices and a literally incredible profit squeeze.
Consequently, no new fiber capacity has been needed, nor is it likely any
will be authorized in the future, until reasonable profit margins are re-
stored.

Figure 16 illustrates the point. According to data supplied the Man-Made
Fiber Producers Association, 1979 production of fibers generated sales of
$8.5 billion--about 99¢ for every pound of fiber produced. The industry
provided employment for about 90,000 people and paid them $1.9 billion in-
cluding the cost of fringe benefits, pension and insurance plans, etc. My
own estimate of what was left of the $8.5 billion after paying $4.8 billion
for raw materials and energy, plus additional amounts for supplies, labora-
tory equipment, etc. is that it would represent a six or seven percent return
before income taxes on the nearly $9 billion of investment used by the in-
dustry. With no risk government bonds yielding 10 to 11 percent last year,
many of you probably did a great deal better than the fiber producers. It
also is worth noting that last year's profits related to the inflated capi-
tal cost of building a new fiber plant would look even more dismal at 3
to 4 percent, again on a before tax basis. Without question fiber prices must increase, and increase faster than costs escalate.

U.S. MAN-MADE FIBERS
1979
Billions

*Production 8.6 Pounds
*Sales Value $8.5
*Raw Material, Energy Costs $4.8
*Labor Cost $1.9
*Plant Investment $8.9

Estimated Pre-Tax Return on:
- Invested Capital 6-7%
- Reinvestment Capital 3-4%

*Data Source: Man-Made Fiber Producers Assoc.

Fig. 16

One additional perspective on this point: Very few garments or square yards of carpet have more than four pounds of fiber in them. At last year's fiber price of 99¢/lb., literally everything you bought had less than $4 of fiber value in it.

Looking broadly at the stream of values as materials move through the textile industry to the consumer, we estimate the following percentage breakdown.

U.S. CLOTHING

<table>
<thead>
<tr>
<th>Value added:</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Raw Materials</td>
<td>3</td>
</tr>
<tr>
<td>Value added:</td>
<td></td>
</tr>
<tr>
<td>Fiber Production</td>
<td>3</td>
</tr>
<tr>
<td>Fabric Production</td>
<td>6</td>
</tr>
<tr>
<td>Garment Production</td>
<td>38</td>
</tr>
<tr>
<td>Retail Distribution</td>
<td>50</td>
</tr>
<tr>
<td>Final Sales Volume</td>
<td>100</td>
</tr>
</tbody>
</table>

Fig. 17

Basic raw material and energy costs are about 3 percent of the retail garment price, while the value added—that is costs plus profits—are concentrated in the last two steps in the distribution chain. In general, fiber price represents only about 5 to 8 percent of the retail garment price. Perhaps some of the other speakers will have something to say about that.

To sum up, we foresee a slowing pace of growth in per capita fiber consumption, but the spur of 800 million additional people over the next 10
years will combine to increase world fiber consumption by 19 billion pounds to a level of 88 billion. Within this overall growth we expect 75 percent of it to occur in the developing countries. We also expect 75 percent of the growth to be fibers of the synthetic family. The growth of synthetic fiber demand will create a need for new capacity of about 9 billion pounds per year, and two-thirds of that capacity will be needed to supply the developing nations. How much of that capacity will actually be constructed in developing countries and how much the developed world, especially the United States, will supply out of additions to their existing, efficient, world-scale plants is yet to be determined. The manner in which that issue is resolved could have major implications for the U.S. fiber producing industry, the U.S. textile and garment industries, and for American consumers.

WORLD FIBER CONSUMPTION GROWTH
1980-1990
Billion Pounds

<table>
<thead>
<tr>
<th>U.S./Europe/Japan</th>
<th>SYNTHETIC FIBER</th>
<th>OTHER FIBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Rest of World</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Total Growth</td>
<td>19</td>
<td></td>
</tr>
</tbody>
</table>

Fig. 18

The willingness of American fiber producers to increasingly participate in international fiber trade is critically linked to their perception of profit opportunities. Therefore, it is our opinion that the two most critical issues facing the U.S. fiber and textile industry in the 1980's are:

1. to restore profit margins permitting reinvestment to meet future domestic demand, and

2. to define their appropriate role in international textile trade.

The Next 10 Years for Fibers

Jack W. Goldstone
Director of Marketing Research and Services
Allied Chemical Fibers & Plastics Co.

The subject of my talk today "Current and Future Developments in Fibers" requires no visionary. All the forces that change and determine the new profile of our industry are already in place. It wasn't really that long ago that noncellulosics invaded the marketplace with superior characteristics for specific end uses, such as women's hosiery and linge-rie fabrics. The chemist of that period might have felt that the building of a better mousetrap was all that was required for an assured commercial success. He didn't reckon with the maturing of a new breed of mice which refuse to fall for the old bait. A plethora of polymers
were spun and tested. The survivors had found their niche. Let me
tell you now--the niche isn't secure.

Today we face a consumer who is more affluent, more demanding, and
more selective than ever before. In the past growth in our industry
was fueled by a number of factors, including: (1) increase in popula-
tion, (2) greater consumer affluence, (3) penetration of man-made fibers
into natural fiber markets, and (4) new fiber applications.

What do we see today? We are predicting that:

• the population will continue to increase at a modest rate since
births will go up slightly and immigration, both legal and illegal will
continue;
• affluence will continue to expand to more persons in our society,
but at a modest pace;
• the squeeze on natural fibers cannot continue at its previous
rate, mainly because saturation levels are beginning to be reached
(nylon already has over 80% of the carpet market and synthetics make
up most of the other 20%);
• new fiber applications are occurring all the time, especially in
high performance industrial applications.

First, I'll expand on the concept that we are dealing with a more
sophisticated consumer. More of the same and cheaper is no longer suf-
ficient rationale for the successful man-made fiber producer. Consumers
demand more. They want quality, value, style, and variety, the four
horsemen of survival. We need only look at the refocusing of Japanese
effort after World War II. "Made in Japan" was synonymous with shoddy
merchandise. Today, Japanese textiles show an awareness of international
consumer demand. Consider Japanese cameras and electronics. They work
well, look good, and have high value. American industry must learn this
lesson. Today U.S. automobiles go through more predesign checks and
post-manufacturing tests than ever thought necessary only five years ago.

In the textile industry, such things as fading will not be accept-
able, even if the item is colored blue and hanging in the sun. Seams
must stand up to the active user and to washing machines. Today's car-
pets are a far cry from those of the early 60s. In those days bulked
continuous nylon made a valiant attempt to look natural sitting there
on the floor, skinny and shiney. Today only an expert can tell nylon
carpeting from wool. Upholstery also is becoming more durable.

Man-made fibers are high quality products in themselves. But it's
only in relatively recent times that suppliers have been concerned with
the quality of the end product as well as the fiber. For example, fiber
guarantee programs require extensive fabric and garment testing to qualify
for the guarantee and label. There will be more of this at all levels,
even if it's only the result of commercial Darwinism. The quality
houses will survive.

Value, our second consumer demand, at first blush seems an obvious
requirement. After all, value is always assumed in a competitive envi-
nronment. But, the sophisticated consumer shops wisely. Disposability,
 obsolescence, quick replacement--catch words from our lifestyle of only
10 years ago--are unacceptable now. We will settle for longer fashion
cycles, durable products, such as no fray collars and cuffs (which we
already have), 15-year-life carpets and 45,000-mile tires. We are
slowly becoming a conserving society and man-made fibers are meeting this
demand for durability.
The greatest advances in durability will occur in industrial fibers. Tomorrow's radial tires will last as long as the car in addition to helping conserve fuel. Synthetic yarn can be made into carpets that will last as long as you want them to.

It is in apparel where improvements in fiber value can be realized. Although the forecast that cotton's popularity will steadily erode appears unassailable, there is no denying the superiority of cotton's aesthetics. If this quality can be duplicated while keeping the economy, durability, and maintenance ease of synthetics, one would have the best of all possible fabrics. An exact replication of cotton comfort hasn't been accomplished yet but it is clear that we are only a few years away.

Next on our list is style, and I use this term differently from fashion. Before the 1950s, one could identify two general categories of style: lower- and popular-priced merchandise that fitted the needs of a mass market, and fashion merchandise that had better fit, fabrics, and higher prices.

By the end of the 1960s a new crop of consumers and manufactures became obvious. The market divided further into the low end—wash dresses, house dresses, etc.; fun clothes, including sportswear and casual clothes; durable, easily-maintained clothes that were acceptable in most social situations, such as polyester double knit garments; and exclusive or designer fashions that now became available to more persons.

Fragmentation continues into the 1980s, and there are probably more submarkets than we can name. A few new ones include: active sportswear, such as jogging suits, which are seen at lunch counters on Madison Avenue; high quality basics, such as the basic black dress but in a luxury fabric built to last until you're sick of it. It is washable, wrinkle free, soil resistant, and affordable. Luxury designer products are reaching the masses, and big name designers' clothes are worn by secretaries of limited means.

Where do the fiber producers fit in? Everywhere. When fabric houses and cutters can't do the job by themselves, it's our job to supply yarns and yarn systems to do it for them. You can look to spin-like filaments, hydrophilic noncellulosics, and integral soil release fiber to give fabrics natural aesthetics and mass affordable economics.

The demand for variety, for more and more choices is synonymous with affluence and sophistication. When I first became involved in the style business, women's outerwear manufacturers awaited Women's Wear Daily's pronouncement on skirt lengths before committing to the new season's line. Today there's no such thing as an accepted skirt length—anything goes.

We did a little study a few years back that shows the mix available to consumers—new versus old apparel products. Arbitrarily a new product was defined as a new fiber in a traditional garment, or a new garment or a new application of fabric not available five years ago. We plotted our results from 1950 to 1975 in five-year increments and found that new products represented less than five percent of the value of apparel shipments just after World War II. By 1960 this figure became approximately 15 percent; by 1970 it doubled. Fully half of all apparel products available to the consumer in this decade were not available in the 1970s. And this is not limited to apparel products.

Look at the offerings from carpet mills. An average mill offered about 330 choices of style and color in 1968. Today this has doubled. In effect this requires smaller mills with limited resources to shoot at
smaller targets. Even the most technologically oriented end use, tire cord, has not been immune from this product proliferation. Over its history, tire cord included cotton, then rayon. Next came nylon, then polyester. Today, however, this predictable technical replacement history doesn't hold. We have six different cords in the marketplace at the same time. Who knows how many by 1990?

What can we look forward to? We'll see this market fragmentation give birth to highly specialized fibers fitted into rather narrow market targets. For example, there is a high performance requirement beginning to burgeon today involving composites. It involves combining plastics and fibers for high technology applications, such as printed circuit boards, aerospace structural members, and even sporting goods. Originally fiberglass was used to meet these needs. Requirements for new technologies have brought forth aramids, carbon and graphite fibers, boron, and silica carbide. And that's not a complete list. The need for high performance flameproofing for the military and NASA generated an interest in BI. But these are highly specialized requirements and would warrant the high cost of development and construction from scratch of new polymer systems. I doubt that a new polymer is warranted or feasible for mass marketing to the traditional textile business. The cost of development, greenfields construction, and introductory promotion would be prohibitive, especially considering that present-day polymers are quite close to idealized or natural aesthetics. Our guess is that today's noncellulosics are within five years of closing the gap with cotton in aesthetics, just as nylon has with wool in carpet.

Summing up, we can look forward to the following probable accomplishments in the next 10 years:

- aesthetically improved noncellulosics (comfort, hand)
- higher modulus organics for industrial applications
- all synthetic insulation fibers
- edible fibers (textured protein)
- asbestos substitutes
- mixed continuous filament yarns for combined properties
- composites (fiber/plastics) in many end uses
- three to four mass marketed polymer types and six or seven specialties
- severe escalation in capital dollars/lb. capacity
- continued net exports of fiber
- shake out of peripheral producers.

Summary: American Apparel Manufacturing in the 1980s

Richard H. Sines
Chief Economist
American Apparel Manufacturers Association

The presentation will consist of two parts. The first part will focus on an economic analysis of the factors leading to increased modernization and capitalization of United States' apparel manufacturing firms. The second part will be the presentation of a short illustrative film titled New World of Apparel that demonstrates dramatically the range of
existing technology from relatively labor intensive methods to highly sophisticated, computerized machinery and management techniques.

In brief, the speech will highlight the American apparel industry's efforts to adapt to the changes created largely by federal government policies to liberalize international trade. The American apparel industry, which is the sixth largest manufacturing employer, the largest employer of women, and one of the largest employers of minorities in the United States, has been harshly affected by the disruption of the American apparel market by imports from countries with inexpensive labor. Continued and often-times erratic imports have had devastating effects on production and employment, particularly in smaller and labor-intensive establishments. Low profit rates have led to a decline in the number of operating establishments, as smaller firms fade out. Acquisition and expansion will contribute to the current trend of larger, more diversified firms during the 1980s. Larger diversified firms are more established and less risky and can acquire expensive modern computerized technology more cheaply.

This trend towards increasing capital intensity extends to human capital. Modernization of the United States apparel industry will require increasing numbers of college-trained personnel with skills needed for adopting modern technology to the constant changes in style and fashion design dictated by apparel consumers. Career opportunities for college-trained individuals will be found in such areas as plant management, research and development, production engineering, costing and production control. Unfortunately for unemployed and underemployed domestic workers, larger firms are more inclined to shift their labor intensive manufacturing operations to less-developed countries. Overseas transfer of plant and equipment translates into fewer domestic jobs, higher unemployment and less national production if apparel's displaced workers—primarily women and minorities—do not obtain higher-paying jobs elsewhere in the economy.

Finally, major challenges facing the American apparel industry in the 1980s will be examined. Continued market disruption from imports of less developed countries, including the current surge from China, must be tackled. China has been estimated to have more apparel workers than the U.S., Europe, and Japan combined. Uncontrolled and erratic imports from China with whom relations are being normalized would have a crippling effect on the American apparel industry. Continued challenge exists in developing more productive, less labor-intensive equipment for manufacturing, management, and marketing. Increasing exports also will be a major challenge in the 1980s. Current export promotion activities, including the creation of large trading companies to market American-made apparel, may be helpful in this area. In particular, expect expansion in "807" activity where cut apparel parts are exported for assembly and reimported into the United States. Duty is paid only on the value added by overseas assembly. Special continued challenges such as lessening the harmful effects of imports on regional firm closures and unemployment—particularly for women and minorities—will be addressed.
Sixteen years ago, I appeared before the Association of College Professors of Textiles and Clothing as a last-minute substitute for Bill Close, who is chairman of the board of Springs Mills and my boss.

Bill had to make a business trip to Europe, which meant that I had to make a trip to Detroit. It was 1964 and, as I recall, the ACPTC was a fairly new organization. All of us were much younger then and some of those present in 1964 are no longer with us, wonderful people such as Frank Tesi of Penn State and Ruth Hovermale of Winthrop College.

I gave the talk for Bill Close, having no idea how little I knew and, therefore, feeling perfectly comfortable to discuss "Revolutions in Textiles." I still have a copy of the talk and, upon reflection, I understated. The revolutionary changes in textiles that have come about since the early sixties have been impressive. So much has happened in so little time.

Nine years ago, the ACPTC held its annual meeting in Charlotte, North Carolina, and the dinner speaker one evening was Pete Scotese, then president and now vice chairman of Springs Mills. Having dazzled you with a fashion show and intrigued you with a visit aboard our Gay Nineties Springmaid Special railroad train, Pete Scotese offered you a proposition: Springs would establish a consumer advisory panel to meet periodically with our key managers if the ACPTC would select the panelists from its own membership.

The proposition was a honest one and it indicated two things: Springs recognized the validity of the consumer movement and wanted to be involved in it in a meaningful way; and, Spring recognized that the professional home economists of this nation were the most responsible, knowledgeable, and dedicated consumer advocates in the country. You had the track record to prove it. You had been involved for generations before someone invented the term "consumerism."

You accepted our offer and the Springs Consumer Advisory Panel was born. It continued to meet until 1977, and it contributed substantially to our understanding of the issues involved in the consumer movement. We are grateful to the ACPTC for your cooperation and support. And we are particularly grateful to your members who served as panelists, such people as Enid Tozier, Marjory Joseph, Lois Dickey, Nancy Harries, Marilyn Horn, and the late Ruth Hovermale, who composed the original panel.

So now it is 1980, and I am back again, this time substituting for John O'Donoghue, president of our Consumer Products Division. John regrets that he could not be with you today. Scheduling problems forced a change in dates for the annual sales meeting of our Consumer Division and John is now heavily involved in that. He sends you his warm regards--and me.

Frankly, I'm glad. It has been a pleasure over the years to work with many of you and to exchange information and ideas with you. For me, home economists--under whatever contemporary name--are a vital resource for both consumers and producers and I have the highest regard for you.
I've been asked to talk with you about "Home Furnishings in the 1980s" and I'm prepared to do that--with two qualifiers up front. The first is that our Consumer Products Division marketing executives should be on this platform, not me. They are our in-house experts on this subject. Unfortunately, they simply could not be here because of the sales meeting. But I assure you I picked their minds, and those of our planning staff, before they left for their meeting. The other qualifier is that the perspectives and assumptions I discuss will be those of Springs Mills. If these coincide with the views and assumptions of others in the industry--well, then you'll know that all of us are thinking properly.

Home furnishings at Springs represented 37 percent of our sales in 1979. That's a $311 million chunk of our business. Our product line includes sheets, pillowcases, towels, draperies, quilted bedspreads, comforters, tablecloths, embroidered sheer curtains, bath sets, tufted scatter rugs and room-sized rugs, drapery hardware, vertical and horizontal blinds, window shades, custom woven wood blinds, decorative fringe, tiebacks, and sewing accessories. That's a fairly diverse list and it qualifies us at least as an "informed source" on trends in the home furnishings field.

As we try to categorize what's been happening in home furnishings, and what's likely to happen in the next ten years, five major forces seem to be at work. They have impact in many cases beyond home furnishings. They are:

1. **The demographics.** They're changing in a way that favors home furnishings growth.
2. **Housing.** A pent-up demand for housing in America is a favorable sign for the future.
3. **Energy.** The energy situation is forcing major changes in products, lifestyles, and shopping patterns.
4. **Technology.** New textile technology is significantly changing the way we make products and the kinds of products we can make.
5. **And finally, the marketplace itself.** Distribution channels are changing and shoppers are giving us challenging signals.

Let's examine how these forces are affecting the home furnishings field.

**Demographics.** First and perhaps foremost we have to consider the changing nature of the population. Reams of paper have been devoted to the shifting demographics of America. We've seen it in scholarly journals. We've heard it in speeches. The pollsters have bombarded us with it this election year.

Let's put the population changes in proper focus in order to understand how profound the effects will be.

In 1966, Springs' Annual Report devoted seven pages of text and photos to the subject of The Youth Market. More than half the population was under 30 years of age at that time. More than 35 percent was under 18. Characterizing the Youth Market as "explosive, sophisticated, and fickle," we said the population figures told us the Youth Market was "where the action is, the big market for the years just ahead."

We were tuning in to the Youth Beat in 1966. But somewhere along the line the rhythm changed. The population grew older. And it began to grow more slowly.

As we look at the public today and for the next 10 years, statistics tell us that the 25 to 44 age group is the fastest growing group in
the country. In fact it's growing four times faster than the rest of the population.

The 25 to 44 group is the crowd that buys houses and forms primary households. This group, and people in their upper forties and fifties, account for most home furnishings sales. They are our major targets. And they're getting more affluent and larger in numbers.

It's true that the 40 to 59 age group has been the major buying segment as far as sheets are concerned. They have the money now; they have the houses to redecorate; they buy the wedding gifts. We'll continue to focus on them. But the big growth in the broader category of home furnishings is going to be in the younger group where households are formed.

Most of the households in the 25 to 44 age group have two incomes. This means not only more disposable income per home but less mobility and a greater demand for convenience products. Translated, these facts point us toward more frequent replacement and redecoration purchases, more frequent purchases of additional decorative products and a stronger demand for low maintenance items such as no-iron fabrics, stain and soil resistance finishes, and anti-static fibers and finishes.

While the 25 to 44 group has practical standards, it also has an aesthetic side. We believe fashion will continue to play an important role in home furnishings. In the sheet market today, for example, you find new departures in printing; decorative trimming, such as ruffles and piping; and product coordination. At the high fashion end of the sheet market, the life span of the average pattern is only six to nine months. Then it's replaced.

John Becker of Boston, a market research consultant who does work for us, has turned up some interesting findings in the middle and moderate price areas. One finding that won't astonish this audience is that brand is not a significant factor in home furnishings purchases. One-third of the consumers Becker surveyed could not name a single home furnishings brand. He found that price, quality, style, delivery time, and availability are the important things.

But the answer to another Becker question left us scratching our heads. He asked what motivated a sheet shopper to go to the store in the first place. The answer was painfully simple: the shopper's old sheets had worn out. She wasn't lured by fashion, brand, or advertising. She just needed some new sheets. This finding may explain forecasts of a relatively slow growth rate in the market for sheets. Sheets have a long life span. One of the solutions for producers is to divert sheeting into other end uses, and many are beginning to do this.

However, the basic fact remains: home furnishings in general will be a growth area primarily because of the affluence and rapid growth of the 25 to 44 age group.

Housing. Related to the demographic changes is our national housing situation. Carpets, drapes, bed and bath items--much of the growth in these areas is tied to the housing market.

In America today, there is tremendous pent-up demand for housing. In a normal year there are two million housing starts, but we won't come close to that in 1980, with the high interest rates we've had.

And the longer that interest rates and unemployment remain high, the greater this pent-up demand for housing will become. We think the early to middle 1980s will see the housing dam break and this will be a
major factor in home furnishings growth during that period. Not all of the housing growth will be single-family homes. There will also be condominiums, co-ops, apartments, and second homes at the beach or in the mountains. And there will be retirement homes for the growing number of older Americans. And in general, housing will be smaller than the traditional single-family homes of the 60s and 70s.

These new homes of the 1980s will be more energy-efficient than their predecessors. Their owners will place a high premium on convenience, ease of care, and low maintenance, including the maintenance of their furnishings.

So more people, with more money, buying more new housing will have a generally positive impact on the potential for home furnishings in the 1980s.

Energy. What about energy? Our energy situation is a two-edged sword for home furnishings. It's like the old maxim about challenges being opportunities in disguise.

We think energy costs will continue to grow at a faster rate than inflation. If so, this will have several results in the 1980s:

- People will stay at home more, and when that happens they spend more money on their home furnishings. They redecorate more often.
- Many people will see their investment in a home as their best hedge against inflation. So they’ll stay put and spend money to upgrade the house and the furnishings rather than moving to a newer home.
- More energy-related products will emerge. Such things as down-filled comforters, body wraps, flannelette sheets, and window decorating treatments with advanced thermal properties.
- There will be more shopping by mail and telephone as transportation costs rise. One of our survey findings this year showed a dramatic increase in reliance on newspapers and catalogs by home furnishings shoppers. The major reason for this was the cost of energy. Since 1976, shoppers who said booklets they received in the mail greatly influenced their decisions increased from 19 to 30 percent; those who said they rely on newspapers for product information increased from 25 to 39 percent.

Many of the product offerings will be influenced by energy costs. We'll be adapting fiber blends, production techniques, packaging, and distribution at least in part to the cost of energy. The fiber content and constructions will be all over the ballpark. There's no clearcut long-term trend toward, or away from, natural fibers, for example. All producers will be looking for cost efficiencies. At the same time, we'll be trying to differentiate our products from those of our competitors. The consumer probably will be the main beneficiary of this product experimentation and diversity.

Energy will continue to be a major factor in home furnishings, just as it is in most aspects of our lives today. It's a big factor in the next item affecting our field, and that's technology.

Technology. Beginning with the late 1970s, and continuing today, textile manufacturing technology entered its first truly innovative period in generations.

Production processes that had changed relatively little from their early beginnings began to feel the effect of inflation, energy costs and worldwide competition. This forced major advancements.

The textile industry began to invest in machines that sew with sound waves rather than thread. Weaving machines came along with no shuttles.
They were faster, quieter, and more reliable than the earlier models. Laser inspection systems examined cloth and their eyes never tired. Automated sewing systems were developed that lowered labor costs and made quality more consistent. New dyeing and finishing processes emerged that used less water, less heat, and fewer steps to produce truer colors and improved finishes. Newer and faster screen printing machines were developed.

Double-sided printing technology is now available in this country. So is machinery capable of printing a 120-inch repeat; in the past we'd been limited to 36-inch repeats. These systems open a new dimension to design and style, while offering cost and energy savings.

New terry weaving machines can produce simultaneously six Jacquard hand towels in multi-colors, with improved quality.

New carpet fiber technology is called the "focal point of the decade" in the carpet business, because it provides carpets that are soil-resistant, static-free, stain repellent, and wear-resistant. And all this comes with more advanced, more intricate carpet printing.

What's known as the "attached cushion product area" is growing in importance to home redecoration. This simply means improved carpet that comes with the pad attached.

Microprocessors and computerized controls are commonplace in textile plants today, and their capabilities are only now being fully explored.

Much of this technological explosion in our textile plants is geared to costs—the costs of labor, energy, raw materials, and capital. But a major result has been a broader range of products, new products geared to the consumer of the 1980s. Another result has been higher standards of product performance.

I might add straightforwardly and without apology that still another major result has been higher standards of profit performance. Home furnishings producers have discovered that they don't have to live with unacceptable profits just because they're in the textile business. Return on the assets employed in making and selling our products continues to be our major performance test. And the returns are getting better.

In fact, the United States is becoming a world power in home furnishings. This country can compete very successfully, per item, with anyone in the world. World markets are a major target for U.S. producers of home furnishings.

The fact that the economies of some other major nations are slowing down right now, just as our own economy seems to be improving, may be a temporary brake on the growth of export sales. But in the longer term, the only real deterrent in the growth of home furnishings sales off-shore is the willingness of other countries to let us in.

The reason the U.S. can compete with off-shore producers, despite the great difference in wage rates, and despite the fact that many foreign producers do not bear the same burden of government-imposed regulatory costs, is that technology has made the U.S. textile industry the most efficient in the world. We can compete anywhere, provided the terms are equal.

As an example, the British government recently was asked to restrict imports of U.S. textiles. Our prices were so low, in comparison with domestic prices, that we were accused of dumping. But the fact is that U.S. home furnishings sales in Great Britain are quite profit-
able. We are able to compete because we have a lead in technology that results from heavy capital investment. The U.S. textile industry is becoming increasingly capital intensive. As we continue to move in this direction, the cost of catching us will come high.

One of the great advantages of a major producer such as Springs is that our styling costs per item are very small. Because of our volume, we can afford to seek the best styling in the world—and Springs and other leading U.S. producers do just that. This has meaning because fashion is becoming increasingly important in the off-shore markets. And, as the appetite for fashion grows, U.S. producers are getting a "feel" for specific off-shore markets. In fact, we are designing lines for individual countries to meet varying tastes.

One indication of the importance of fashion is our program with the Metropolitan Museum of Art in New York. We began a program with the museum in 1973. The museum allowed us to select designs and patterns from its extensive textile collection. We took these classic designs and adapted them to modern textile usage. The agreement was that the museum would receive a royalty on all of our sales. To date, the museum has received more than $2 million in royalties from Springs and, needless to say, we have sold a lot of sheets and other products. The program has been good for us, good for the consuming public, and good for the museum.

The Marketplace. The fifth major force operating in the home furnishings area is what I've called the marketplace itself. Significant things are happening out there where the products are shipped and sold.

For example, there will continue in the 1980s impressive growth in all categories of home furnishings that are sold through the mass merchandise stores, discount stores, and mail-order houses. In the main line department stores, home furnishings growth is leveling off.

For producers, the result of increased distribution through the lower-markup outlets will mean increased pressure on costs and service. It also may mean even less reliance on brand names.

There's another, more subtle shift going on among consumers. We've heard for several years that home sewing was either static or declining despite the conventional wisdom that said inflation was a boom to that market. Well, there's a part of the home sewing market that's booming. It's the home furnishings segment. About 20 to 30 percent of the fabrics sold through home sewing outlets are being used to make curtains, draperies, tablecloths, slip covers, napkins, and other items for the home.

Springs is particularly interested in what consumers do with the windows of their homes. One of our surveys in this area shows that consumers are not knowledgeable about the use of such items as vertical, horizontal, and woven wood blinds in decorating. They seem much more oriented to traditional curtain and drapery treatment. This presents an opportunity in the coming decade for manufacturers to do an education job that could result in increased use of these types of window products in home decoration.

As I have already said, there's a growing export market for U.S. home furnishings, with Europe the key. And there are excellent prospects for growth in home furnishings exports to the developed nations of the Far East, such as Japan, Hong Kong, and Taiwan. We also look for longer-term growth in Latin America.

Happily, because of a combination of fashion costs and shipping
costs, home furnishings do not present much of a problem to the U.S. in terms of imports competition—and that's a switch. In sharp contrast, the competition for apparel imports is severe.

Government regulations, of course, will continue to be a source of concern and complexity to us, as they will to all manufacturers. Carpet flammability has been a major issue, as you know, and it's possible some steps will be taken toward flammability standards for draperies. The regulatory environment for home furnishings is the same one all textile producers live with and it's burdensome and unpredictable. However, as this audience knows only too well—and the people who work down the street and up on the Hill should know, too—the manufacturer always manages to live with regulation. It's the consumer who pays.

The consumer is at the heart of home furnishings production and marketing.

I've described today how some major forces will affect the consumer and her home furnishings choices in the coming decade:

- Marketers in all businesses will focus increasingly on the growing 25 to 44 age group.
- Housing will boom and create new demand for home furnishings.
- Energy will affect product design, costs, and shopping patterns.
- Technology will expand product offerings, increase production efficiency, and improve quality.
- Distribution channels will continue to shift and the consumer will become more cost-conscious and more inclined to adapt home furnishings products to her individual tastes.

In general, the outlook is optimistic for producers and consumers. The eighties will be a decade in which new mass production technology will meet the demands of an affluent, large, individualistic consumer group. This will happen in spite of the pressures of inflation and high energy costs.

There will be one sour note. In the face of growing technology, rising education, and increasing sophistication, nine consumers out of ten will still be unable to fold a fitted sheet.

The Role of Government in Textiles and Apparel in the 1980s

Paul T. O'Day
Deputy Assistant Secretary for Textiles and Apparel
U.S. Department of Commerce

I was asked to speak on "The Role of Government in Textiles and Apparel in the 1980s"—a formidable assignment since government in the modern era interacts in countless ways with every industry. However, in textiles and apparel in the United States, several unique relationships with government have evolved, to which I will limit my comments.

Before we look at the 80s, a brief look backward will be helpful to set the stage.
The primary industry/government relationship in this sector has been centered upon the control of imports into the United States—a topic that has dominated textile and apparel public policy for several decades. As early as the mid-1950s, we negotiated the first formal restraint agreements on textile and apparel imports—covering cotton fabrics and garments from Japan.

By the early 60s, trade from other suppliers had grown to the point where an international agreement on cotton products was considered necessary. These cotton arrangements were effective in holding imports to acceptable increases until 1967, when a major technological change transformed the American market—the development of permanent press textile and apparel products.

Offshore suppliers stepped in quickly to take advantage of the explosion for no-iron products, particularly apparel. By 1972, man-made fiber imports were two and a half times the level of cotton imports, and we had negotiated restraint agreements with Japan, Hong Kong, Korea, and Taiwan. We were not alone as a nation in our concern about these rapidly rising imports—the following year, the MultiFiber Arrangement was negotiated under the GATT, allowing bilateral agreements to restrain trade, without the traditional GATT requirement for compensation. The MFA was renewed in 1977, without change.

Under the MFA, the United States has negotiated 24 bilateral agreements to restrain trade in textiles and apparel. This is an unparalleled record of aggressive government action to protect an industrial sector from imports.

The reasons are straightforward—they concern jobs. The U.S. textile and apparel complex is the largest employer in the manufacturing sector—2.3 million jobs in 1980. This is down about 200,000 jobs from the peak of the early 70s. Thus, government actions have brought stability to this sector—at least at the aggregate level. Changes in the mix of firms, styles, products—and in regional production—have continued throughout.

But there has been much less stability in imports. If an adjustment is made for productivity increases, the basic finding is that virtually all of the growth in the domestic market has been absorbed by increased imports.

In my view, the government policies that have sustained this employment throughout the 60s and 70s will continue into the 1980s. The jobs involved have the highest proportion of women (67%), minorities (18%), and unskilled workers (60%) of any industry sector. In addition, they are located in areas where mobility of employment is minimal—the center cities of the North East and the rural areas in the South. And although there have been comprehensive import controls in place for more than a decade, the workers in these industries remain at the bottom of the manufacturing wage scale, at hourly rates of about $5 per hour.

As recently as two years ago, a forecast of the government/industry relationship into the 1980s would have ended here. Three decades of consistent experience—more of the same to come. However, there are some interesting recent changes to consider.

Although we may yet be too close to understand and appreciate all of the implications, 1979 was a most unusual—and significant—year for the American textile and apparel industries. In that year, although we continued our traditional large trade deficit in apparel, the long string
of deficits in trade in textile mill products came to a sudden and dramatic end.

In 1978, the United States had a $200 million deficit in trade in textile mill products. In 1979 this was transformed into a surplus of $800 million—a turnaround of $1 billion in a single year.

Some industry leaders saw the change coming and pursued it with energy and imagination. Led by Morris Bryan, then president of the American Textile Manufacturers Institute, industry representatives added a new word to their discussions with the government on the textile policy—exports. The sliding dollar helped some, but clearly more was at work. Throughout the 1970s the textile industry had invested heavily in the latest and most modern equipment. U.S. plants had the scale to accommodate the best new equipment and the advantage was seized. In addition, our material costs, wage rates, and social costs were, and remain, substantially below those in most of the rest of the developed world.

The export fever caught on, driving our textile mill product exports up 46 percent over 1978. This surge has continued into 1980, and at this point exports are running 17 percent ahead of the record 1979 levels.

So far we have been talking about textile mill products—but the 1979 improvement in exports did not end there. Although we have sustained massive deficits in apparel trade every year during the 1970s, an awareness developed in 1979 that some modest opportunities existed even for apparel exports. The levels here are far smaller, but the increases in exports, on a percentage basis, have been as dramatic. In 1979 company after company began to see that the United States could compete in some apparel lines even in the face of competition from low-wage countries. Our styling, combined with the incredible variety of U.S. fashion, has opened trading doors in many countries where we have been assuming that we were uncompetitive. Our styling in leisure wear, for example, combined with the "Made in America" label, is a powerful advantage in developed country markets. These may be exceptions to the overall trade flows, but they are important exceptions.

When the industry asked for our help, we moved immediately to establish a full-time 10-person export promotion staff to carry out a variety of programs to stimulate exports. These programs included

• Research on over two dozen major markets, worldwide.
• A continuing series of export information seminars.
• Several specialized trade missions.
• Participation by U.S. companies, for the first time, in major international textile and apparel trade shows.
• For domestic trade shows, use of our Commercial Officers around the world to identify potential foreign buyers and assist their travel to the United States.
• Reviving a long-dormant program to encourage and sponsor in-store promotions of American apparel in major European department stores.
• Establishing a Government-wide strike force to identify foreign barriers to our trade in textiles and apparel and to seek, on a priority basis, to remove them in every possible case.

This trade barrier removal effort has involved everything from illegal quotas, not warranted under the international rules, to ending unnecessary customs delays in countries to which we ship our textile and apparel products, to an attack in one country on its "Operation Turtle,"
where import licenses that were supposed to be automatic became as hard to obtain as a ticket to the Superbowl.

We have a long list of successes, but the task is never ending. In two industries that require more and more capital to maintain domestic competitiveness--especially for all of the impressive automated equipment becoming available--the best way to obtain the necessary funds is to increase return on investment. More debt and new equity are simply not alternatives. And since domestic markets have their limits, one of the best ways to increase return on investment is to pursue the countless opportunities we have to send our products to foreign markets.

In the 1980s, the importance of exports to the health of firms should become increasingly apparent, especially in the textile industry, but also for some apparel companies.

Finally, 1979 saw some significant developments in beginning and building a government/industry partnership on productivity improvement. It is no secret that in the American apparel industry spending on productivity and innovation is among the lowest of all of the industrial sectors in the country.

At the urging of the Amalgamated Clothing and Textile Workers of America, the Commerce Department funded a small but catalytic program to seek ways to improve productivity in the men's tailored clothing industry. This program involved a handful of small studies to attack some of the problems that individual firms had difficulty in addressing by themselves.

- Development of a prototype product and inventory control system.
- A basic supervisory training package.
- Improvement in quality control and testing for fabric fusing processes.

In the following months, we added projects at the Philadelphia College of Textiles and the Georgia Institute of Technology to cover yet wider areas of the apparel industry, including projects to:

- develop marketing strategies to compete with imports;
- identify technological opportunities for apparel production;
- identify opportunities for productivity improvement at the textile/apparel interface;
- develop engineered work situations for men's tailored clothing factories;
- create a prototype sleeve machine; and
- examine the use of chemical sealants to prevent edge fraying.

In addition, we have developed cooperative projects with several apparel associations. These include a comprehensive technical assistance review of the New England apparel industry, development of a loss control program for the Atlantic Apparel Contractors Association, and a project with the National Knitted Outerwear Association to study post knitting machinery needs for the knitted outerwear industry.

Although we are at the earliest stages in developing this relationship with the apparel industry, we have overcome the initial barriers of cynicism and apprehension about a useful government role in a productivity improvement partnership with the industry. In the process, we have taken great care to keep the federal participation to a coordinating and seedbed role in cooperating with interested manufacturers, unions, universities, consultants, and associations.

Time does not allow a review of all of the projects now under way,
but they comprise a modest beginning on many of the areas that inhibit productivity improvement in the apparel industry.

The most significant aspect of this new partnership is the leverage obtained from a relatively small amount of federal funds in engaging the creativity of firms, unions, and universities in productivity improvement.

In summary, my expectations for the government/industry relationship in the 1980s include a mixture of old and new patterns:

• continuation of import controls where necessary to prevent destruction of the American textile and apparel productive base;
• a growing partnership between government and the industry on the promotion of exports; and
• gradual development of a cooperative government/industry/union venture for productivity improvement.

New Perspectives on the History of Western Dress,
Including a Study of Dress in Representational Art

Saul Schur

Over three years ago I received the assignment from the National Endowment for the Humanities to coordinate a grants project that would create a humanistic approach to the study of dress. With the cooperation of major universities and colleges, museums and historical societies, we would explore the potential and current reality of what Mary Ellen Roach and Kathleen Musa stated so succinctly in the preface to New Perspectives on the History of Western Dress:

"...these resources represent complementary works that contribute to comprehensive study of dress as an integral part of human experience and provide a multi-faceted view of dress that liberates students from limited, parochial perspectives. Thus teachers of the history of Western dress have the opportunity to guide students in interpreting and synthesizing viewpoints on Western dress provided by scholars in fields such as social history, anthropology, economics, psychology, sociology, art, literature, theater arts and textiles and clothing divisions of home economics."

I have reproduced for you in full an excellent preliminary report from Betty Mills of Texas Tech University that shows how one university plans its multidisciplinary use of this material. Other reports are briefly excerpted. All reports will be sent to the National Endowment for the Humanities. Since most of you received your books, bibliographies, and slide sets for repository schools in August and September, more comprehensive reports are expected to come later in the school year.

Resources in the form of Collections of Historic Costumes, Accessories, Textiles and Slides located in Universities and Colleges was prepared by Frances Duffield of Auburn University. It is a tribute to Frances Duffield that she paid no attention to discouraging voices when she began the Bibliography. It is a tribute to all of you listed in the...
the Bibliography that you took the time to answer her questionnaire.

I would like Frances Duffield to give you an update on the Bibliography and to report on her meeting with your colleagues in the field of Theater Arts.

Frances J. Duffield
Auburn University

Again, may I express my personal thanks to those of you that took the time to answer and return the questionnaires.

The questionnaires, sent to 141 universities and colleges, solicited information as to holdings in historic costume and textile collections and the presence of courses in these areas. These schools included private, state, city and community colleges as well as land-grant universities. Responses from 111 of the 141 schools were received and analyzed. History of Costume courses were taught in 89 of the 111 responding schools and 83 indicated their collected costume and textile holdings.

As a result of the publication, Resources in the Form of Collections of Historic Costumes, Accessories, Textiles and Slides Located in Universities and Colleges, I was asked to be a participant of the Costume Section panel presentation, "Survey of Collections in the United States Available for Design Research" at the 1980 United States Institute of Theater Technology meeting in Kansas City. The chairperson was Jean L. Druessdow, Curatorial Assistant, Metropolitan Museum of Art, New York City. The other members were Elizabeth Jachimowitz, Costume Curator, Chicago Historical Society, Chicago, and Inez Brooks-Meyers, Costume Curator, Oakland Museum, Oakland, California.

In the Winter 1980 issue of Theater Design and Technology, Journal of the U.S.I.T.T., there will be a resume of the panel presentations. Please be prepared to give assistance to theater costume designers if you receive requests. As you may have guessed, I have volunteered your expertise to this group of concerned persons in both clothing design and historic areas. This is the first large group of professional people outside our own area that has taken advantage of this publication by the National Endowment for the Humanities and cooperation between theater and clothing and textiles departments can prove to be mutually beneficial. A number of avenues exist for cooperation including internship experiences for undergraduates and opportunities for clothing design majors to explore another vocational field. Graduate students from both the theater and clothing and textile areas may cross over through their thesis and dissertation research and through graduate assistantships.

This has been a very exciting experience for me to be part of this interdisciplinary interchange and to share with another group the fruits of our labors. Each one of you has that same opportunity so please take advantage of it.

Mary Ellen Roach Higgins
University of Wisconsin

In retrospect, I am sure that no one would have been more surprised than Kathleen Musa and I if someone had told us in September 1977 that a
year later we would be hard at work on a project called "New Perspectives on the History of Western Dress." But we mortals can never predict when fate will step in, especially when fate's name is Saul Schur.

So it came to pass that in fall 1978 we found ourselves taking time to examine—in more detail than ever before—concerns we have had when teaching courses devoted to the history of Western dress. As we reflected on our concerns we tended to pose questions. These questions, which I will summarize for you, provided a framework for structuring our part of this project. We do not claim that the list of questions we compiled is comprehensive or even earth-shaking. In addition, our responses to our own questions, as embodied in the essays we wrote, should in no way be construed to represent the last word that can, or should, be said about any topic.

I will now share with you a list of questions that, at least from our perspective, begged to be addressed:

1. Should the study of the history of dress be more than a slide show of pictures arranged in chronological order?
2. Are some forms of dress neither tailored nor draped?
3. Why do a number of books on history of Western dress have first chapters which, although they are entitled "Origins of Dress", have no revelations about origins in them?
4. Can we develop a logical system for formulating statements about the functions of dress and abandon speculations about why some naked, noble savage first decided not to be naked?
5. Is history of Western dress also history of art?
6. How do we cope with historical items of dress, or representations of dress, that seem counter to general fashion trends? And do we recognize them when we see them?
7. Is a history of fashion the same as a history of Western dress?
8. And a question that we had not realized would plague us: What is Western dress?

When confronted by all of these questions, we could not avoid the responsibility of attempting to answer them—no matter how tentative or controversial our answers might be. In this attempt, our method was to conjoin slides with written text in order to present a total of ideas that we could not convey through the use of either medium alone. Our ultimate objective was to inspire interested people to take part in a continuing dialogue concerning the study of the history of Western Dress. Therefore, we invite our audience to present their critiques, debate issues we raise, contribute further elaboration on topics introduced, and share points of view on topics that we have neglected.

Saul Schur

My mind is now possessed with the fulfillment of another impossible dream. All of you have visited notable exhibits similar to these from European and American museums. Once the exhibit is dismantled and all the costumes and accessories returned, what remains?.....perhaps a catalogue mostly in black and white, perhaps a few color slides, or nothing at all. Why can't we have a complete record of important exhibits with excellent slides and an accompanying script written by the people who created the exhibit?
Why can't they be made available to schools and museums, bringing the exhibits via slides and text to the many thousands who cannot attend the original exhibits or would like to integrate the unique exhibit approaches with their own teaching? This has rarely been done. I feel strongly that the time has come when funding for costume exhibits should automatically include provisions for professional quality slides along with catalogues and slide commentaries to be made available to educators and museum curators either free of charge or at a very nominal cost.

Please, if you agree with me, let me have your name, address, and phone number. To win this battle I will need proof that you really want these museum exhibit slides and that you will bring them to a broad audience in your community. It puts you under no obligation, but it certainly will help in obtaining a possible grant for this purpose.

Textiles as a Reflection of Culture

Some Thoughts on Textile Conservation

Kathryn Dirks
Museum Technician, Division of Textiles
National Museum of American History, Smithsonian Institution

Textile conservation is a relatively new field. Only in the last 30 years have museums begun to search for ways to preserve their textile collections. No museum curator or conservator has the final word on the subject. Textile conservators have diverse backgrounds, experiences, and attitudes. There are no licenses issued and no tests for certification. Each conservator has a particular philosophy that governs the way his or her collection is cared for. Even the most basic procedures are subject to question and revision. There are several ways to do anything.

The type of conservation treatment afforded an object will depend upon the purpose of the collection, the facilities available, and the philosophy and experience of the curator and the conservator. At the National Museum of History and Technology our goal is to lengthen the object's life, not to make it more attractive, although the latter is often a desirable result of treatment. Other museums or institutions may view their mission differently.

No two museum textiles are exactly alike; the fiber content, dyes, finishes, and construction, past treatments and storage, all combine to give each textile its own unique set of conservation problems and needs. Quite often the decisions made by the conservator concerning the treatment afforded an object are subjective, based on the facts of the case and past experience in dealing with similar objects. In textile conservation there is no substitute for hands-on experience.

Conservation treatment for an antique textile does not have to be grandiose or extremely technical. An action as simple as changing the
fold lines in an object can sometimes prevent serious damage. Often the only treatment necessary or possible is a change in storage environment. Needlework restoration and wet-cleaning are not considered routine treatments, and not all textiles need them. On occasion the best way to treat an antique textile is to store it properly, and leave it alone.

When deciding how best to treat a textile there are many things to be considered, not the least of which is the fiber content. If the object is a sampler, fibers from the embroidery yarns and the ground fabric must be examined. If the textile is a dress, the ground fabric, lace, ribbons, lining, interfacing, facing, and sewing thread must all be examined. Metal fastenings, boning, and other non-textile materials involved must be examined also. The condition of the fibers should be noted. Are they broken, swollen, or cracked? Is there evidence of insect or other damage?

The dyes and finishes should be considered next. Are they fast to water and detergent? How does light affect them? How does the general atmosphere affect them? How do the dyes affect the life span of the textile? Will the removal of the finish or dye detract from the historic importance of the textiles?

Study the construction of the textile. Check to see if it is hand or machine sewn. Are the seams strong, in fragile condition, or actually broken? Is the textile composed of a few large fabric pieces, or several thousand small ones pieced together? Is the fabric strong or does it have many holes and tears? Is there abrasion damage? If the textile is embroidered, check to see if the ground fabric is strong enough to support it.

Study the textile for unusual problems. Is it nailed to a wooden frame? Is it glued to a piece of cardboard or newspaper? Does it have rust under metal buttons or hooks? Are there metal grommets or zippers that cannot be removed for cleaning and later returned? What long-term effect will they have on the textile if left as is? All of the textile's components must be considered when determining the best treatment. It would be perfect if conservators could say that if categories A, B, and C add up to 10 the object is automatically wet-cleaned; if they add up to 15, the object is too fragile to wet-clean and should be stored flat in a drawer, and if they add up to 30, the textile is a total loss. Unfortunately it is not that simple. The decisions regarding the best treatment for an object, as stated before, are subjective ones based on the textile's condition and the long-term effect of the treatment, versus what could happen to the textile if it were not treated.

Storage is usually a matter of doing the best that can be done with the equipment and funds available. When planning a textile storage area, the purpose of the collection must be kept in mind. A study collection must have easy access for students and visitors, whereas a collection of unusual, but unpublished materials may have few, if any, visitors.

Mounting and needlework can be done by skilled needleworkers with a knowledge of the textile's construction as well as minimal knowledge of the chemical and physical properties of the fibers involved. The textile in question should be studied carefully to determine its needs and the safest way of meeting them. The mounting fabric should be carefully chosen. Its weight, weave, fiber content, and texture will all influence how well it supports the textile. Not all textiles need a backing material for reinforcement. If the fabric is in good condition and is going
to lie undisturbed in a drawer, why mount it? If it has a few holes in it, and is going to be handled often by students and visitors, it may, indeed, need backing to give it extra support. It should be remembered that while backing a fragile fabric may make it safer to handle and exhibit, it also puts permanent holes in it. Therefore, backing is not a completely reversible process and should not be done without careful deliberation. The beginning conservator should start with simple projects such as handkerchiefs and other flat textiles, and with more experience in handling antique textiles, build up to delicate or three-dimensional objects. Any time you are unsure of yourself or your judgment, consult someone with more experience. Don't make blind guesses. You may want to consult several persons before you decide on the final treatment of the object.

Wet-cleaning is the most complex of the standard treatments and should not be done automatically to everything in the collection. It is only done when necessary, and then as carefully as possible. It should be carried out only when the conservator has sufficient experience, and the condition of the textile warrants it. For example, more skill may be needed to clean one quilt than to clean another. Certainly, the conservator who attempts to clean an object should have a knowledge of the chemical and physical properties of the fibers being worked on, as well as some knowledge of the chemistry of cleaning. The conservator also must study the construction of the textile, and its accessories to determine how the textile will be smoothed and dried as well as how buttons, hooks, and ribbon will react to cleaning. A beginning conservator might safely wet-clean sturdy textiles such a handkerchiefs, bonnets, christening gowns, and lace. Again, it is best to start with small objects of simple construction and work your way up to the more complex.

When working with complex textiles, it is always wise to seek a second or third opinion. Do not rush into wet-cleaning any textile. Each step in the procedure must be carefully planned, and the conservator should try to anticipate the effects of handling and cleaning procedures. If the textile's safety throughout the entire procedure is not assured, it may be best not to attempt it.

Objects that are glued to paper or cardboard should only be dealt with by an experienced conservator. Sometimes consultation with a chemist is necessary in order to find a solvent for the adhesive that will not damage the textile.

Heat setting with adhesives is a controversial technique, and is not considered standard treatment by most conservators. It should be done only as a last resort when all other conservation procedures have been considered and determined unworkable. If heat setting is necessary, it should be done by a conservator with a solid background in textile science and chemistry, as well as experience and training in the application of adhesives to fabric. It should not be attempted by a beginning conservator.

Textile conservation is a new and uncharted area. There are no absolute authorities. Everyone is still learning. In fact, textile conservators learn something new about their art with every textile they touch.
Management Problems of Textiles and Costume Collections in the Small Museum

Jean Taylor Federico
Curator
DAR Museum

My remarks, while of a general nature, are addressed most particularly to those of you who may work in small museums, or who may teach clothing and textiles within a college or university and serve as an adviser to a costume collection. To my mind, smaller institutions often face problems that are, to mix my metaphors, magnified by virtue of their smallness: a small, or nonexistent staff, and of course, the overriding concern of a small or perhaps nonexistent budget. Because of these financial limitations, we must make choices that are valid not only for the care of the collection, but also for the collection's development and future growth. Each of us is called upon to make the same kind of decisions that will be made in larger institutions where budget and staff constraints seem less apparent.

Briefly noted, I will discuss some major concerns of the small museum and its collection.

Limiting a collection to a manageable point of view. It is extremely important for each collection, large or small, to develop a collections policy. It is so much easier, and so much wiser to let potential donors know exactly what your museum can collect and what it cannot. Do not become a replacement for the neighborhood thrift shop. Make your collection have a point of view. On the other hand, be sensible and sensitive; try not to alienate a potential donor. Give that person other options. Adviser him or her of other collections. The collections policy for your organization will set very clear limits on the date of garments, their condition, and the general purpose of the collection. For example, our collections policy at the DAR Museum encompasses all decorative arts made or used in America from 1700-1850. This policy is wide enough to include any costume made during the period. Because we are specifically interested in handcrafted objects, our policy will set a limit to exclude most machine made objects. Our policy is flexible enough to allow the acceptance of the altered but extremely important 18th century wedding dress. Do not hesitate to include a study collection of exceptions that illustrate important points for scholars and researchers.

Storage problems. Textiles require specific storage conditions of temperature and humidity. Often the care of textiles in small museums is woefully negligent. It is wise for us to consider inexpensive and thoughtful solutions to as many of these problems as possible—for example, rolled storage on tubes available from many rug merchants or fabric stores. Ask for volunteers to make 100% cotton padded hangers. Ask for donations of old cotton sheets. These are a few ideas; many more are contained in publications available from the American Association for State and Local History.

Condition of garments and authenticity of the object. The collections policy you prepare may present the idea that your museum accepts only garments in first-rate condition. It might be wise, however, to be flexible in this area. The 1739 blue damask wedding dress, though
altered considerably, has a great deal to offer us as a cultural artifact of its period. The fabric is still a Chinese silk. During this time, trade laws restricted these silks from competing with the English silk industry, and the textiles were shipped to the Colonies. These silks are often recognized by the brown/orange stripe at the selvage. While the dress has been altered and even worn in the 20th century, it remains the sum or total of its parts, an important piece in our collection. At the same time, do not be too quick to judge. A donor who writes to you about her 1739 wedding dress may indeed have the real thing. We all know this happens rarely, but remember to write down every scrap of family history, whether recollection, vague memory, or whatever. These tidbits should become part of the whole story of the object; we must not abdicate our roles as recorders of the past as well as interpreters. How often I have read our early catalogue entries searching for what the donor might have said about the object. In our area, it is so important to establish regional characteristics, which are so easily obtainable from a reliable family history.

Access to the Collection. I urge those of you who deal with small collections to be visible and open to the public. While it is time consuming to show textiles, because of the short duration that they may be in the light, we are offering the public the ability to learn and know. It is important that smaller museums take on the serious role of a study collection. Curators and administrators should try to publish interesting items about their collections. Sharing your collection and your concerns with other curators will help make others aware of regional characteristics, of taste, and of possible unusual examples.

The Fashion Show. How often we are called upon to make our collections part of a costume party or ball! And, how unprepared our public is to our professional response. Clearly we must all place ourselves in the role of educators as we calmly point out the results of use in this manner. It is helpful to have on hand strong words from larger and more well-known institutions as we face these would-be merrymakers. These are just a few administrative problems that we share. Together with vitality, humor, and common sense, we can work to further the study of American costumes.

An Asian Perspective

Kimono, the film shown at the national meeting is available from the Japan Foundation. Information concerning its rental can be obtained from the Japanese Embassy, Washington, D.C.

To make the kimonos shown in the film, white cloth 36 inches wide and 12 meters long is cut into the kimono shape. A rough sketch is drawn on the kimono with a brush; these lines will disappear in washing. A paste mixed with rice powder is used as a resist material. The pattern is colored in with a brush, then the colored sections are covered with the paste. After the resist has been applied, the kimono is stretched out flat and the dye for the background is applied with a brush.

To fix the colors, the kimono is suspended on a frame and steamed for 30 to 40 minutes. Following this process, which transfers the color to the fabric, the fabric is floated in running water to wash away the paste and
extraneous dye.

Following the film, the Embassy presented a fashion show of kimonos and other garments made from kimono fabric.

Internship/Work Experience Programs: Panel Discussion

The Human Environment and Design Department Experience at Michigan State University

Barbara S. Stowe
Michigan State University

The internship or work experience can be a positive educational experience in professional education programs. Under what other circumstances can an employer, a potential employee, and an academic institution legitimately test each other under the conditions of a finite commitment? Efforts to provide more of these experiences to more students have increased as the interest of the three parties has remained high or grown over the past decade.

Our strongly professionally-oriented students find the internship an excellent way to try the career field to which they think they want to make a commitment or to check out a geographic area. They may use the experience to explore a related part of their career field, which will broaden their experience and increase their versatility in the job market. For example, our Interior Design students may intern with a department store primarily involved in residential design to broaden their knowledge of sources and sharpen their retailing skills, but plan to seek a career with a contract design firm upon graduation.

Well-designed work experience programs develop job-seeking skills and provide data for that all-important "experience" line on the resume. Probably of greatest importance, they provide the well-qualified student a competitive edge in the job market.

We have not experienced a decline in the number of employers seeking interns or willing to work with them if the contact is made. In fact, Michigan Chapter of the American Society of Interior Designers is mobilizing members for a professional internship effort. To date they have conducted a study of internship programs among Michigan schools and will publish a directory of member firms who will take student interns. Economic slowdowns may limit the number of students taken by some firms, but new openings tend to balance the shortfall. Indeed, when budgets are tight, noncontinuing interns can increase the work force in peak periods and then be released.

Internships are an excellent entree into the employment market. The qualifications of graduates from various institutions can be compared. Critical evaluation of programs can result in excellent suggestions for
the preparatory institutions if we take advantage of that information. And if those of us with predominantly female enrollments feel we have been newly discovered by some firms, internships are a fine way to survey a fruitful employment market that will help meet affirmative action goals!

For those of us responsible for instructional programs, the internship is an excellent way to establish dialogue with those professions for which we are preparing professionals. It can help keep our programs current and imaginative. It can help establish visibility and credibility for us. Internships can help us assess the job markets in nontraditional fields as well as the markets where we are well established, such as retailing. And an important adjunct, the dialogue that arises from an internship program can result in other modes of program support.

In the Department of Human Environment and Design at Michigan State University, field experience is available in some form in each of the four major areas: clothing and textiles, interior design, retailing, and housing and historic preservation. The experience may vary from in-class case studies to 10 weeks of on-site learning with an apparel production or retailing firm. Retailing field experience is well defined, with interior design developing. We place 60 to 80 senior retailing students with firms across the U.S. during the fall term each year. Forty senior interior design students are placed with mostly local firms throughout the year. Local firms are used because the internship is presently a required three-credit part-time experience that must be coordinated with other course work. The ID students earn no salary for the work they perform. Each of these programs is managed by a faculty coordinator. Other internships are handled individually at the initiative of the student, a requesting firm or agency, or the faculty.

Retailing students make formal applications for the program, including a goal statement, as juniors. Each applicant who meets minimum grade point and credit criteria is interviewed by the coordinator. Numbers admitted to the programs are dependent upon qualifications of the student and the number of sites available. Recruiters interview the students on campus and indicate their preferences; then the coordinator matches student and site. Following an orientation on campus, the students go into the field for approximately eight weeks. For this the student earns 10 academic credits and a small salary. The coordinator visits each site during the fall term.

You have probably noted some inconsistencies and inefficiencies in what I have described. In a moment I will tell you how we propose to manage this. Field experience is expensive education for the employer, the student, and the institution. To exist it must be cost effective for each. Participating firms must divert resources to supervision and evaluation of the intern, to program development, maintenance, and evaluation with the cooperating institutions. If the payoff is the pick of the employment market, improved staff, and some influence over the training of personnel, an internship program may well be cost effective. Students may have to add an extra term to their degree program, and pay moving and living costs with little or no salary. But, if it means a quality position in the career field of choice upon graduation, field experience may be cost effective. Institutions may have to divert faculty time to coordination and funds for travel, but if a profitable liaison develops with the professions, it may be a cost effective program.

At MSU we have proposed the following changes to our curriculum committee in an effort to make our programs more cost effective. We have de-
scribed three experiential learning courses, each with an A-D option, one for each major. The courses are elective:

- HED 490 A-D Problems in Human Environment and Design (variable to 6 credits)
- HED 492 A-D Study/Travel (variable to 8 credits)
- HED 498 A-D Field Experience in HED (variable to 12 credits)

HED 490 A-D provides for organized independent study under faculty supervision. Projects may be experiential in the sense the student may choose a problem that is part of an on-going professional "real-world" activity. Contracts will be drawn for HED 490 enrollments, supervised by a faculty member, and approved by the adviser and department chairperson.

HED 492 A-D Study/Travel. Faculty may organize study/travel courses under one number either in the U.S. or abroad. Courses such as the Decorative Arts and Architecture program would be offered under HED 492.

HED 498 A-D Field Experience will be taken by students who qualify for approved internship-type experiences. The course provides an opportunity for students to study and work off-campus in appropriate businesses or agencies. Such work-study experiences for which students earn academic credit require prior written agreement between employer and the institution on the nature of the work experience, the nature of the academic project to be carried out, and the form of evaluation. Students must meet published criteria for admission and evaluation.

This format will reduce time spent in developing individualized credit packages for each intern and provide consistency across all majors. Further, coordinators will rely to the maximum extent possible on the university placement services in identifying internship sites and managing interviews for intern placement. This not only reduces the management load for the department but links the field experience and job placement in a meaningful way. It also can reduce travel costs for the faculty coordinators as they can meet with recruiters on campus to develop new internship sites and maintain those established.

Continuation of field experience programs must be determined on the basis of quality evaluation at a number of levels. This is complicated by the fact that much of what is to be evaluated is out of the accountable faculty coordinator's direct control. Award of a large block of academic credit may be at stake as well as public relations with related professions.

At MSU the student experience is evaluated against written program criteria, student-developed goal statements or a contract, and job performance. Written evaluation forms provided to on-site supervisors are effective but simple, and quickly administered. Opportunities to write narratives are always available but not demanded. It is the faculty coordinator's responsibility to weigh student self-evaluation, site supervisor input and faculty assessment in evaluating student performance.

Evaluation of the learning experience provided at the site involves both students and faculty coordinator, and this is a very important responsibility of the faculty coordinator. It is critical that clear expectations for the learning experience be understood by all parties. The experience must be broader than single assignment employment, and academic credit cannot be awarded for part-time employment.

An increasingly critical aspect of the evaluation system of these programs is accountability for affirmative action goals. Academic programs in institutions that receive government support and that are elec-
Private or selective are subject to review by the Department of Health, Edu-
caiton and Welfare and/or the Department of Labor. Therefore the admission
and evaluation criteria and processes must be clearly stated and records
of program administration kept on file.

Each of us now involved in field experience programs will be chal-
lested by tight budgets to demonstrate their cost effectiveness. I believe
that this is a time when that can and must be done. Never have our stu-
dents been more professionally oriented nor opportunities for profes-
sional women greater. The field experience or internship helps maximize
the potential inherent in both of these factors.

Internship for Faculty Renewal

Kathryn M. Greenwood
Oklahoma State University

Faculty renewal is an increasingly important concern in higher edu-
cation. By 1985 it is predicted the 80 to 90 percent of college and uni-
versity faculty will be tenured. As the number of tenured faculty in-
creases, problems of faculty renewal or updating also may increase, along
with a lack of class relevancy for career-oriented students. Granted
many professors continue to do post-doctoral studies and research, but few
discipline areas require or reward faculty work experiences in career-
related fields, especially in business and industry.

Many home economics faculty teach courses directly related to the
career-oriented goals of college students, but how can the relevance and
currency of such courses be assured? Recently at Oklahoma State University
a "Faculty Professional Development Internship" (FPDI) was initiated in
the Clothing, Textiles and Merchandising Department. The purposes of the
FPDI program were to:

1. Increase faculty awareness and understanding of competencies
needed in specific career areas related to subject matter.
2. Strengthen relationships between education and career fields in
which students seek employment.
3. Enable the faculty to better assist in counseling students in
career preferences and self inventory.
4. Provide opportunities for action research focused on immediate
application beneficial to both education and industry.

Format of FPDI. The model program for faculty renewal was struc-
tured with an eight-week (approximately 90 hours) "on campus" period
for (1) the study of career-oriented competencies associated with the
fashion merchandising curriculum, and (2) the designing of a mini-research
project related to retailing. A 10-week (approximately 400 hours) "off
campus" period involved each of the three faculty interns in a work sit-
uation. As the Oklahoma State University coordinator, I obtained prior
commitments and financial support from the personnel directors at three
major retail stores. Each faculty intern was assigned to work directly
with a retail buyer. Responsibilities were clarified related to the com-
petencies identified in the fashion merchandising curriculum, and arrange-
ments were made to collect the data for the mini-research project.
Evaluation Strategy. As coordinator I monitored the three FPDI students. Two conferences were pre-scheduled at each store and included store personnel, the faculty intern, and the OSU coordinator. An implementation conference was arranged to initiate each FPDI and to assure clarification of the educational objectives. An assessment conference was scheduled in each store midway during the "off campus" period to assure achievement of the FPDI purposes and to resolve any problems or misunderstandings that might have arisen.

Each faculty intern was evaluated on the basis of "on campus" and "off campus" achievements including assessment conferences, summary reports, mini-research reports, and evidences of other learning experiences during the FPDI. (A detailed model of the FPDI Program follows.)

Results and Benefits. One faculty intern had a PhD and was on sabbatical leave. She returned to her former teaching position and is presently implementing several changes in the fashion merchandising program that she coordinates. A second faculty intern returned to OSU and is completing her master's degree. She plans to return next summer to the retail store where she interned, but expects to teach at the college level in the future. The third faculty intern accepted a position with the retail store where she did her FPDI; however, she has a master's degree and plans to obtain a PhD in the future.

The proposed program results and benefits were to:

1. Maximize faculty contribution to (1) curriculum development and evaluation, (2) research in career fields, and (3) student advisement.
2. Make the career-oriented curricula and specialized courses requirement relevant and current.
3. Provide competency-based measures of acceptability for educational programs with career-oriented objectives.
4. Establish rapport with employees in business fields related to support-matter areas.

Comments from the three faculty interns and from retail store personnel involved in the FPDI indicated that the purposes were achieved and that the proposed results and benefits were realistic.

A recent survey of internships in home economics units affiliated with the American Home Economics Association revealed that internships were required in two-thirds of the undergraduate programs; however, only a small percentage (12.8%) of the graduate programs required internships. Graduate level faculty renewal programs such as the FPDI can encourage updating of faculty and maintaining of relevant curriculum for career-oriented students. A working relationship between the academic and the business worlds must be maintained in the next decade if higher education is to play an active role in the preparation of today's youth for tomorrow's work force.

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Faculty Professional Development Internship
Model Program

Course Description
• Individualized career-related internships for faculty renewal.
• Update of knowledge and verification of job profiles based on learning experiences in selected work situations in the fashion industry

Major Objectives
1. Identify current career information needed by prospective retail buyers or faculty teaching fashion merchandising.
2. Update job profile for positions in the fashion industry that relate to clothing, textiles, and merchandising.
3. Clarify career-oriented competencies for use in development and evaluation of specialized curriculum options.
4. Become more aware of research needs and techniques related to marketing fashion products.

Program Format
On Campus - 6 to 8 weeks (80-90 hrs.)
Formal class - (approximately 60 hrs., 6-8 hrs. week)
1. Review content of specialized courses and observe classes in specialized areas.
2. Study existing career information related to internship assignment.
3. Review literature concerned with marketing research and competency based curricula evaluation.
Independent study - (approximately 30 hrs., 3-5 hrs. week)
1. Develop proposal for mini research project and obtain approval of faculty and job supervisors.
2. Prepare individual guidelines for internship.

Off Campus - 8 to 10 weeks (400 hrs.)
1. Participate in or observe activities related to responsibilities of selected job in specific career area.
2. Complete mini research project.
3. Prepare written report of internship and mini research project.

Role of Faculty Internship Director
1. Direct formal class and independent study on campus.
2. Arrange and monitor internship off campus.
3. Schedule on-site implementation and assessment conference.
4. Evaluate interns on-campus and off-campus achievements.
5. Make needed revisions in faculty internship program.

Role of Job Internship Supervisor
1. Assist in planning internship and assign job responsibilities.
2. Maintain quality learning experiences during internship and aid in achievement of research goals established for internship.
3. Assess performance of intern on the job.
4. Make suggestions for improvement of faculty internship program.

Evaluation Strategy
1. Establish on-campus achievements of intern based on: individual guidelines, including kinds of update knowledge related to functional areas of retailing (accounting and control, buying and merchandising, operation and management, advertising and promotion); proposal for mini research project; directed readings.

2. Establish off-campus performance of intern based on: assessment conferences; daily log; three periodic summaries of activities; final report; mini research report and other evidences of learning experiences during internship.
The retailing coop program at the University of Maryland started eight years ago on a part-time basis with Woodward & Lothrop and Sears. The program has changed quite a bit since then, and many of the changes were suggested by the stores and the students.

The program today includes many more stores and is offered on a full-time as well as part-time basis for approximately 30 students. The full-time program is six credits and includes 40 hours of store work. The part-time program is three credits and includes 20 hours of store work. About two-thirds of the students take the program on a full-time basis. The program is offered in the summer, fall, and spring semesters, although very few students register for the program in the spring. The limiting factor in the spring is the stores--larger department and specialty stores feel that there are more opportunities to expose the students to a wider range of activities during the summer and fall, and that the students will get a better sense of the pace of the business at this time.

All students who participate in the program must have senior standing and must have completed Fashion Merchandising, a course that is offered through the Department of Textiles and Consumer Economics. The students also should have completed a number of business courses such as marketing, accounting, advertising, and management. Some of the stores, the department stores in particular, require previous retailing experience in sales.

Students who want to do the full-time program must plan to get credits ahead or take the program over the summer. It is suggested that the full-time coop students register for no more than nine credits during the semester they take the program, which means that they may register for one evening course in addition to the program. The students in the part-time program have more flexibility and can usually fit the program into a regular 15-credit semester that includes the 3 credits for the program.

The full-time program is set up with department stores and large specialty stores such as Woodward & Lothrop, Hecht's, Garfinckel's, Hutzler's, and I. Magnin. The part-time program is set up with smaller specialty stores such as Casual Corner, The Limited, and Ups 'N Downs. Some of the stores participating in the program may change each semester depending on student and store interest.

The form the program takes varies from store to store. Some of the larger stores provide weekly seminars on topics such as store organization and marketing. The seminars give the students exposure to areas that they may not have direct contact with during their coop. The seminars also help to explain the procedures and systems that the students will be using on the sales floor or in the buyer's office. In general, the programs in the larger stores are more structured. In the smaller stores, transfer of information is less formal. Some of the specialty stores in the program are regional training centers for new managers, and our students can take advantage of some of this training. In addition, many of these store managers were in coop programs when they were in college and
are sensitive to the students' need for meaningful training and experiences. The students in the speciality stores are expected to do a lot of selling. However, these stores are willing to take on students who have not had any previous retailing experience. This experience is very important, because retailers rarely consider a college graduate for their management training program who has not had some kind of retailing experience.

Besides giving the students practical work experience, the program also can help them decide if they really want a career in retailing. The students get a chance to see how buyers and managers work, the number of hours they put in, and the problems that they have to deal with. The students observe the day-to-day activities of these people and because of this, the program helps to set straight many of the misconceptions students have about the "glamour" of retailing. The students also obtain insights into how people work with other people at many different levels in the company.

The retail work-study program at Maryland is not a requirement for the students in the marketing/merchandising option. However, it is highly recommended. The credits for the program are used as department electives. I screen the applicants to the program for eligibility. I also discuss with the student what store or what type of store the student would like to work in. I arrange interviews for the students, but it is the store itself that actually selects the students.

Before the students start the program, I have an orientation session for them. I try to brief them on how to get the most out of the program. I strongly believe that a successful program depends on input from the students as well as from the stores. I encourage them to take the initiative in the program and not to feel that they are being slighted if someone in the store does not sit down with them each day to instruct them in some aspect of retailing. The student is encouraged to ask questions, volunteer for activities, and seek out alumni who are working in the store. They also have to be prepared for the fact that retailing is not an exact science, that things do not always go as planned, and that they must be flexible.

I also bring in a student who has just completed the work-study experience, and have that student tell the new group what they can expect realistically from the program.

During the seminar I give the students a packet of readings. There are about 15 articles in the packet. Some of the articles are on retailing trends, others are on the Washington, D.C. market, and others are on the store the student will be working in. Besides acquainting the student with the store they will be working in, the articles give them information on other types of retailers and systems of retailing. These articles also give the students background information for their papers. The articles help provide information required for analysis that the student might not be able to get from the store, such as information on selling expenses or sales volume per square foot. The packets change each semester, some of the basic articles stay and others are updated. At the end of the program the students turn in their packets of readings plus three additional articles they have found on their store or the Washington retail market. This requirement encourages them to read the local business pages, Women's Wear Daily, or other national business magazines.
Each work-study student is required to write four papers during the semester. The first paper deals with the store's history and organizational structure. The second paper is on the merchandising philosophies of the store, and should include information on markups, markdowns, selling strategies, turnover, seasonal factors, sales and other promotional activities, and frequency of advertising and media used. Information on key resources and nationally branded merchandise is also included in the paper. The third paper involves market analysis and a look at the store's competition. The fourth paper's topic is student selected. The purpose of the papers is to help the students analyze what they are doing and to encourage them to talk to many different people throughout the store as they gather information.

As faculty adviser for the program, I try to make at least two store visits, one of the visits is usually at the beginning of the semester to discuss the program with store personnel. This is particularly important if the store is new to the program. At the end of the program, the store coordinator fills out an evaluation form on the student's performance. The students are encouraged to review these forms when they return to campus.

We feel the program at Maryland has been quite successful. Most of the students who have participated in the program have gone on to careers in retailing and many have stayed with the stores that they trained in. Completing a coop program has given our students an edge in getting into a store's regular management training program, which for some stores, such as Woodward & Lothrop, is very competitive.

The Auburn University Internship Experience

Mary Barry
Auburn University

There are several areas I would like to cover in telling you about our Fashion Merchandising Internship Program at Auburn University. These are (1) the reason why we have an internship program, (2) how the previous experience of the faculty member influences the development of an internship program, (3) how the type of student involved in the internship program determines its development, and (4) how the geographic area in which the school, faculty member, and students are situated can change the internship program. I will include how we prepare our students for the internship, what we require of our students, where we have placed interns, and how we try to avoid potential problems through mutual cooperation and sharing. I feel ACPTC can expand, improve, and increase our students' impact within our schools, communities, state, industry, and government, and I appreciate this opportunity for dialogue within our group.

Auburn University has an internship program because of two primary benefits to the students, the faculty, and school. First, an internship program allows the student and employer to explore mutually beneficial factors that could result in long-term employment opportunities. When closely supervised, it is like the apprentice program of the Middle Ages. The faculty member can intercede to correct situations before they
become liabilities to both students and employers. Open communication is essential during this approximately ten-week internship program. Faculty counseling over the phone, through letters, and interaction during store visits can turn potential problems into opportunities. Often an employer's or supervisor's constant time pressure can cause them to ignore the student. The faculty member when speaking with the supervisor can ask about the students' strengths and barriers that keep students from being as effective as they might be.

Second, new developments in retailing learned from students or store personnel can serve as vital information for updating, improving, or correcting flaws in the specific courses taught for fashion merchandising students as well as in the overall curriculum. Specification buying and computer usage are two recent examples. Through a sound base provided by clothing construction courses emphasis could be placed on problems, concerns, and methods of apparel production and merchandising. Such inclusions would better prepare students for the challenge of current developments and for buying and merchandising decisions and responsibilities.

Third, a good internship program can allow opportunities for student recruitment for both undergraduate and graduate programs. Competent students, the product of our schools, are the best advertisements we have--our students sell our programs. Internships give us the exposure to government and industry we need.

Now let us examine how the previous experience of the faculty member influences the development of an internship program. In my particular case, I worked at G. Fox and Co. in Hartford, Connecticut all the way through high school, college, and graduate school at NYU, where I received an MS in Retailing. For many years G. Fox has had a philosophy that the customer is always right and has to be taken care of at all times. During my 15 years experience as an assistant buyer in the children's department, as a young jr. buyer and as a hosiery buyer, I had the opportunity to work with many student interns. At G. Fox and Co. we worked with interns from high school distributive education programs, state institutions for the physically and mentally handicapped, two-year college programs, and MBA programs at Harvard Business School, the Wharton School, Dartmouth, and Stanford University. Other schools and foreign institutions, especially the Scandinavian and Japanese Foundations, also participated. I always felt those students who were most successful had chosen the store and were heavily committed to the merchandising philosophy of G. Fox and Co. This commitment by the student to the merchandising philosophy of the selected store is the bias that influences our internship program at Auburn University.

Another major point about our Fashion Merchandising program is the students themselves. I believe that the type of student involved in the internship program greatly influences the development of that program. Our students at Auburn are less urban oriented, have been more protected, and are more dependent on others for decision making than those students with whom I worked as a buyer. At that time I taught at Hartford College, a school started during the depression by insurance, textiles, and engineering executives for their daughters, as a branch of Mt. Holyoke University. This school had a more sophisticated student population in which parental influence encouraged strong self-direction and strong student egos. My efforts at Auburn have been towards encouraging students to move in this direction. This is parti-
cularly important because self-direction is essential for success in retailing. Students select the store where they will do their internship and make contact through letters, phone calls, and visits to the internship site. This experience is invaluable in building their self-confidence and self-directedness. I feel that students should visit the city and store before they make their final selection. Stores always want your "best students," so this method solves another problem too. I can honestly tell store personnel that this student is the "best student" for their store because the student has determined through personal investigation that they will be able to mesh their abilities and the store's needs. This method enables me to avoid comparing and contrasting students with personnel directors.

Fourth, the geographic area of the school, the faculty member, and the individual student provide opportunities and limitations. Auburn University, a land-grant university, is situated in a town with a population of 25,000. Montgomery, the state capitol, is 60 miles away, while Alabama's largest city--Birmingham--and Atlanta, Georgia are each 120 miles away. Excellent stores are located in each of these areas. Within a 30- or 40-mile radius of the campus are major and minor textile, home furnishing, and apparel manufacturers that provide excellent facilities for field trips, classroom speakers, and expanded internship opportunities for our fashion merchandising students.

Having covered some of the general aspects of our internship program, I would now like to tell you how we prepare our students for the internship, what we require, where our students intern, and how we try to avoid potential problems. All fashion merchandising students are required to enroll the winter quarter of their junior year in a two-credit course called Preparation for the Practicum. This course meets two hours one afternoon a week for ten weeks. Our present text is *What Color Is Your Parachute* (A Practical Manual for Job-Hunters and Career Changers) by Richard Nelson Bolles. It helps achieve my goal of education--leading students out--as opposed to directing students. Students prepare a resume, practice interviewing each other, present weekly summaries concerning current store and industry happenings, and write a major paper. In this paper the students cover the stores or sites in which they would most like to do their internship. In the same paper they are required to examine a store in which they would least like to do their internship. This allows students to explore options and confine their poor internship choices to paper rather than real life. Students can and often do find fulfillment in differing internship placements. These differences surface in this class. In addition since fashion merchandising is an umbrella under which various opportunities exist, class discussion serves to help students clearly identify their own particular strengths and preferences, and thereby choose their internship situation on a rational basis rather than by impulse. Fiber, yarn, fabric, and apparel companies as well as various types of retail, museum, fashion, government, and promotional establishments are examined in this class.

A two-hour practicum class offers many advantages. Concentration on career choice occurs over a longer period of uninterrupted time. An afternoon class facilitates industry involvement by making field trips and speakers easier to arrange. Buyers, textile and apparel marketing and management executives, and personnel directors speak to the class. Information from the personnel director of a store or industry has far
greater impact than my statements. It also expands and reinforces information that has been discussed in other classes.

During the internship I require that students write me a weekly letter and call me at school or home when they have a problem. Two weeks before the end of the quarter, students must turn in a notebook containing a completed sample of each piece of paper work used in the store, a daily diary, twenty interviews they have conducted with a variety of store personnel, an evaluation of both our courses and themselves, suggestions for improvements in course content, and a project that will improve or benefit the firm where the internship is taking place. Outstanding projects have often been printed with both student and university name on them and distributed throughout the internship site. Shoplifting, product knowledge, and handbooks for new employees are examples of successful projects done by student during their internship.

The requirement of a weekly letter enables me to know what is going on in a variety of places. It allows me to take immediate corrective action where needed. In one instance I had a black student who became involved in a serious racial issue; I knew at once what was going on and could react immediately. Often discussion with the student and the supervisor or a fellow worker can allow each to see the other's point of view.

The notebook and daily diary requirements provide many details concerning the internship. By examining the notebook I can know that the student is aware of and can fill out all the forms used at the intern site. The diary enables students to see their progress over time. Often on reflection a problem, when written down, becomes smaller.

In order to insure that interns know their internship site well, I require that they conduct 20 interviews with various store personnel. This exposes the student to a variety of viewpoints about the retailing experience. It helps them to understand the function of the work place and the urgency that characterizes fashion merchandising. This also insures at least 20 lectures from the internship site classroom.

At the end of the internship, evaluation of self, of the courses, and of our general program is encouraged and feedback loops are established at all levels.

The final aspect I will cover is intern placement. We place interns throughout the United States and have had interns in Asia and Europe. For the past six years I have taken students to Europe on a Fashion Merchandising Study Trip for which students receive university credit. During this trip students may interview in Italy, France, and England for internships. London, because of the lack of language difficulty, has proven the most successful place for European student internship placement. At present we have several former London student interns working in Atlanta who believe that their job progress was accelerated because of their overseas internships.

During the practicum, our students are encouraged to consider geographical advantages in selecting an internship site. Most students select Birmingham, Montgomery, Atlanta, Washington, D.C., or the Houston area. Also, because of family or male ties, such places as Vancouver, B.C.; San Francisco; Los Angeles; Chicago; New York; Memphis; or areas within the states of Texas, Mississippi, Tennessee, Alabama, Louisiana Florida, or Georgia have been selected.

While many of our students have chosen retail stores, some have selected government offices, apparel manufacturing and textile firms,
or public relations firms for their internships. We try to encourage our students to explore options with a belief that personal growth can best be achieved through work that enhances both the student and the employer. We strive constantly to update, expand, and improve our program.

I have encountered and endeavored to correct several problems. These include students who have slept with their employers, which in turn interferes with their day-to-day work relationship. In class I tell students in jest to sleep with anyone in town but not with "their bosses" during their internship program. When they do, it causes trouble for me, the school, the store, and eventually themselves. Although this has only happened three times in seven years, the potential problems are great enough that stressing professional business conduct saves me, the university, and student unwanted embarrassment.

The warning to avoid personal conversations, either over the phone or with friends in the store, is repeated constantly since students may often err in not drawing the line between social and business conduct. Again unprofessional conduct interferes with a good day-to-day professional work code.

Finally, the sense of priorities needed to make a profit, and the preparation for profitmaking and practical fashion merchandising are constantly stressed—along with the long hours, the frustrations, and the fun of fashion merchandising. Whenever possible, former students are asked to attend class, professional organization meetings, or informal student gatherings to share their expertise. A growing, developing, expanding internship program is fun, and it keeps me on my toes. When students do not perform well, I know that I need to change classroom procedures, and this enables me to learn and grow. My goal is to have a good internship program that improves my classroom teaching, our overall program, and the caliber of our graduates.

Having an internship program every quarter except winter means that we have a constant flow of communication with interns. The pace of a fall internship precludes buying and office activities but does provide excellent supervising and pressure experiences. Spring and summer internships can provide opportunities for greater planning and even some market trips. We believe an internship program that is flexible with timing, geographic area and type of institution provides students with many opportunities.

Internship/Work-Experience Programs

Joseph C. Culver
Divisional Vice President, Human Resources
Woodward & Lothrop

Before I begin, I feel I should take just a moment to tell you a little bit about Woodward & Lothrop. Woodies (as we are commonly known) is the major full-line, full-service department store in the Washington D.C. area. We are an independent, publicly-owned store and are active members of the Associated Merchandising Corporation. This year marks our 100th anniversary in the retail business and also marks our entry
into the Baltimore market. We currently have 15 stores in the Washington, Maryland, Virginia metropolitan area and employ over 9,000 employees.

In addition, we operate two distribution and service facilities handling areas such as receiving, marking, traffic, distribution, and delivery, as well as our many customer services like dry cleaning, fur repair, drapery and upholstery fabrication, home improvements, jewelry repair, engraving, and printing. We are a steadily expanding corporation and are constantly aware of our need and responsibility to develop future management talent.

If you've come to hear my opinion on Cooperative Education, I won't keep you waiting any longer. Coop work experiences are the most cost effective, valid selection tools available to retailers today. Yes, many companies engage coops to fulfill their corporate responsibility to the world of education; however, if that's their only reason, they are wasting their money.

Since 1974, Woodies has employed 176 coop students from 38 universities. Of these 176 students, some 62 or over 35 percent have returned to us as management trainees. This has been one of the greatest factors affecting our low (10%) first-year management trainee turnover. In addition, it has benefited trainees who were not coops by easing their adjustment to the working world through exposure to former coop trainees.

The next less obvious but just as important benefit is that at the end of the coop period, we send 15 Woodies student recruiters back to some 10 to 15 college campuses. That is, we do provided that we have given the students a meaningful, experiential, solid exposure to the retail business in general and Woodies in particular. That above all is what keeps us honest--keeps us aware of what's going on in our workshops and in our workplace.

Twice a year, in June and September, we conduct a coop program. The students come to us from a variety of colleges, with an even greater variety of experiences. The only things they have in common are their interest in retail careers and the fact that they will receive some amount of college credit for their experience. Some students are interviewed on campus while others will come to us for their selection. All students should have some sales background and should be considering a career in retailing. Once students are selected they become part of a 15 to 20 student coop class.

Our approach to coop experiences is very basic. We feel it is an extension of the students' college education whereby we share in that education process. How we share in that process, however, is where we depart from traditional academia.

The biggest potential danger in setting up a coop program is to look upon it as a source of inexpensive labor. Believe me when I tell you there are many other methods available to us for recruiting cost-effective labor. Our productivity goals for our coop students are totally different than those of any other segment of our work force. We attempt to schedule the coop sessions during periods where we can best expose the students to different aspects of our business. The summer coops, for example, may be placed in several different buying offices during their 12 weeks. The experience they gain and the varied merchandise exposure they receive would be difficult to duplicate during any other time of the year.

On the other hand, the fall coops have the unique opportunity to monitor the planning, buying, and selling of our busiest seasons' mer-
chandise. This too, would be difficult to simulate in a classroom situation. Our intent is to expose the student to as much of our business as possible to enable them to make an intelligent career decision.

Our coop program is not totally experiential. The coops start off with three days of intense orientation, policy, and sales training. We insist upon this because at some point during their 12 weeks we will be switching them from a buying function to a selling department. Too many retail recruits come to us to become specialists. They feel for some reason that selling merchandise is below them and that they only want to buy. We strongly disagree for two basic reasons.

First, you can't really effectively know what merchandise to buy unless you know what can potentially sell. Second and more important, we are in the business of selling merchandise and all of our management personnel must not only be aware of that fact but should have the ability to do so.

From there the students are assigned to their departments. This too cannot be accomplished without some amount of planning. Each year we analyze the managers and buyers we have used as trainers for both coops and management trainees. As you might imagine, managers' skills as trainers range from satisfactory to very good. It is our responsibility to make sure that we are using the very good trainers. No matter how good our program is, it is wasted if we don't use our better trainers and role models. These people are what make our program work. In a typical week coops will spend from 30 to 35 hours in their departments and from 5 to 10 hours in workshops. During that work week, our coops will hopefully see and do as much as possible to help them to understand the retail business.

When they meet once each week, the coops have a chance to exchange experiences with the other students. This can be an important part of the learning process as well. It's important for them to realize that, for instance, everyone does stock work or everyone straightens merchandise in the morning. Just as important, it gives us the opportunity to insure that the student isn't doing only stock work, or only straightening merchandise.

It's our opportunity to check on our trainers and once again keeps us informed as to what's happening when the students aren't in the classroom. The major portion of the weekly workshop is devoted to a lecture, discussion, presentation, or group project. Last September we had the opportunity to use several coop students to conduct a marketing research project in our Montgomery Mall store. The students were taught by our marketing department to conduct informal customer profile interviews. The results of these interviews will have a direct effect on many of the merchandising and marketing decisions aimed towards our Montgomery County stores.

Another project the group generally becomes involved with is our semi-annual inventory. The students have an opportunity to learn and participate in the planning, taking, supervising, and tabulating of our physical inventory. Although short in duration and at times repetitive in function, projects like these give the student the opportunity to observe a segment of the business from beginning to end.

Some of the other topics discussed during the weekly workshops include:

- **Organization structure**—an overview of the organization and re-
porting structure at Woodies.

- **Merchandise planning process**—how and why merchandise is selected for our stores.
- **Introduction to buying**—the art of negotiation and selection.
- **Merchandise distribution**—the physical flow of merchandise through our distribution process.
- **Introduction to suburban stores**—the role of suburban stores in sales and profit contribution.
- **Marketing and advertising**—customer identification, advertising planning, and philosophy.
- **Introduction to finance**—a look behind the scenes, an overview of statistical, accounting, accounts receivable and payable, credit and merchandise information.
- **Merchandise presentation**—the art of presenting merchandise to the customer for varying effects and purposes.
- **Labor relations and EEO**—the legal and ethical aspects of hiring, training, disciplining, and managing employees.
- **MBO**—overview of our corporate planning, budgeting, and performance appraisal system.

Due to the complexity of many of these topics, they are generally covered in a very superficial way. The intent is to provide the coops with some basic facts to aid them in seeing how the pieces all fit together. This helps in their overall understanding of our corporation as well as in performing the tasks to which they are assigned.

Our approach is to view the coops as mature young adults about to enter the working world. As I tell each class of coops, "If nothing else we would like you to return to school knowing whether or not retail is the career for you. If the answer is no, don't feel you have wasted your time. It's much better to know now than to experiment with your first career job. If you feel that retail is for you, then hopefully you will consider Woodies as the store for you."

I mentioned earlier that coops are cost-effective, valid selection tools. I say this because selection is a double-edged sword. If a coop student feels that Woodies is the kind of store where they will be both comfortable and have a future, then we have eliminated many of the unknowns normally associated with selection. By the same token, if the feedback and observations we get are also positive, then we are in a much more informed position to make a job offer that could result in a long and successful career for both the student and Woodies.
Retailing in the 80s: Model T's of the Future

William McDonald
Vice President for Marketing
Woodward & Lothrop

I. Introduction
A. The store: Woodward & Lothrop
   - $295 million
   - 15 downtown locations:
     - 16th under construction (in Baltimore)
     - building for a growing market that has now stabilized
B. Washington, D.C. (8th largest metro market)
   - Population: 3,072,100 (2,270,000 adults, 53.2% women)
   - Households: 1,066,800 (663,800 [54.9%] working women)
   - Income: $22,991 (2nd); 1 out of 3 families earn $25,000+
     Montgomery/Fairfax County
   - Affluent/educated contemporary market
   - Competition (4th in retail sales) Bloomingdale's, etc.
   - 3/10 men, 1/5 women with college degree; 52.4% with some college

II. Purpose
   - Look for trends and direction.
   - Provide insight to the future—a look at what might be anticipated as we approach the end of this century.
   - Present some thoughts based on the discussions and meetings held by some of those in the retailing industry concerning the year 2000. (AMC: Stores that are part of an association recognized as one of the leading retail groups in the country and consisting of members like Rich's, Atlanta; Foley's, Houston; Bloomingdale's, New York; Burdine's, Miami; Dayton's, Minneapolis; Hudson's, Detroit; etc.)
   - Look at the changes in the last 20 years to get some glimpse of where we might be going (it all depends on your perception).

III. Population: Why Changes Are the Key to the Future
A. Demographics a vital consideration
   - Changes in female population...critically important to the retail business since the woman is still responsible for 60% to 70% of total shopping within the traditional retail environment.
   - Significant trends in population growth for 13 to 18 year olds through retired. (Figs. 1-5 following)
   - Importance of the 25 to 34 year old category and the 35 to 44 year old market as market segments that make up 3/4 of the population over the balance of the next 20 years. Everyone will be after this market group. (Fig. 6)
An overwhelmingly adult, largely middle-aged population

- 25 to 44 year olds will increase 29% by 1990. They have already gotten the label "the nesters" since this is viewed to be the generation of the 1980s. Here is where the families will exist.
- 45 to 64 year olds, commonly referred to as the "empty nesters," will have a modest 5% increase (small families).
- The elderly, ages 65 and over, will increase 22% to 30 million.

- Smaller households, but more of them. (Fig. 7)
- Number of households will grow from 63 million to 94 million, an increase of approximately 49% since 1970.
- Number of persons per households will decline from 3.14 to 2.60, a significant figure to retailing.
- One person households will now amount to over 1/4 over all households in the U.S.A.

- The above are critical implications.

B. Income
- Inflation negates value of presenting income statistics.
- A few points can be made when viewed on a constant dollar basis.
  - Of families with incomes of $25,000 a year, less than 25% have only one wage earner--or 75% of the families in the $25,000 and above income range have two or more wage earners.
  - History of the $25,000 and over income category.
    - 1965 - 8% of the families
    - 1975 - 14% (actually doubled the number of families)
    - 1985 - 30% of families (will have $25,000 income, which is going to amount to about 60% of the total personal income)

- Significance: by the mid-1980s the 25 to 34 age group will be dominated by $25,000+ income families as a largest target market, and the second largest target market will be 35 to 44 year olds with $25,000+ income...key statistics to retailing in the 1980s.

IV. Defining the Model "T's"
A. Time Constraints
- An era of competition for time--people want to experience everything.
- Working women (housewife in minority)
  - 1950-25% worked; today 52% work
  - Only 85% of adult men work today
  - Less time for leisure
  - First time 51% of college students are women

- Changing couples (changing lifestyle patterns)
  - Less time for shopping (competes with leisure)
  - "Blurring of roles"--more men will be doing tasks regarded as belonging to women, i.e.; shopping, cooking, etc. (A headline in the October 16, 1980 edition of the Wall Street Journal, "Men of the house: more working wives introduce their husbands to the joy of cooking, other chores."

B. Trading Up
A. Changing consumer values
- Families, in the classical sense, are changing.
- Fewer children--approval of childlessness in the U.S. at an all time high; vacations without children; more single family households.
- New values taken over in the 70s
  - Fear of crime
  - Skepticism about America
  - Short term economic concerns
  - In the 70s approximately 65% of all adults had graduated from
high school and 15% had completed college. During the 80s these figures will grow to 80% with high school degrees and over 25% with college competition. Value changes have to result.

- Recognition that "new values" may carry long range penalties
- Energy: The worst of the energy impact may yet occur. Recent surveys indicate energy as a necessity of life. This one topic alone will probably be the single most influencing factor on trade-up values during the 1980s.
- New morality for children has resulted in an increased crime level among teenagers in today's age, the total effect of which is yet to be known.

- The self-fulfillment dilemma (the individual)
  - Time for the full, rich life
  - Return to nature
  - What is part of our lives now vs. 20 years ago

- We are entering the era where trading up in the traditional sense is no longer possible and will have to be accomplished through other forms. American children are being told that things are better today than they will be tomorrow.

C. Technology

- People are seeking technological benefits for all kinds of problems.
- The automobile has been a primary influence in shaping life conditions.
- Households can be readily converted to the telecommunications system.
- We must examine the question of future shopping practices, particularly as they relate to working women...and businesses and industry that are continuing to move into the suburbs.
- It is estimated that by the end of the 1980s approximately 85% of all working people will have access to a computer as a part of their job function.
- The cost of computer technology has dropped dramatically. In the mid-50s a particular computer unit cost approximately $1.5 million. By the mid-60s the price of a computer designed to accomplish the same tasks had dropped to 1/2 of that; in the 1970s to 1/8; in the 1980s to 1/30; and by 1990 it is estimated that the computer to accomplish the same functions will cost 1/300 of the original $1.5 million, or $5,000.
- What is happening
  - Electronic scanners at checkouts
  - Magic wand systems
  - Single transaction inventories
  - Video cassette units
  - IBM/Simpson Sears Computer Telephones

D. Theater

- Competition for leisure time
- Shopping as an entertainment experience

V. Retailing is Changing

A. Inventory management and control
- New systems (lagging technology)
• New types of operation for the future
• Increased productivity per square foot

B. People productivity: The changes in America's demographic profile have profound implications for many segments of the retail industry. These changes will be most pronounced in the available labor supply and the mix of employees in the retail business. There probably will be a shortage of high school-age applicants for entry level positions (salespeople) as this segment of the population is shrinking. With a larger portion of the population entering the labor force with a higher educational level, shortages of unskilled labor will be evident.

C. Store locations
• Not overbuilding
• Effective site location
• New store concepts
• Rigid application

D. Recognition of the marketing function
• Lack in the past
• Sears/J.C. Penney leaders
• Now at regional level
• Functional responsibility

VI. What's in Store for the Media

A. The evolution of retailing
• Started with shops
• 1890 - department stores (clusters of shops)
• 1930 - supermarkets
• 1950 - discounting (price the key factor)
• 1970 - lifestyle merchandising; specialist merchandising (hi fi's, skis, music); service merchandising (refrigerators)
• 1990 - malls (major multi-store complexes); marts (strip centers and elimination of single unit sites); non-stores

B. Impact of electronics
• Not just television; some retailers jumped into television without evaluating the vehicle and its proper use.
• Video disc: 25%-50% of the homes will have video discs between 1985 and 1990. The importance of its technological advantages can be mind boggling.

C. Non-store retailing
• Mail order estimated to be a $7 billion business
• Catalogs (the nature of the catalog may change)
• Telephone
• Radio: An economical, flexible vehicle that can be imaginative and has strong target capabilities. (Reviving of old "series" is a beginning indication, as used by Sears.)

D. Media mix
• Target marketing (the importance to economic success)
  - There are 73 to 74 million households in the United States:
    - 15% are male working-female at home situations, with a child under 18.
    - 21% of the households are single adults; 30% are two-adult
households. Over half the population is either single or a two-member adult household.

There is much to consider. Perhaps it is best reflected in the following quote from Forbes magazine.

"The smart businessman pays as much attention to changing social customs and tastes as he does to economic trends. He knows that in a consumer economy like ours, shifts of demand within the economy can be as important as the direction of the economy itself. For example, retailers who caught the social economic significance of the post-World War II move to the suburbs, they prospered. Those who stayed only in the cities fell behind. Companies that figured the baby boom would go on forever were in trouble when small families suddenly became the vogue. Detroit at first ignored the shift to smaller cars, and Volkswagen and the Japanese walked off with a bigger piece of the U.S. market. It's an ability to sniff out these social trends and to capitalize on them that enables some companies to beat the economic targets."
Pants Alteration by Graphic Somatometry Techniques

Carol Jean Todd Pouliot and Jane A. Farrell, Iowa State University

The goal of this research was to develop a method of pants pattern alteration that incorporates body measurements, graphing techniques, and measurements of body angles. Profile and back-view somatographs were taken for 36 female volunteers, and models were chosen to represent five different figure types (one model per figure type). The figure types used in this study were round, pear-shaped, average, weight in front, and weight in back.

The somatographs of each of the models were analyzed as graphic representations of the body, and data points that described the body's contours were selected.

Two computer programs that used correction for distortion, approximation of length along a line, quadratic interpolation, and cubic spline interpolation were developed to correct and plot full-scale representations of the body curves. The resulting plots were measured for dart size and length and crotch depth. Center front, center back, and sideseams also were developed from the plots by a system using measurement of body circumference and body proportions. A second set of pants patterns were altered by the Unit Method of pattern alteration, which uses only measurements of body circumference and length. Muslins were constructed for each model from both the Experimental Method and the Unit Method pants patterns.

Two rating scales were developed to analyze the fit of the pants muslins. The first scale was an evaluative scale, and was used to determine if the fit were bad or good. The second scale was a diagnostic scale, and was used to qualify the ratings given on the evaluative scale. Three judges were trained to use these rating scales to evaluate the fit of the ten first-fit pants muslins (two muslins per model).

The judges' responses were analyzed by a three-way analysis of variance and by examination of the means. Examination of the means showed that the Experimental Method was preferred for the following criteria: front waist placement, front waist dart size, back crotch curve, and the horizontal grain. For all other criteria, the fit produced by the two methods of alteration was the same.

An Engineered Method for Fitting Garments to Problem Figures*

Helen I. Douty and Judith E. Ziegler, Auburn University, AL

A human factors approach to garment design and fit requires that plans for garments be based on the actual shape and structure of the bodies for which the garments shells are intended. Therefore, "graphic
somatometry" was used to identify configurations of problem figures and quantify the alterations needed for adjusting standard patterns to their needs; application techniques were based on previous research and classroom explorations. This study refined this scientific method and tested its effectiveness when compared to a traditional method of pattern alteration and garment fitting under controlled conditions.

Standard basic muslin dresses were made for 12 selected subjects (mature women and college students) with a single major figure problem to multiple major problems. Garments, made by the researchers, utilized two methods: Control—a customary method of pattern preparation and garment fitting, and Experimental—the engineered method. The latter method included detailed measurements, to establish dimensions, and somatographs (photos of silhouettes projected onto a graph-screen) to show proportions of body segments, for contour analysis, and to make angle measurements. For the Experimentals, one test fitting of the pattern was held prior to cutting. Dresses were rated at First and Final sessions with only two fitting sessions per dress. Two trained raters made numerical evaluations of quality of fit on a rating form developed for the purpose. Photographs of all garments were made. Content analysis of all records aided in validating and explaining results.

The following hypotheses were tested:

1) Final Ratings will be higher than First Ratings for both Control and Experimental garments—confirmed.

2) The difference between First and Final Ratings will be greater for Controls than for Experimentals—confirmed.

3) The fit will be better for Experimental garments than for Controls at First and Final Ratings—confirmed.

4) For the Experimentals there will be fewer changes required after the First Rating than for the Controls—confirmed.

With highly significant Student's t-test results (p=.01 to .001), it was concluded that the Experimental method achieved markedly better results for most figures and for the group as a whole. While single major problem figures or those with minor irregularities could be adequately fitted by the Control method, for the complex multi-problem figures some results were marginally acceptable.

Although two fitting sessions were not adequate for achieving perfect fit for either method, the Experimental method generally succeeded in achieving a smooth, attractive appearance for all figures. It would be useful for intermediate and advanced classes to aid in developing greater understanding of garment structures and control of processes such as: 1) the complexities of shaping fabric smoothly to the contours of a static or moving body with changing shapes, 2) the principles that guide procedures, 3) increasing skill in application of these principles and 4) making decisions and testing them.

*Complete report available. Send $3.00 to Consumer Affairs Department, Auburn University, AL 36849.
Clothing designers capture certain feelings in their creations, often intuitively, by combining fabrics, trimming, and shapes to accomplish a certain "look." The look or mood expressed by a garment creates an affect response within an observer. A certain feeling about the garment and its wearer is perceived.

This study is based on the premise that creativity within garment design need not be solely based on intuition but that a "message" can be transmitted through the use of trained intuition and purposeful manipulation of materials and processes. The main objective was to approach the challenge of garment design through a logical, methodical system of thinking and planning with a goal of purposely achieving desired moods that would be expressed in harmonious blends of materials and processes.

Ten garments appropriate for the lifestyle of a professional career-oriented woman, each representative of an intended mood, were designed through manipulation of materials, the plastic elements, and art principles to achieve the desired goals. Five mood categories (dramatic, romantic, professional, sporty, and elegant) suitable for the career-apparel category, were chosen. Two garments for each mood category were designed and constructed to test the ability of a designer to manipulate fabrics, trimmings, and shapes to create similar feelings in different design.

An instrument, the Mood Identification Assessment Form (MIAF), consisting of 25 pretested descriptive adjectives, was developed to measure the responses of three selected groups of observers to the moods of each design and to the aesthetic quality of the garments. The sample of 89 observers included 17 trained in aesthetic principles, 18 FM students and 54 Pilot Club members. The latter two groups composed the untrained observer group.

Overall frequency rankings for all observers showed that for 8 out of 10 garments, observers chose at least 4 out of 5 adjectives that were descriptive of the intended mood. As was expected, ranking of the respondents' adjective choices from the MIAF revealed that several designs were more successful than others in transmitting the planned moods.

Factor analysis of selected descriptors successfully validated the MIAF instrument, with 5 factors accounting for 55% of the explained variance. Responses to design quality also varied. The design that rated highest on mood identification (dramatic) also rated lowest in design quality for some said they "would not wear it." All garments achieved design quality ratings from 3.139 to 4.69 on a 5.0 scale indicating perception of average to high Aesthetic Quality. The partial explained variance and the variation in evaluation of design quality support observations of the difference in the meaning of words for each observer, the relative popularity of styles and details due to fashion trends, and personal likes and dislikes that influence responses.

The completed analyses suggest that a logical, methodological approach need not stifle creativity but can result in aesthetically pleasing styles that can successfully express preplanned mood messages.
Clothing Knowledge of Selected Vocational Rehabilitation Counselors in Oklahoma

Sharon Holder Hinchey, Oklahoma State University

The purpose of the study was to investigate the knowledge of clothing for physically disabled persons held and used by selected vocational rehabilitation counselors in the state of Oklahoma. The term physically disabled was limited to those clients for whom it was necessary to make a clothing adaptation or modification in order to accommodate the disability. A total of 65 Oklahoma vocational rehabilitation counselors participated in the study. A self-administered instrument, developed by the researcher, was used to determine demographic characteristics of the participants. The clothing knowledge and usage portion of the instrument was used to determine the degree of clothing knowledge held and used by the participants. Dressing skills, fasteners, garment fit, fabric and garment selection, physical and psychological comfort, and clothing care were covered. A total score was obtained for each participant. Data were analyzed using number and percentages. T-test and analysis of variance were used to determine whether significant relationships existed between the participants' clothing knowledge and usage scores and variables such as sex of counselor, age, length of employment, number of physically disabled in caseload, and ease in discussing clothing with the opposite sex.

Over two-thirds of the counselors reported having from 1 to 10 clients who required alterations or modifications of their clothing. More than three-quarters of the counselors reported having had no exposure to clothing information. The mean scores for clothing knowledge out of a possible 126 were 107.3 for men and 112.1 for women. The mean scores for clothing usage out of a possible 45 were 31.6 for men and 31.9 for women participants. A significant difference (.02 level) existed for women counselors and clothing knowledge and usage scores. Male counselors felt ill at ease or only somewhat at ease when discussing clothing with female clients (.01 level). Forty-four (67.7%) counselors indicated a desire to have more information regarding clothing and physically disabled persons.

The Blind Student in the Clothing Construction Laboratory

Nora M. MacDonald and Sarah Jane Gibbons, West Virginia University

The purposes of this study were to develop curriculum materials for teaching clothing construction to blind students and to determine which options for teaching/learning sewing concepts were most successful. The seven elementary clothing construction concepts and procedures included in the study were: (1) grain, (2) pattern preparation and layout, (3) cutting, (4) machine threading, (5) machine tension, (6) machine stitching, and (7) machine stitched hems.

Modifications to techniques and/or equipment that would promote independence by the blind student were initially screened by blindfolding sighted college students and a totally blind college student during fall 1978. After revision, the materials were tested on two blind high school students and a blind rehabilitation client. After further refine-
ment thirteen lesson plans were prepared for teaching the identified concepts and procedures, which then were tested on five blind high school students during fall 1979.

All changes to technique and/or equipment were evaluated at each step in the construction process with the resulting modifications: (1) tactile illustrative material was used to explain the concept of grain, (2) masking tape around pattern edges served as an aid to cutting and as a tactile marker for pattern grainline, (3) Fiskar shears produced a more accurate cut edge than other shears tested, (4) a regular machine needle was more useful than one designed for the handicapped, (5) a seam guide attachment was used to produce straight seams, (6) layers of masking tape were placed on the machine bed to serve as a tactile marker for some procedures, (7) a notched seam gauge was a tactile guide for measuring, and (8) a machine-stitched hem was accurately prepared by slipping a measuring device into a fabric fold, pinning the raw edge of the folded fabric to the ironing board and pressing the fold. Sighted assistance was needed for pattern preparation.

Minor modifications to equipment and method of presentation were used so that simple clothing construction concepts that normally would be presented visually could be presented tactually. By providing students with effective alternatives and successful experiences, students were given the encouragement they needed to begin making individual choices and to sew independently. This study only begins to meet the needs of totally blind students in clothing construction laboratories. As the skill level and self-confidence of blind students increases, they will need to learn advanced techniques, requiring additional advanced study in the area of clothing construction for blind students.

Curriculum Movement of Clothing and Textiles Programs from Four-Year to Two-Year Colleges

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The number of two-year colleges has increased greatly since World War II, and many of these institutions now offer curricula in applied technologies that have become competitive with programs offered by their four-year colleagues. As an example of this phenomenon, clothing and textiles programs have developed and prospered at a large number of two-year institutions in the U.S. The purpose of this study was to examine curriculum and organizational variables in the two-year programs and to trace the four-year college or university's influence on the derivative two-year programs.

The general population, consisting of 265 institutions, was identified through the Directory of Post-Secondary Schools with Occupational Programs, 1975-76 (from HEW). The appropriate administrator at each school was asked to complete a questionnaire designed to elicit the desired information; 176 usable questionnaires were completed for a response rate of 66.4%.

Data were analyzed by use of chi-square tests and frequency analysis. Results were examined for these categories: (1) program goals, (2) department identification (whether a separate department), (3) length of
programs, (4) general education requirements, (5) employment of graduates, (6) size of faculties, (7) faculty qualifications, (8) program areas, and (9) enrollment. In addition, a comparison was made among the programs in public, private, and proprietary two-year colleges.

The university heritage and the strong influence of the university model for home economics was apparent in clothing and textiles programs at two-year institutions. If programs were organized as separate departments, the name frequently reflected a similar curriculum area found in four-year programs, except that names for the two-year programs were often more job-oriented. When programs were not separate departments, almost half were in home economics or family/consumer areas. Program areas in two-year institutions were similar to those in four-year colleges, although with a sharper job focus. This is consistent with the fact that a strong majority of students see immediate employment as their primary goal. Emphasis on immediate employment as the primary program goal also was like their professionally-oriented four-year counterparts. The two-year schools, however, gave secondary goals that were distinctive to their mission—preparation for four-year programs and general interest. Employment areas for graduates from two-year institutions showed that they enter many of the same entry level jobs as graduates from four-year programs. Curriculum movement also was seen in the academic calendar format used, in the attention given general education, and in concern for academic credentials of faculty.

Results of this study have implications for educators in four-year clothing and textile programs in comparing their curriculum with that of the shorter programs and in identifying patterns of articulation of two-year college students into four-year programs.

Interactive Effects of Locus of Control and Instructional Strategy on Academic Performance and Student Attitudes

Linda S. Medlen, The Ohio State University

The study focused on the interactive effects of locus of control and instructional strategy on academic performance. Student attitudes toward instruction and student work-group membership also were investigated.

The variables were locus of control (score on Rotter's Internal-External Locus of Control Scale), instructional strategy (conventional lecture-laboratory and problem-solving emphasis), and score on five criterion measures (four multiple choice unit tests and a final examination). The problem-solving emphasis approach was a modified version of Guided Design introduced by Wales and Stager. Student attitudes were assessed by means of responses to 30 statements following a Likert-type scale.

The interactive effects of locus of control and instructional strategy on the five criterion variables were determined by using two-way analysis of variance (ANOVA) on the combined data from the two semesters. There were no significant interactions or main effects at the .05 level. Subsequent analyses of variance for the purpose of evaluating contribution of each semester class revealed differing performance scores.
between the two strategies and the two semester classes. Autumn semester problem-solving subjects tended to excel beyond the lecture-laboratory subjects on the last two unit tests and the final examination. These results may indicate that the use of problem-solving skills in the study of textiles can improve achievement scores. The findings were not consistent between semester classes; the lecture-laboratory subjects tended to score higher than the problem-solving subjects spring semester on all five tests. Further evaluation of student performance by work-groups and unit test scores revealed no significant difference among groups; however, an .006 significance was found for the final examination indicating work-group membership was important when solving problem situations. Locus of control score did not appear to influence work-group membership on the basis of academic performance scores.

Paired tests were employed to ascertain the difference between pre- and post-locus of control mean scores. No significant difference was found; however, some shift was exhibited when students' scores for each semester were individually analyzed.

Student attitudes toward the course and the instructor were assessed as very favorable. However, some students expressed a dislike and resistance to the unit that was taught exclusively using the problem-solving approach. The two-hour problem-solving activities following the first three units of study were well received.

The findings have implications for instructional design with respect to problem-solving skills and academic performance. Further support is given to previous research indicating no significant interaction between strategy and locus of control when measured on the basis of academic performance. Additional research is indicated as a means of identifying the most appropriate fit between instructional strategy and individual student difference variables.

A Clothing Behavior Data Base: Investigation, Development, and Microcomputer Application

Sandra S. Hutton, University of Nebraska-Lincoln

Some writers have speculated that man is now entering the "information age" and the ability to retrieve and manipulate information will be crucial for optimal decision making in the future. The recent technological advances in the electronics microprocessor industry and the resulting development of microcomputers will revolutionize investigative efforts. It is likely that published reports will soon be available by electronic transmission through telephone lines directly to privately-owned microcomputers. Individuals will need to be able to access and arrange this information into some usable form. This paper described the development of a microcomputer system to store, manipulate, and prepare the clothing behavior literature published in periodicals between January 1975 and December 1979. The project was originally intended to serve as a model for social science researchers needing to process a large amount of published information, but the storage of this particular data should be an aid to clothing researchers.

Completion of the project required several separate areas of development: assessment of the clothing literature and development of a
method to analyze that literature; examination of existing computerized and noncomputerized sources of information retrieval; development of a microcomputer program to manipulate the data; and acquisition, analysis, and entry of the data into a microcomputer.

Five commercial data base storage and retrieval systems were accessed using words relevant to clothing behavior. A total of 1,207 citations were retrieved of which 328 (27.2%) were judged worthy of further investigation. Disagreeable problems with these commercial data bases included inaccurate classification under key words, expense, exclusion of reports published prior to 1970, and the exclusion of many publications dealing with clothing behavior. In addition to the search of these data bases, 13 indexing systems and 9 journals typically publishing reports of clothing were surveyed for citations to review for inclusion in the data base. Over 400 articles were originally included in the base.

The computer program, microcomputer equipment, and an overview of user access to information were discussed. The program is capable of storing bibliographic data and a summary or abstract of the reviewed articles. Searches of the data base can be performed by author, general subject matter content, publication date, type of report, key word descriptor, and certain combinations of these categories. Results of searches can be printed in one of three forms: citation only; citation, summary, and other classifying information; and creation of a file for word processing capabilities with eventual manuscript print-out.

The data base is most complete in the social psychological aspects of clothing, fashion theory, costume selection, applications for handicapped/elderly, clothing construction, and costume and textiles history. A number of citations are catalogued under textiles aesthetics/design, costume aesthetics/design, and functional clothing. No attempt was made to catalog textile science, the textile industry, or environmental clothing. Extension of the base in breadth and time-frame is planned.

Cognitive Style Dimensions of University Textiles/Clothing Students and Other Home Economics Students

Ellen Goldsberry, The Ohio State University

The study was designed to (1) identify selected cognitive style dimensions and learning style types of university Home Economics students, (2) investigate the extent to which Textiles/Clothing students differ from other Home Economics students on the identified characteristics, (3) investigate the extent of interaction among the dimensions, and (4) examine the extent to which the dimensions are related to achievement in courses requiring recognition of spatial relationships.

The limited research concerning the cognitive style dimensions of Home Economics students in general, and Textiles/Clothing students in particular, led to the plan for a descriptive study. A correlational design was selected since a number of characteristics were to be examined.

Data were collected from 211 students enrolled in undergraduate Ohio University Home Economics courses during the fall quarter, 1979-1980 academic year. Subjects were tested with the Successive Perception
Test-1, the Group Embedded Figures Test, and the Learning Style Inventory in order to assess the cognitive style factors of visual/haptic perceptual type as defined by Lowenfeld, field-independence/dependence as defined by Witkin and learning style types as defined by Kolb. The study sought to combine and compare these dimensions since previous research indicated apparent similarities.

Subjects were classified on all three measures and chi-square goodness-of-fit tests were used to compare expected and obtained distributions within classifications of types. Descriptive information was derived from frequency distributions, mean scores, standard deviations, ranges, plots, and profiles. Hypotheses testing included analyses using t-test, univariate ANOVA, chi-square goodness-of-fit test and Pearson product-moment correlations.

The findings indicated that Textiles/Clothing subjects did not differ significantly in perceptual type or learning style type from other Home Economics majors. Textiles/Clothing and Interior Design majors were more visually oriented than the other groups. Only 10% of the subjects (instead of the 25% expected) were identified as haptic—who would experience difficulty perceiving visual details of complex forms. The majority of students were classified as visual/field-independent in perceptual type, that is, they can distinguish details in complex forms with ease. They are reflective observers in learning style mode preferring to work with others rather than on their own. They are Diverger in learning style type, which implies imaginative ability and is characteristic of individuals who select careers in personnel, management, and counseling. Subjects identified as visual/field-independent also were found to be high achievers in courses requiring recognition of spatial recognition.

Textiles and Apparel

Longitudinal Wear Study of Four Work Shirts—Three Fire-Resistant and One Non-Fire-Resistant—Worn in Ferrous Metal Operations, King County, Washington

Jacqueline L. Sund and Rosalie R. King, University of Washington

Risk of burn injury is particularly great for persons employed in the metal trades. Exposures to molten metal, sparks, and/or open flame are present daily. A number of fabrics, either inherently fire-resistant or with fire-resistant finishes, are available on the market as utility and career apparel. The purpose of the study was to determine if the use of such garments by those employed in the metal trades could significantly reduce burn injury. Cost, wear life, and comfort were also important factors.

Several procedures were employed to reach conclusions related to the stated objectives. First, a questionnaire was distributed to 150 workers belonging to metal trades unions. Questions were directed to buying practices, fiber knowledge, and burn experience.

Second, a computer search was made of industrial burn injuries reported to the Department of Labor and Industries, State of Washington.
A comparison was made between recorded burn injury from the computer report and the burn experience reported in the questionnaire.

Third, laboratory and simulated shop testing was performed on six shirts that represented utility apparel; two were conventional, non-fire-resistant shirts (100% cotton and 65/35 polyester-cotton blend) and four were fire-resistant shirts (Fire Stop cotton, Flampro wool, Nomex III, and SEF modacrylic). The battery of tests included tear strength, abrasion resistance, ultraviolet irradiation effect, flammability, and spark and molten metal repulsion. Based on the results of the spark and molten metal tests, the 65/35 polyester-cotton blend and SEF modacrylic shirts were eliminated from further tests.

Fourth, a longitudinal wear test was conducted in a local facility having a foundry, forge shop, and welding shop. Twenty-one volunteers were given one shirt each of Nomex III, Fire Stop cotton, Flampro wool, and 100% cotton (untreated). The shirts were worn in rotation for a period of 12 weeks, each shirt had opportunity for 15 wear cycles. Each shirt was worn for one work shift only and then laundered according to AATCC test method 150-1979.

At the conclusion of the wear test the volunteers were questioned to determine their preferences of the tested shirts; burn experience occurring during the wear test and any unusual hazard exposures were reported. The shirts were evaluated by the investigators according to burn damage and wear.

Results of the testing showed Flampro wool and Fire Stop cotton to provide equal protection; 100% cotton and Nomex III exhibited nearly twice as much burn damage as the other shirt types. Eight of the volunteers sustained burn injury during the wear test. Thirty-one percent were wearing Nomex III, 25% - cotton, 25% - Flampro wool, and 19% - Fire Stop cotton. Considering a cost of from three to five times greater than conventional cotton shirts, it is questionable that the fire-resistant shirts gave proportionally greater service.

This study will be an ongoing project at the University of Washington.

Effects of Softeners on Inherently Flame Retardant Fabrics

Theresa A. Perenich, Kansas State University

The purpose of this study was to investigate the effects of fabric softeners on inherently flame retardant fabrics. The objectives of the study were to compare the effects of four different types of fabric softeners upon: (1) the flame retardance of three inherently flame retardant fabrics, (2) the color, weight and dimensional changes of the fabrics and (3) the fiber morphology of the fabrics.

Procedures

The three inherently flame retardant fabrics used were (1) a 100% Cordelan® pink terry, (2) a 75% Cordelan® 25% polyester blue terry and (3) a 80% Kohjin® 20% green stretch nylon fabric.

Four brands of fabric softeners were used: #1 (Rain Barrel®, S.C. Johnson & Sons, Inc.), a liquid softener added at the start of the wash cycle; #2 (Downy®, Procter & Gamble), a liquid softener added at the final rinse cycle; #3 (Cling Free®, Calgon Co., Inc.), an aerosol softener sprayed inside the dryer drum prior to adding clothes; and #4
(Bounce®, Procter & Gamble), a nonwoven sheet form softener placed in the dryer.

The fabrics were laundered a total of 50 times according to AATCC Test Method 124 III b in a Sears Kenmore Automatic washer (wash temperature 140°F, rinse temperature 105°F) with 90 grams of AATCC Standard Detergent 124 with FWA.

The flammability tests were conducted according to DOC FF 3-71. SEM photographs were taken after 10, 20, 30, 40 and 50 launderings using an ETEC Autoscan U-1 Electron Microscope. A Hunterlab Color Difference Meter D25 was used to determine L, a, b, ΔC and ΔE values. Weights and dimensions were determined after 50 launderings. A ten-person panel rated the fabrics for visual color changes using a scale of 1 (high) to 5 (no change).

Results and Implications

All of the fabrics met the flammability requirements of 50 launderings with each of the softener treatments. None of the samples had a char length of over 1.0 inch nor any residual flame time.

The ΔE values obtained represent total color differences between the original samples and after 50 launderings. The most pronounced color changes with each softener occurred with the 100% Cordelan® pink fabric (average ΔE of 13.31). The softener that most influenced a color change on each fabric was #2 (Downy) (average ΔE of 11.27). After 50 launderings the panelists rated each of the fabrics with softener #2 lower than with the other softeners. The lowest visual evaluations were obtained by the 100% Cordelan® fabrics regardless of softener type. The highest ΔE's also were obtained by the 100% Cordelan® fabrics (average ΔE = 13.31).

The scanning electron micrographs showed some deposits, fiber swelling and distortion after launderings but the changes were not specified to fabric or softener type.

Weight increases occurred with softeners #1, #3, and #4. Dimensional changes ranged from -0.4 inches to +9.2 inches. In this study, the serviceability of the fabrics was not altered in relation to flammability. However, serviceability would be impaired in relation to dimensional stability and color changes. These were significant enough so the fabrics would be considered unsatisfactory by consumers for continued use.

Consumer Response to the Tris Controversy

Carol E. Avery, University of Rhode Island

Tris, (2,3 dibromopropyl) phosphate, was widely used by the textile industry to meet the children's sleepwear standards DOC FF3-71 and FF5-74 until questions were raised about its potential as a mutagen and carcinogen. After a prolonged and acrimonious debate, the CPSC banned Tristreated fabrics from the market place in June 1977. This study was designed to investigate consumer response to the controversy and to identify changes in practices and in attitudes toward the use of flame retardant (FR) finishes for children's sleepwear.

The survey was conducted in Spring 1978 at 15 randomly selected nursery schools and daycare centers in Rhode Island. The questionnaire sought information on (1) consumer shopping practices, (2) awareness of and response to the Tris controversy, (3) knowledge of terms and prob-
lems related to the controversy, (4) sources of information, and (5) opinions concerning continued or expanded use of FR garments. A forced-choice question was used to determine the criteria consumers consider in selecting children's sleepwear. Data from 293 usable questionnaires were subjected to cluster and chi square analysis. Responses were related to selected demographic variables including personal experiences with fire and cancer. Comparisons also were made with the 1972 northeast regional study of FR textile items.

The respondents were comparatively young and well educated. The proportion of working mothers (48%) had doubled since the 1972 survey and income levels had risen. The number of homes in which smoking was reported had decreased. Fewer respondents (10%) reported experiences with fire but more (30%) knew others who had had fire episodes in their homes. Almost two-thirds (63%) knew at least one person who had died of cancer.

The average parent correctly identified 5.5 of the 7 terms used in the study but less than half (47%) understood the meaning of the words flame resistant. Seventy-six percent knew of the Consumer Product Safety Commission but less than one-fifth (19%) realized it was responsible for enforcing the Flammable Fabrics Act. Almost 85% remembered reading or hearing about problems with FR chemicals and 68% knew that Tris was considered either a carcinogen or a health hazard. National television (77%) and newspapers (74%) were the primary sources of information followed by magazines (57%), local television (49%), and family or friends (35%). Despite problems with FR chemicals, consumers appear to be overwhelmingly convinced that FR garments should be manufactured for all segments of the population. They are less convinced that safety standards should be set by the government and the majority want freedom to choose garment properties, even for young children.

Absence of Health Risk was the primary consideration in the purchase of children's sleepwear followed, in order, by Flame Retardancy, Comfort, Durability, Price, Ease of Care, and Attractiveness. Cluster analysis, however, revealed 7 distinct patterns of response with some clusters giving more consideration to comfort, price and durability than to safety and health factors. The lack of significant differences between the clusters in respect to the demographic variables indicate that age, education, income, employment status, and experience with fire do not explain the different criteria used by consumers in the selection of children's sleepwear.

The change in shopping practices most frequently reported as a result of the controversy was to read labels and look for consumer information (26%). Some respondents (20%) said they stopped buying chemically treated sleepwear (which had already been removed from the market) while others (14%) reported that they would buy only FR sleepwear (which had been required since 1971). Smaller groups attempted to resolve the problem by purchasing better quality, name brand merchandise (3%), by not buying sleepwear (2%), by making sleepwear (1%), or by washing sleepwear before wearing (1%).

Consumers are confused. Although many are aware of health and safety problems, they don't know what to do about them. They need clear information and responsible recommendations regarding the responses they could and should make. A wide variety of media must be used and messages must be tailored to meet the needs of different population segments.
The purpose of the research was to (1) determine the perception of students on the effect of fiber content on comfort; (2) study the comfort of socks of varying fiber content when worn during physical exercise; and (3) compare the results of the perception questionnaire with the wear study data and laboratory measurements. Secondary objectives were to have textile and clothing classes participate in a research project where they would be involved in the design and execution of the experiment; and to demonstrate the effect of fiber content and fabric properties on comfort.

Prior to the wear study, students completed a questionnaire in which they indicated the fiber content of socks that they perceived would give maximum comfort when worn during exercise. Two types of socks (cotton/synthetic and all synthetic) were included in the study.

The wear period consisted of a minimum of a half hour of exercise. The socks were worn for four wear periods with washing between each wearing. After each wear period the socks were evaluated by the participants completing a questionnaire. Hedonic ratings were given for over-all comfort, softness, dryness of foot, weight, fit, breathability, and thermal comfort. Analyses of variance were calculated for the ratings given to the socks for each attribute listed in the questionnaire.

Laboratory measurements on samples cut from unworn socks were made for weight, thickness, water absorption, and wicking. Calculations were made to determine compression, resiliency, and bulk density. Significant differences between mean values were determined by calculation of 't' values.

The majority of the students chose cotton socks for maximum comfort; no one chose synthetic socks. In contrast, the wear study results indicated that all socks were relatively comfortable, with the synthetic socks being rated as slightly more comfortable than the cotton or blend socks. The synthetic socks were rated, as compared to the cotton or blend, as significantly softer, heavier in weight, having less breathability, and being warmer. No differences were found for the ratings of foot dryness. Laboratory measurements on the socks showed the synthetic socks to be lightest in weight, thickest, lowest in bulk density, most compressible, most resilient, most absorbent, and to have the best wicking properties.

The results of the study indicate that fiber content per se does not determine overall comfort, thermal insulation, and moisture transport of socks. The wear study and laboratory results illustrate that synthetic materials may both absorb and transport moisture, that thickness is related to thermal comfort, and that softness is an important variable in determining comfort.
Heat Transfer from Layered Fabric Systems

Ira Block and Marcy Finkel, University of Maryland

Most of the work on the flammability of apparel fabrics has been centered on the measurement of the burning behavior of single fabric layers. Garments, however, generally consist of multi-layered assemblies, so that it is important to determine how well the results of single-layer testing will predict the behavior of layered assemblies. The performance of layered assemblies has been investigated on mannequins and in various bench-scale tests. Often, however, the test devices and procedures were unique to the investigation, so that the results were not always easily interpreted or readily extrapolated. The widespread dissemination of the National Bureau of Standard's Mushroom Apparel Flammability Tester (MAFT) permits the testing of fabrics in a standard format. This study concerns an investigation of the burning behavior of double layer systems tested on the MAFT.

The maximum heat transfer rate (MHTR) and the total heat transferred (Q) from layered fabric assemblies simulating nightgown-robe combinations were measured. In general, it was found that neither the MHTR nor Q of the assembly could be predicted from a knowledge of the behavior of the individual components. In some cases, the flammability of the combination was much greater than expected, while in others it was much less. A flammability index, based on the expected and observed values, was developed in order to quantify the results.

Since it is well known that the choice of fiber type and fabric construction will greatly affect the burning behavior of textiles, it was necessary to select the appropriate gown and robe fabrics by surveying the existing market. This survey was conducted by reviewing retail catalogs, trade magazines, burn injury data from the National Bureau of Standards and the Consumer Product Safety Commission, and data from the National Cotton Council and the American Apparel Manufacturers Association.

Testing was conducted as per the standard MAFT test procedure. The MHTR and Q were determined from the slopes and the maximum values, respectively, of the voltage vs. time curve generated by the device on a Hewlett Packard recorder. A flammability index, \( I_f \), which gives equal weight to the rate of heat transfer and the total heat generated was devised. The parameters are as follows:

\[
I_f = \left[ f_Q f_S \right]^{1/2}
\]

\[
f_Q = \frac{Q_c}{(Q_g + Q_r)}
\]

\[
f_S = \frac{(HTR)_c}{[(HTR)_g + (HTR)_r]}
\]

where

- \( I_f \) = Flammability Index
- \( Q_c \) = heat transferred, \( J/cm^2 \)
- \( Q_g, Q_r \) = heat transferred, \( J/cm^2 \) sec, and the subscripts
  - c = combination
  - g = gown
  - r = robe

A "t" test was chosen to test the precision of the results and the validity of the conclusions. The standard deviation of the index value was determined by means of an error analysis performed on the MAFT. The
precision of the results of this work was found to be in good agreement with that of others. It was found that the variability of most of the systems tested was within the expected MAFT variance. Some systems, however, were significantly more flammable than expected. In particular, the combination of an acetate/nylon gown with a brushed acrylic robe appears to be far more hazardous than testing of single fabric would indicate.

Thermal Comfort Characteristics of Textile Apparel Fabrics

Kay S. Grise, The University of Tennessee

Due to the present high costs and limited supply of energy, many consumers are lowering thermostat settings in the winter to save money and conserve energy. The purpose of this study was to investigate the properties of selected textile apparel fabrics that are relevant to thermal comfort. The fabrics were commercially available textile materials that would normally be worn by persons while at home with sedentary to moderate activity levels.

Nine apparel fabrics of various fiber content and construction were chosen after a local market search was conducted to determine the types of fabrics being used in ready-to-wear garments. Seven fabrics were chosen to represent the materials that could be used for an indoor jacket and two fabrics represented materials used for a shirt or blouse.

Fabric physical properties were measured according to standard textile testing procedures. The insulation value of the fabrics was measured using the heat flow and mass transfer apparatus that was designed and fabricated at the U.S.D.A. Textiles & Clothing Laboratory at Knoxville, TN.

The heat transfer was measured with the fabrics in spatial configurations of single fabrics, jacket and shirt fabric touching, jacket and shirt fabric spaced 1/8" apart, jacket and shirt fabric spaced 1/4" apart.

Each test was made at three different combinations of temperature and relative humidity to simulate conditions next to the skin and environmental conditions. Saturated salt solutions were used to maintain the constant relative humidity.

Analysis of variance was used to determine any differences in insulation due to the fabrics, spatial configuration, and temperature-relative humidity. Analysis of covariance was used to determine if any of the fabric physical properties were contributing significantly to the insulation value.

Results of the study indicate that the layering of the fabrics is the most significant factor and that the insulation increases with an increase in the air space. Fabric thickness was found to be the only statistically significant physical property under the prescribed conditions. A quantitative analysis of fabric surface indicated that that surface hairiness could possibly be a contributing factor; the fabrics with more protruding surface hairs gave the highest insulation values.

As a result of this project, data are available which can be used by consumers, educators, designers, and others to decide which apparel fabric would be the most desirable for maintaining thermal comfort under conditions similar to those prescribed in this research project.
An Analysis of Structural Variables as Related to Mechanisms of Thermal Resistance of Nonwoven Insulative Materials

Jana L. Percy and S. Kay Obendorf, Cornell University

Innovative nonwoven insulative materials have recently been introduced into the market for use in thermal clothing. This study provides updated information about structural variables of these consumer textiles as related to the mechanism of thermal insulation.

The research objectives were to determine the performance variables of nonwoven insulative fabrics in order to evaluate those structures that most significantly provide and maintain high thermal resistance throughout a laundering process and to analyze the structural characteristics in order to evaluate the mechanisms acting to provide thermal insulation.

Two thicknesses for each of five insulative materials (conventional fiberfill batting, hollow fiber insulation, three variations of low denier/fine filament insulation) were used in a simulated textile system. The structural characteristics measured were denier, loft, weight/area, surface area of fibers/area of fabric, and thickness. Performance variables measured for all specimens of insulative materials were air permeability, compressional resilience, thermal resistance and conductivity. Structures were evaluated after 0, 1, 5, and 10 launderings.

Performance of the conventional fiber, hollow fiber, and low denier/fine filament insulators were discussed. Changes in thermal properties, air permeability, thickness and compressional resilience as related to structural stability were related to the insulator structure and thickness. Results of a multiple regression analysis determining the characteristics of each nonwoven structure that significantly influences the insulation values were related to the mechanisms of thermal insulation.

Measuring the Thermal Insulation of Jackets and Sleeping Bags Using a Copper Manikin

Elizabeth A. McCullough, Kansas State University

Consumers have difficulty comparing outdoor textile products when thermal comfort information is either incorrect, misleading, or absent. The purpose of this presentation was to discuss a reliable, valid, and objective test method for measuring the thermal insulative properties of outdoor garments and sleeping bags and to use the measurements to estimate the amount of thermal protection that the products should provide for the user in different environments. Specific objectives of the research were (1) to measure the thermal insulation [clo values] of selected jackets and sleeping bags using a copper manikin in a climate-controlled chamber, (2) to calculate the lower thermal comfort threshold for each garment and sleeping bag and compare these values to the claims made by the manufacturers, (3) to compare the insulation provided by different filling materials when incorporated into jackets and sleeping bags constructed in the same designs with identical outer and inner
fabric shells, and (4) to compare the effective insulation provided by various ground covers used under sleeping bags.

Clo values of garments and sleeping bags are best measured using a heated manikin in thermal equilibrium with its surroundings. The manikin consists of a black anodized copper skin formed to approximate the physical form and size of a typical man. Heating wires are bonded to the interior surface of the manikin and when activated, provide internal heating that is distributed throughout the manikin to approximate the skin temperature of a human. Surface temperature measurements are taken from 16 thermisters located on various parts of the manikin.

The manikin test procedures and environmental test conditions for both clothing and sleeping bags were discussed in detail. Equations for calculating the intrinsic clo values and total clo values (outer air layer included) were presented. The clo values were used to compute the lower thermal comfort threshold for each item (i.e., the temperature and relative humidity combination at which most people would be comfortable for a given amount of insulation at low activity levels). The manikin test procedure was compared to small-scale insulation test methods (e.g., guarded hot plate) emphasizing the advantages and limitations of both.

Briefly, the results indicated that the thicker down-filled and fiber-filled jackets had higher clo values than those filled with thinner, reflective materials. The addition of a reflective layer to the fiberfill batting in a sleeping bag increased the clo value significantly without adding much weight. A 6-inch foam pad provided the greatest increase in clo value for a given sleeping bag, whereas placing the bag directly on a bed of ice caused considerable heat loss through the bottom, and consequently, provided the greatest decrease in clo value for the bag.

In general, manufacturers claimed that their products would keep a person warm at lower temperatures than our model predicted that they could. It appears that much of the information provided to consumers regarding thermal comfort characteristics of textile products is misleading or incorrect.

The Clothing Selection and Thermal Response of College Students in a 65°F Indoor Environment

Deanna M. Munson, Kansas State University

Currently, the Emergency Building Temperature Restrictions Plan requires classrooms (seventh grade and above) be maintained no warmer than 65°F (18.3°C) during the heating season. Little is known concerning the thermal comfort of students in this environmental condition. This study investigated whether sedentary college students were thermally comfortable in the 65°FET* (18.3°CET*) environment wearing clothing they had selected from their wardrobe, and the theoretical assumption that 1.6 clo of uniformly distributed insulation is necessary for comfort at the temperature.

The study was conducted in a laboratory-controlled environmental chamber located at the Institute for Environmental Research, Kansas State University. Condition, sex, and exposure variables were investigated. Condition was investigated at three levels, including a 65°FET* (18.3°CET*) environment in which subjects wore clothing they had selected from
their wardrobes for that environmental condition; a 65°FET* (18.3°CET) environment in which subjects wore designated clothing that measured 1.6 clo in insulation; and a 76°FET* (24.4°CET*) environment in which subjects wore clothing they had selected from their wardrobes for the environmental condition. The subjects' thermal response to the test conditions were evaluated in terms of thermal sensation responses for the body as a whole, face, hands, and feet; thermal comfort responses; and weighted mean skin temperatures. One hundred seven healthy college students (53 males and 54 females) were tested in groups of six on two different occasions. The duration of each test was one hour subsequent to a half hour precondition period. Those subjects who selected their own clothing were allowed to make desired changes between their first and second test exposures. Data were analyzed by analysis of variance and post hoc Fisher's LSD technics.

In general, students were dissatisfied with the thermal (cool) sensation they experienced when exposed to a 65°FET* (18.3°CET*) environment while wearing clothing they had selected for that condition. The females responded cooler than the males. Hands and faces were rated differently than bodies as a whole. Both weighted mean skin temperatures and thermal comfort ratings supported the findings that subjects were cool in this environmental test condition.

The theoretical assumption that 1.6 clo of insulation is necessary for a sedentary person to be thermally comfortable in a 65°FET* (18.3°CET*) environment was validated by the responses of the males but not by the responses of the females.

Students tested in the 76°FET* (24.4°CET*) environment while wearing clothing they had selected for that environmental condition recorded near neutral thermal sensation responses, had weighted mean skin temperatures within the comfort zone, and gave their highest thermal comfort rating to that environmental condition. In this condition, hands and faces were rated the same as bodies as a whole.

1ET* is the corresponding dry-bulb temperature where the loci of constant body wettedness caused by regulatory sweating intersects the 50% RH curve of the standard psychometric chart.

Soiling, Staining, and Yellowing Characteristics of Fabrics Treated with Resin or Formaldehyde

Teresa A. Summers, Wilson A. Reeves, and Robert M. Reinhardt
Louisiana State University

This study was conducted primarily to determine the relative degree of soiling and ease of soil and stain removal from cotton and 50/50 polyester/cotton (PE/C) fabrics in their scoured and bleached state, and after they had been crosslinked with formaldehyde or DMDHEU, a nitrogen-formaldehyde: (1) Form W Process (CH₂O/wet) with fibers swollen at the time of crosslinking, (b) the ALMI Process (CH₂O/gas) with gaseous formaldehyde and sulfur dioxide, (c) pad-dry-cure with aluminum sulfate catalyst, and (d) pad-dry-cure with magnesium chloride catalyst. Aluminum chloride and magnesium chloride were used to crosslink cotton and PE/C with DMDHEU with the pad-dry-cure process.
Oily and nonoily soils and the oily stain were applied to cotton and PE/C fabrics in triplicate. The oily and nonoily soils were applied in the Launder-Ometer. The oily stain was applied to fabrics in accordance with AATCC Test Method 130-1974. Subsequently, the fabrics were laundered in a Launder-Ometer up to 10 times with AATCC standard detergent 124. A Gardner tristimulus XL20 colorimeter was used to measure light reflectance (L) and the yellowness (Δb) of soiled fabrics and the yellowness of the oily stained fabrics. The extent of staining initially and after repeated laundering was determined in accordance with the AATCC Test Method 130-1974.

Analysis of variance was conducted on reflectance (L), yellowness (Δb), and stain before and after laundering. Additional analyses using the Kubelka-Munk equation K/S=(1-L)^2/2L where L is the coefficient of reflectivity, and S is the coefficient of light scattering were calculated.

These results indicated soiling and soil removal are influenced more by the type of soil, fiber content, process of producing the cross-links, and catalyst used than by the chemical composition of the cross-linking agent, although the chemical composition does produce some effects. The catalyst and process of applying crosslinking agents had more effect on staining and stain removal than the type of crosslinking agent. Development of yellowness of untreated and crosslinked fabrics during laundering was attributed to swelling of cotton fiber and cotton content of polyester/cotton blend fabrics. Crosslinking of cotton and polyester/cotton fabrics by a pad-dry-cure process retarded the development of yellowness. Yellowness developed in both oily and nonoily soiled fabrics but was not related to amount of soil in the fabrics.

Since crosslinks formed by the reaction of DMDHEU and cellulose have been shown to be less stable to hydrolysis and thus release more free formaldehyde into the atmosphere than crosslinks formed with formaldehyde, the commercial use of this more stable agent will likely increase. Implications from this research are that formaldehyde can be successfully used as a crosslinking agent with minimal effects on the soil and stain retention and release properties of DP fabrics. Rather, the catalyst and method of application used seem to be the most determining factors of soil and stain retention and release. Further study to continue exploring these effects is recommended.

Liquid Ammonia Treatment of Viscose Fabric: Effects on Physical Properties and Dyeability

Lenore Basche Cheek, University of Washington

Rayon has received increased attention as a viable alternative to cotton and to man-made petroleum based fibers. The purpose of this study was to evaluate the effect of anhydrous liquid ammonia treatment on the physical properties and dyeability of viscose fabric. Comparisons were made with sodium hydroxide mercerized viscose and with mercerized and liquid ammonia treated cotton fabric. Both sodium hydroxide and liquid ammonia are strong swelling agents for cellulose and are known to affect the fine structure of cotton fibers. Sodium hydroxide mercerization has been the traditional way to improve the dyeability of cotton yarn and
In this experiment, viscose and cotton fabrics were treated with liquid ammonia and with sodium hydroxide. Liquid ammonia treatment consisted of immersion in anhydrous liquid ammonia (B.P. -34 C) for one minute followed by a thorough water rinse. The mercerization procedure was a five-minute exposure to 20% NaOH followed by rinsing and neutralization. Samples of viscose also were mercerized using a salt solution rather than water for initial rinsing.

Samples of each treated fabric were evaluated for changes in strength properties. A scanning electron microscope was used to examine changes in fiber surface. Treated samples were dyed in an Ahiba laboratory dyeing machine using a variety of direct and fiber reactive dyestuffs. The quantity of dye on the dyed fabrics was evaluated spectrophotometrically. Color yield of the dyed samples was determined using a tristimulus colorimeter.

Results showed that physical properties of viscose fabric were negatively affected by sodium hydroxide mercerization. In contrast, liquid ammonia had little degradative effect on the viscose. Both treatments improve cotton's strength properties (see Table 1).

<table>
<thead>
<tr>
<th>Fiber</th>
<th>Treatment Condition</th>
<th>Shrinkage %</th>
<th>% Change from Control: Tear Strength</th>
<th>Burst Strength</th>
<th>Breaking Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotton</td>
<td>NaOH</td>
<td>10.4</td>
<td>+47</td>
<td>+45</td>
<td>+4</td>
</tr>
<tr>
<td></td>
<td>NH₃</td>
<td>8.1</td>
<td>+17</td>
<td>+40</td>
<td>-18</td>
</tr>
<tr>
<td>Viscose</td>
<td>NaOH</td>
<td>10.5</td>
<td>-67</td>
<td>-39</td>
<td>-53</td>
</tr>
<tr>
<td></td>
<td>NaOH(NaCl)</td>
<td>10.5</td>
<td>-51</td>
<td>-16</td>
<td>-38</td>
</tr>
<tr>
<td></td>
<td>NH₃</td>
<td>2.5</td>
<td>-8</td>
<td>+4</td>
<td>+1</td>
</tr>
</tbody>
</table>

The effects of both swelling treatments of the fiber surface were clearly visible under the scanning electron microscope. The surface of viscose was broken and roughened while the surface of cotton was made smoother and more regular. Both caustic and liquid ammonia treatment resulted in increased dye take-up: Mercerization resulted in a mean increase in dye exhaustion of 16% for cotton and 30% for viscose, while liquid ammonia increased dye exhaustion of cotton by 14% and of viscose by 23%. However, substantial differences in depth of color were achieved; the magnitude of change was greater for viscose than for cotton fabrics.

In conclusion, sodium hydroxide mercerization, the traditional approach to improvement of dyeability of cellulosic fibers, results in severe degradation of viscose. Liquid ammonia has a potential for pretreatment of fabrics containing viscose fibers because the treatment does not adversely affect the viscose component.

Both treatments result in dramatic increases in color yield.
Measurement of Pesticide Penetration of Selected Fabrics

Jacquelyn Orlando, Michigan State University

Dermal pesticide exposure is a serious problem in many types of agricultural pesticide applications and field procedures. The use of protective clothing as a barrier is considered vital for providing some measure of protection for those who work with and around pesticides. Pesticide exposure studies have shown there may be a difference in the level of protection because of the type of fabric used in the garment. Replicable techniques for comparing pesticide penetration through fabrics do not exist.

This component of the research on the development of functional apparel for pesticide applicators was to determine pesticide penetration differences of selected fabrics. Lack of methodology dictated the development of a replicable technique for measuring pesticide penetration.

Fabrics were tested for impermeability to pesticide penetration by passing fabric swatches through a controlled spray system and measuring the pesticide residue transferring on and through the tested fabric. Six variations in fabric were selected for testing: 100% cotton woven chambray, scotch-guard treated chambray, Tyvek® Crowntex®, and two variations of Goretex®.

Guthion azinphos-methyl was chosen as the insecticide for use in this experiment. A crate containing samples traveled through a chain conveyor system replicating average tractor movement in the field. Spray pressure was adjusted to 40 pounds. The entire spray system was enclosed in a plastic-covered hood and housed in a spray room. The fabric specimens were prepared for analysis by removing a 3" square from the center of each assembly. The cut specimens were separated into two components: the underlayer of foil and the gauze, and the top layer of foil and the tested fabric.

Gas chromatographic (GC) analysis was done on a Tracor 650 instrument equipped with a 1.8m x 2mm id glass column containing 3% SE-30 liquid phase on 80/100 mesh Gas-Chrom Q solid support, and a rubidium bead, nitrogen-phosphorous specific flame detector.

An analysis of the amount of guthion transferred through the outer fabric onto the gauze was made by the use of analysis of variance and Duncan's multiple range test. The ANOVA for experiment replication showed no significant difference among the replications of each fabric. The treatment ANOVA was highly significant at the .01 level.

Duncan's multiple range test further analyzed the differences in the treatment and three groups were found to be significantly different. The two types of Goretex, Tyvek and Crowntex comprised one group. Scotch-guard treated chambray was the second group and untreated chambray the third.

To evaluate the effectiveness of the treatment method, the amount of pesticide on both the inner and outer layers was summed. An analysis of variance showed no significant difference in replications or in treatment groups. The consistency of deposition on the treated fabric samples gives added confidence in the comparison of varied amounts of Guthion transferred through the fabrics to the inner layer.
Historical and Cultural

Structuralism: A Way of Looking at History of Costume

Ruth E. Hawthorne, Indiana University

This investigation aimed to demonstrate that structuralism, in particular Pettit's paradigmatic strategy (1976, p. 11), could be applied to the subject matter of history of costume. Pettit developed two strategies derived from Saussure's model for linguistics. Both focused on the relationships among words as concepts in language.

The sample consisted of eleven garments featured in Payne's History of Costume (1965). The comparative analysis began with the Greek chlamys and himation and continued with their derivations through the Roman and Byzantine period. Three of the four paradigmatic strategies were attempted. Each of them provided pertinent findings. The first generated five descriptors, categories for visual analysis: length, shape, decoration, details, and way of wearing. The second revealed which, among the five descriptors, was most critical for identifying a particular garment. The last identified the three paradigms within the sample. They are the (1) draped, (2) fastened, and (3) pullover ways of wearing.

If the paradigm is considered as a class or genus and the differentiator the difference, effective definitions for visual recognition can be written. By the same process, a first step toward structuring the subject matter results. The effectiveness of Pettit's paradigmatic strategy recommends it for application to costume subject matter in future investigations.

References:

Coptic Textiles at the Nelson Gallery of Art:
A Stylistic and Structural Analysis

Lucy R. Sibley, Elinor R. Nugent, and Lois N. Korslund
University of Missouri-Columbia

The purpose of this research project is to complete a descriptive classification of 14 Coptic textile fabrics at the Nelson Gallery of Art, Kansas City, in order to reassess their provenience and date. Attribute analysis of the stylistic and structural subsystems and the plotting of contextual interrelationships constitute the means of achieving this aim.

Stipulated definitions for certain key terms and identification of seven controlling postulates framed the development of the hypotheses. Major hypothesis: Nelson Gallery textiles presumed but not yet proven to be Coptic are demonstrably Coptic. Criteria for acceptance: (a) the presence of essential stylistic and structural attributes in enough in-
stances to indicate choice rather than chance and (b) acceptance of the
two corollary hypotheses. Corollary hypothesis 1: A refined set of
criteria for Coptic textiles is available. Criterion for acceptance:
compilation of a set of essential attributes that specifies and delin­
eates a Coptic textile. Corollary hypothesis 2: Discernible patterns
of contextual interrelationships of essential stylistic and structural
attributes form the basis for descriptive classification of Coptic
textiles at the Nelson Gallery of Art. Criterion for acceptance: The
presence of identifiable patterns of contextual interrelationships that
demonstrate different kinds of clusters of essential attributes.

A list of attribute dimensions derived generally from recent textile
history studies was developed to order the accumulated data. From the
works of certain scholars, essential attributes serving as defining pro­
properties of Coptic textiles were compiled and grouped according to the
attribute dimensions check list. A chronology evolved that incorporated
horizon markers. It constitutes the set of criteria for Coptic textiles.

Each of the 14 textile fabrics was subjected to nondestructive
analysis using both visual and microscopic examination of the entire
fabric and of certain single fibers. Both sides of each textile were
studied. Observed attribute information was transferred to prepared
charts and compared with the set of criteria. Essential attributes
were identified in each fabric. Contextual interrelationships of stylis­
tic and structural essential attributes plotted for each fabric were
compared for patterns of recurrence. Textiles were reassessed for Coptic
prevenience and for date/period and were reclassified on the basis of
the findings.

Based upon analysis of the data accumulated, all three hypotheses
were accepted. Also, certain attributes present in each fabric acted as
essential although they were not classified as such.

The presence of attributes acting as essential implies that more
information is available in the textile fabric than was suspected pre­
viously. Such a finding suggests that attribute analysis of other Cop­
tic textiles might very well expand our present knowledge of Coptic
fabrics and that contextual interrelationships of attributes can be
plotted and used to classify Coptic textile fabrics.

The Use of Symmetry in Nuapatna, India, Textile Design:
The Application of an Hierarchical Analysis

Catherine A. Cerny, University of Washington

The textile design from particular cultural populations can be
distinguished by common design features. The craftsman manipulates
art elements (point, line, plane, mass, space, texture, and color) with
respect to the design principles (symmetry, emphasis, rhythm, and pro­
portion) in order to realize the design image. With the image seen as
a product of a culture, the common use of formal elements suggests the
occurrence of a standardized system of visual expression. The study
proposes that if the manipulation of art elements relative to the design
principles is evident on all organizational levels of the textile de­
sign of the sample specimens, then a standardized system of visual ex­
pression is in evidence.
The sample consists of 10 ikat saris manufactured in the Nuapatna region of India in the late 1950s and located in The Costume and Textile Study Center at the University of Washington.

The methodology is structured to focus the attention of the researcher on the organizational levels of the textile design. These levels, called hierarchies, are identified relative to the incorporation of the motif into the organization network of the design field. In the Nuapatna sample, these hierarchies are isolated as:

- Hierarchy I: Organization of the Whole
- Hierarchy II: Internal Organization
- Hierarchy III: Motif Grouping
- Hierarchy IV: Motif Configuration

The study observes the manipulation of particular art elements (point, line, plane, mass, space, and color) with regards to the delineation of symmetry within each hierarchical level.

The results show that common patterns of delineating pattern in terms of symmetry occur within all organizational levels. Mirror symmetry seen with lateral and/or transverse axes or offset one-half repeat unit along a single axis, governs the delineative and colorative nature of the motif configuration and the placement of the configuration relative to the structural baseline and centerspace elements within the organizational schema. The methodology allows the researcher to analyze how the use of symmetry on one hierarchical level is repeated on the more finite levels.

Refinement of this hierarchical approach to formal analysis will be realized with further implementation of the methodology with regards to other formats of design organization. Suggested applications of the methodology include cross-cultural or historical analysis of textile design regarding one or more of the design principles and intra-cultural analysis relating visual expression to social, religious, or technological phenomena.

Changes in the Masculine Image in the United States 1880-1910: A Content Analysis of Popular Humor about Dress

Jo B. Paoletti and Ira Block, University of Maryland

Between 1880 and 1910 the pattern of life in America shifted from predominantly rural and agricultural to urban, industrial, and commercial, causing changes in standards of behavior for both men and women. It is through an investigation of the male image as created by costume that this research contributes to the study of the redefinition of masculinity that occurred during this period.

The business suit, which superseded older forms of dress during this time, persists today as the symbol of modern man as brain-worker and manager. It was hypothesized that the acceptance of the business suit was the result of two simultaneous changes: first, the wearing of suit was the result of two simultaneous changes: first, the wearing of a business suit would have acquired a positive image of the acceptable, modern masculinity and, second, traditional clothing, such as the morning coat, would have fallen into disuse, or possibly disfavor, as the Victorian "perfect gentleman" became a less popular role model.

The first assumption was confirmed through the use of contempor-
aneous etiquette books and trade newspapers of the men's wear industry. It was noted that the business suit became more acceptable for a wider range of occasions, the etiquette books began to relegate the older styles to formal ceremonies, and that variations of the business suit, such as the tuxedo, were developed to provide modern-looking substitutes for traditional styles.

Since humor is frequently an expression of popular criticism, cartoons were selected as the source material with which to trace the devaluation of the man of leisure. A content analysis of a sample of 256 cartoons about men's and women's clothing from the most popular humor magazines of the period--Life, Judge and Puck--was conducted.

Women were found to have been ridiculed most often for specific articles or combinations of clothing, while men were most often criticized for personal appearance in general. Most of the male comacters wore the traditional styles associated with the leisure class, particularly the morning suit. Business suits appeared very seldom, despite their having been as common as the other styles. Overly-fashionable men were not depicted as being effeminate, as might have been expected, but as lacking both masculine and feminine characteristics. Neglecting one's appearance was shown as a masculine trait, while sexually attractive clothing was associated with femininity.

The etiquette books and trade papers documented the growing popularity of the business suit, but without negative comment on the older styles still worn. The cartoons, on the other hand, paid little attention to the business suit and clearly criticized the man wearing traditional dress.

A stock caricature of the fashionable gentleman, the Dude, was introduced in the 1880s and continued to appear throughout the period. No equivalent negative image existed for the fashionable woman. A personification of the ideal American man emerged in the 1890s in the cartoons of Charles Dana Gibson. Along with Leyendecker's "Arrow Shirt Man," these drawings epitomized the new male image--clean-shaven, athletic, and business-like.

The Taoist Robe and Its Symbols

Mary Ellen Des Jarlais, University of Hawaii at Manoa

In anticipation that the findings would be of value in the one-year course in Asian Costume taught at the University of Hawaii, and to the Asian Costume Museum, research was undertaken on an oriental robe to determine its type, origin, date, use and qualifications as a work of art. The research employed was a combination of historical and descriptive. To establish direction and parameters, three hypotheses were formulated as the basic research design: (1) the robe is Tibetan in origin and belonged to a former Dalai Lama; (2) the robe is Chinese in origin and was used by a high ranking official of the Chinese Taoist religion; (3) the robe is of the early Ching Dynasty, 1644-1759, and is a masterpiece in the art of stitchery.

Primary research methods involved the robe itself and included photography for ease in classification of motifs; physical measurements for comparison with similar type robes and for emphasis upon particular motifs;
study of the use of color; chemical and burn tests and microscopic examination for fiber identification; yarn count for quality of fabric; use of Chinese classification to identify motifs; determination of the technology for construction; calculation of the time needed to embroider the motifs on the robe; types of stitches used for ornamentation; use of the Priest, Fernald, and Cammann theories for dragon robe dating in order to date the robe being studied. Secondary research methods consisted of consultation with experts in Chinese robes and comparison of the robe with three known similar ones and one fragment of a robe.

The findings were as follow. The fibers in the robe are silk, gold-like foil wrapped around a cellulose core, and gold-like foil adhered to paper or parchment. The fabrics are satin and two types of damask. There are 280 motifs, including repetitions, each named and described according to Chinese authorities. The symbols confirm that the robe is Taoist. However, neither the thunderbolt nor bell, the two most important Tibetan symbols, is present. All seams of the robe are hand sewn or held in place with paste. Ornamentation is achieved with the couching stitch.

This robe was used by a high ranking Taoist official, probably second only to the Chinese Emperor (as indicated by the four-clawed dragon on the robe) and the equivalent of a Pope. I date it as Early Ching, 1644-1759, although it is possibly late Ming, 1600-1644. This masterpiece of stitchery was used by the ranking member of the ritual performers as he and his group practiced yoga, magic, alchemy, and meditations for high ranking audiences, including the Emperors of China. Based on my correspondence with authorities, I believe this is the first attempt to completely verify and describe a Taoist robe in the English language.

Distinguishing Non-Western from Western Dress:
The Concept of Cultural Authentication

Joanne Bubolz Eicher, University of Minnesota
Tonye Victor Erekosima, Catholic University of America

The purpose of this paper is to introduce the theoretical concept of cultural authentication, to exemplify the concept with field data from the Kalabari people who reside in the delta of the Niger and Benue Rivers in southeastern Nigeria, and to use it as a basis of distinguishing non-Western from Western dress.

The research design involves ethnographical fieldwork by a team of two researchers, one an "outsider" and one an "insider," using the techniques of observation and participant observation respectively, field photographs, and interviews. The photographs were classified by both researchers into a number of descriptive categories of Kalabari men's dress representing the range from workaday or casual to formal and ceremonial. They were then analyzed and found to fit the four analytical levels of cultural authentication.

Cultural authentication is defined as the process of assimilating an artifact or idea external to a culture by accommodative change into a valued indigenous object or idea. When applied to analysis of dress and adornment, the four levels of cultural authentication—(1) Selection, (2) Characterization, (3) Incorporation, and (4) Transformation (SCIT)—
can explain why some elements of dress, which would be categorized as Western, are indeed "non-Western" in the dress mode of adoptive cultures. Western suits, sport shirts, and school uniforms worn by the Kalabari today are examples of "pure borrowing"--the borrowing of not only the form but the meaning, use, and function of one element of dress or a totality of dress on a specific body. In contrast, the examples of the casual ensemble of bare chest and wrapper, or shirts and wrappers; the formal wear of Woko with wrappers or trousers, as well as the Doni; and the other two ceremonial men's gowns (called Ebu and Attigra) illustrate the various levels of SCIT. When one foreign element or more of dress is assimilated in form only, but use changes, the level of selection has occurred. When the element of dress is borrowed and not only use but the symbolic reference has changed, characterization has occurred. When the elements are worn by a specific group to identify them as a category, the level of incorporation has occurred. When the elements of dress are changed (as in creative ensembling) or as in creating new dress, the level of transformation has occurred.

The concept of cultural authentication has implications for solving the problem of distinguishing Western from non-Western dress that was posed by Roach and Musa in New Perspectives on the History of Western Dress. Several examples from cultures other than the Kalabari illustrate the usefulness of the concept to the historian of costume or the socio-cultural analyst of dress. The English men's bowler hat worn by Otavalo women in Bolivia is an example of selection. The Indonesian-inspired wax batik textiles distinguished by assigned names and used throughout West Africa are examples of characterization. The Afro haircut that became prominent among U.S. blacks in the era of the Civil Rights movement in the United States is an example of incorporation. The Kabba Sloht frock of Sierra Leone is an example of transformation.

Patterns for Garments:
A History of the Paper Garment Pattern Industry in America to 1976

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The paper garment pattern grew out of a distinct need to make the dressmaking process less time consuming and easier than it had been. The beginning of the paper garment pattern industry in America has been considered obscure and has been controversial. The purpose in the present study was to document the history and development of the paper garment pattern industry in America to 1976, and to relate the growth of the industry to social and economic events and to general technological advancement in other industries. The study was focused on major pattern companies that produced patterns for general home sewing. The objectives in the study were to (1) trace and document the history of the industry and identify related social, economic, and technological events, and (2) examine the internal and external, vertical and horizontal growth of individual companies.

Data collection trips were made to New York, Washington, D.C., and Massachusetts. Data were analyzed so that information regarding individual pattern companies could be examined. Facts regarding the companies were interrelated to provide a basis for general statements about the pattern industry relative to economic, political, and social conditions in America.
The data were subjected to external and internal criticism to determine the authenticity and credibility of the evidence, respectively. A chronology of important dates in the pattern industry was prepared. The invention and introduction of graded and sized patterns in America is credited to Ebenezer Butterick. Butterick was a tailor by training and trade and no doubt was familiar with the patterns drafted and used by tailors. The first graded and sized pattern, introduced in 1863 by Butterick, was for a set of men's shirts and was cut from stiff brown paper. Soon patterns were cut from tissue, to be easily folded and unfolded. The patterns were sold door-to-door to individuals and later by the box to retailers. About 1870, James McCall, an immigrant tailor, began making and selling graded and sized patterns. Butterick and McCall were joined by over 15 other pattern companies in the succeeding 100 years. Major pattern companies became publishers of magazines and books, at first to promote their own products and later in an effort to grow horizontally and internally.

The Great Depression of the 1930s and then World War II prompted women to sew in order to save money and conserve fabrics. The pattern industry was thereby given a much needed fillip in the 1930s, '40s and '50s. In the mid-1900s, the pattern companies developed new outlets for pattern distribution and used innovative advertising and marketing techniques to boost sales. The pattern companies cut waste in production and management and became increasingly efficient. New services and conveniences were offered by them. Throughout the early to mid-1900s, several pattern companies combined or were purchased by other business interests or simply went out of business. In the 1960s, two of the three major pattern companies in existence became part of conglomerates; in 1968, Vogue-Butterick was purchased by America Can Company and McCall Corporation became part of Norton-Simon, Inc. The Simplicity Pattern Company remained as the only independently owned and managed pattern company in 1976. Based on the data collected, statements were made concerning the prognosis for the industry.

Characteristic Modes of Day Dress for Women in Northern Ohio as Recorded in Photographs, 1862-1893

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This research, supported by a faculty research grant, is part of a continuing project to determine modes of dress characteristic of northern Ohio for the period 1860-1900 as recorded in photographs of the period. The first stage of research, reported at the 1978 Central Region ACPTC Meeting, established a dated chronology of 19th century photographers working in Wooster, Ohio. Next, 1,033 photos taken in Wooster between 1860 and 1900 were procured from various sources and recorded on slides, black and white contact prints, and xeroxed working copies. All photos were dated within a one to five-year period on the basis of information known about the photographers.
After recording and dating these primary documents, it was determined that further analysis could cover men, women, and children but should be limited to day dress (shown almost exclusively) between 1862 and 1893 (date of 94% of photos). Neckline and hair arrangements would be important in style chronology since 58% of photos were busts.

Costume analysis of stage three began with women's day dress with emphasis on necklines, hair arrangements, and skirt silhouettes. The purpose was to establish a style chronology of characteristic modes in use between 1862 and 1893. Dated pictures of 420 women were analyzed. Design counts were made of the various hairstyles and accessories, necklines and upper bodice styles and accessories. Skirt silhouettes were recorded for each of the 89 full-length portraits. Percentage summaries of the styles were tabulated for both four- and eight-year time blocks useful in the Wooster photos. Fashion cycles of the most characteristic styles were graphed. On the basis of this analysis it was determined that:

1. There was a chronological progression of styles of neckline, hair, and skirt arrangements in use, with each of the major styles moving in a normal fashion cycle that could be graphed.

2. The photographs indicated a wide variety of individual interpretations of the characteristic styles, but for any given time block, two or three styles of neckline and hair arrangements emerged as being adopted by 70 to 80% of the women pictured.

3. Eight different silhouettes were identified, each at its height of popularity for about a four-year block of time. The type of silhouette that would complete the bust photos can thus be predicted with an expectation of accuracy.

This study would seem to indicate that Wooster women were fashion conscious and open to continual adoption of new styles. It also indicates that they were influenced by each other, and that of all style choices available, only a few emerged as popular in this area. This study of dated photos helps us to see the patterns of fashion adoption and acceptance in a particular locale. Comparison of these cycles with those for the same time period in other communities and in fashion periodicals would give a more complete picture of the degree to which Wooster in that era was typical or atypical in dress.

The Theoretical Bases and Cultural Origins of the Meaning of Dress in William Hogarth's Writings and Works of Art

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The purpose of this study was to demonstrate how William Hogarth's statements on dress contribute to understanding the cultural meanings of dress in his works of art. The first part considered theories of costume found in theoretical literature on art dating from the Renaissance to the eighteenth century. Many European theorists on art borrowed rules of classical rhetoric. They believed that the rhetorically based concept of decorum, what is most fit and appropriate to an occasion or subject, was expressed through dress. Although differences prevailed regarding what constituted appropriate dress, many artists chose cos-
tumes according to styles appropriate to the rhetorically based hierarchy of painting—historical works, portraiture or genre.

The second part dealt with William Hogarth's statements on dress in his Analysis of Beauty (1753), and depictions of dress in his works of art. Many of Hogarth's aesthetic, dress-related ideas reflect a rhetorical conception of art. He considered his works of art to be didactic compositions, he viewed dress as means to achieve decorum, and he accepted the rhetorically based hierarchy of styles of painting.

In his Analysis Hogarth used dress empirically to illustrate his six formally conceived principles of beauty—fitness (decorum), uniformity, variety, simplicity, intricacy, and quantity, which also suggested humor. The examination of Hogarth's works of art revealed that his principle of fitness is more apparent in his satiric-didactic compositions than in his portraits or history paintings. In the satiric works he used appropriate eighteenth-century dress that aided the moral narrative, and served to establish character and communicate eighteenth-century English ideas associated with dress. Although many of Hogarth's small group portraits suggest generally worn eighteenth-century dress, a large number of his single portraits and history paintings reflect artistically conceived costumes, such as fancy dress and vague drapery, which were forms popular with eighteenth-century artists.

Costume in Hogarth's works of art also expresses his principles of uniformity, variety, simplicity, intricacy, and quantity. In general, dress serves as a rhetorically persuasive, didactic tool. It is a language that communicates ideas associated with particular styles. Costumes were shaped by Hogarth to create forms that expressed his formal theory of beauty and humor.

Further research on theories of art may provide costume historians with greater insight into the meaning of dress in works of art. Closer analysis of Hogarth's depiction of dress in light of art theory and eighteenth-century aesthetics and psychology also may provide greater understanding of Hogarth and his eighteenth-century social and cultural context.

Social/Psychological

Comparison of Two Methodological Approaches to Perceptions of Physical Attractiveness Using Dress as a Facilitator

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In recent years a proliferation of empirical research has been published regarding the effect of physical attractiveness on interpersonal behavior. A considerable volume of this research indicates that a physical attractiveness stereotype exists, whereby favorable judgments are consistently made of physically attractive strangers (Berscheid and Walster, 1974). Data yielding empirical support for the physical attractiveness stereotype are typically obtained using stimuli that vary in level of physical attractiveness from highly attractive to highly unattractive. The level of physical attractiveness-
ness is, in some studies, merely assumed by the researchers; in other studies it is empirically defined by an independent set of judges. In both cases the researchers impose an externally defined standard of attractiveness on the subjects in their studies.

Another body of literature indicates that standards of beauty (or physical attractiveness) differ from individual to individual (Roach and Eicher, 1973). The purpose of this research was to link the two bodies of literature by testing the differential effect of physical attractiveness on stereotypical judgments made toward a stranger when physical attractiveness was empirically defined by independent judges, versus when it was defined by the subjects themselves. A naturalistic experiment was used to test this effect.

Each of 72 female volunteer subjects was randomly assigned a photograph of a stranger who was empirically defined as either physically attractive, unattractive, or neutrally attractive (a midpoint) by 20 judges in an earlier phase of the experiment. After studying the photograph each subject completed four judgment scales that were similar to those typically used in studies of physical attractiveness. One item regarding the physical attractiveness of the stranger was added to the judgment scales.

Judgments about strangers who were empirically defined by independent judges at a given level of physical attractiveness were not different from judgments made of strangers who were defined at other levels of attractiveness. The same analyses were made of the data when it was regrouped into levels of physical attractiveness based on the subjects' own perceptions of the physical attractiveness of the strangers; significant differences were found in regards to subjects' judgments of the strangers. Since in this study determination of physical attractiveness levels was different for each set of analyses, it is assumed that differences in the two analyses were due to differences in methods of defining physical attractiveness level. This research indicates that subject-perceived physical attractiveness yields more consistent stereotypical judgments than empirically-defined physical attractiveness.

Attributions of Causality for Job Acquisition: Job Skills, Dress, Luck

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Causal attribution research from social psychology has focused on ability and luck as factors when exploring the causes individuals use to explain behavior. The purpose of this research was to determine how attributions of causality about job acquisition in a middle management business setting were affected by sex of employer and employee and dress-resume combination. Attributions of causality included importance of career dress, along with job skills and luck, as factors in job acquisition. Dress-resume combinations included the four possible combinations of highly and minimally appropriate dress and job resumes.

Management level business employers, 80 of each sex, were subjects in the research experiment. Each subject evaluated two dress-resume combinations, one each for a male and female employee. Subjects were told that the person depicted in the stimuli had acquired a mid-
dle management business position in the community. Subjects were asked to assess the importance of job skills, dress, and luck as causes for the job acquisition.

Data were analyzed using a 2 x 2 x 4 (sex of employer x sex of employee x dress-resume combination) multivariate analysis of variance (MANOVA) because the dependent variables, importance of skills, dress, and luck, were assumed to be correlated and to control for an inflated number of significant F ratios. When appropriate, univariate analysis of variance (ANOVA) was computed for each dependent variable with significant F ratios examined only when their corresponding MANOVA F ratios were also significant.

From the univariate analyses, the significant main effect of employer sex emerged only for luck. Female subjects attributed greater importance to luck as a cause for job acquisition than males. All three ANOVA's had significant main effects for dress-resume combination. Dress and job skills were considered more important as causal factors for job acquisition in the two combinations where dress or resume were high. Luck was considered more important only when both the dress and resume were minimal. For both the job skills and dress ANOVA's a sex of employee x dress-resume combination interaction emerged. For job skills, in the high resume-high dress combination, greater importance was attributed to job skills for female than male job acquisition. For dress, in the high resume-minimal dress combination, greater importance was attributed to dress for male than female job acquisition.

The results contributed to attribution research in several ways. First, previous research findings showing male success attributed more to ability or job skills and female success attributed more to luck were not supported. Second, in dress-resume combinations where highly appropriate dress or resumes were present, success was attributed to these factors, thus supporting the inclusion of dress as a factor in future causal attribution research on business decisions. Finally, the employer-subjects supported previous research showing no difference by sex of subject in causal attributions for ability.
Male Style Preference and Perceived Fashion
Risk Related to the Fashion Cycle

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Consumer selection of clothing, a decision-making situation, involves risk because the outcomes of choices are not predictable. Fashion risk, the additional uncertainty perceived beyond the risks perceived in goods not subject to fashion, seems to be part of other risks, rather than a separate type of risk. In 1979 it was found that college females perceived different amounts and kinds of risks in dresses that differed temporally; preference for a style was related to its aesthetic appeal. The present research compared men's responses to perceived risk and their style preferences in men's suit styles to responses of females.

Expert judges classified 47 photographs of men's suit styles as classic, current, newly-introduced, or outdated styles using provided definitions. Twelve styles were reproduced as line drawings on a forward facing lay figure. Previous research suggested that respondents preferred lighter value garments; using line drawings allowed value and texture as well as facial details, styles of hair, shirt, tie, and shoes to be controlled. The 12 drawings were pretested; 8 drawings were selected for the final instrument.

Usable data were collected from 121 college men living in randomly selected dormitories and fraternities. There were two booklets that each respondent completed at his own pace. Booklet 1 presented the randomly arranged drawings paired with the same semantic differential that had been used in research with females; Booklet 2 asked respondents to give their choices using the full forced-choice paired comparison. Responses were given on the 99-point certainty scale and transformed to normal deviates for data analysis.

Significant F-values for garment in responses to the semantic differential indicated that each of the 14 word pairs effectively described the stimuli. Specific risks perceived and over-all perceived risk differed according to temporal quality of the styles. Correlations among word pairs indicated that over-all risk was associated with aesthetic appeal and performance risk. Preference was mostly related to aesthetic appeal and over-all risk.

Although there was some evidence of response pattern differences between males and females, as noted in other research, the males in this research and females in the 1979 research perceived similar risks within each temporal style category. Males preferred classic suit styles while females preferred current and classic dress styles. For both sexes aesthetic appeal was associated with preferences; the most beautiful and appealing styles were most preferred. The risks perceived in the most-preferred styles were similar for both sexes, as were the risks perceived for the least-preferred styles.
Psychological Proximity of Clothing to Self: Initial Scale Development

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The identification of life concerns important to individual's quality of life has been the focus of considerable research. One dimension along which people organize their perceptions of life concerns has been designated as psychological closeness, i.e., the proximity of life concerns to self. The purpose of this research was to initiate the first phase in a long-term effort to develop a valid and reliable scale for measurement of proximity of clothing to self.

A survey research design was employed. Households were selected by a two-stage systematic random sampling procedure with clustering. Questionnaires were self-administered and completed by 116 wives and 116 husbands (married couples) with school-age children.

Proximity of clothing to self is indicated by the degree to which clothing is (1) perceived as one with self or as a component of self; (2) recognized as an aspect of appearance by which the self is established and validated; (3) recognized as a significant symbol of one's identity, mood, and/or attitude; (4) perceived as an expression of self-regard, self-worth, or self-concept; (5) recognized as an element of an affective response to self-evaluation; or (6) related to body cathexis. These six elements of the construct became the criteria by which the subject's response to the question, "What are some of the most important reasons why you feel as you do about your clothing?" was evaluated.

A three-point rating scale, the first version of the Proximity of Clothing to Self Scale (hereafter cited as PCS Scale), was developed. Each point on the scale was described in terms of the six elements of the construct and varied with degree of agreement and explicitness of the perception or recognition. Two coders and an arbiter assigned a scale value to a subject's response if its content related to one or more of the six elements. Responses whose content did not contain any of the elements of proximity of clothing to self were assigned an off-scale code.

Two measures of intercoder reliability produced agreement of .90 and .89. Slightly less than half the subjects' responses were assigned on-scale values; most of the remainder contained off-scale content. Substantially fewer subjects were scaled at the lowest point on the scale in comparison to those scaled at the other two positions.

Some limitations of the PCS Scale as now constructed are: (1) the limited and analytically restrictive range of a three-point scale; (2) the inability to judge proximity of clothing to self for subjects whose expressed reasons did not contain elements of the construct; and (3) the time-consuming and relatively expensive nature of the scaling method. Conversion of the PCS Scale from a rating scale to a scale based on a summative model or a latent trait model is in progress. Refinement of the scale should accommodate finer gradations than at present. Investigation of proximity of clothing to self seeks to clarify the psychological, rather than the physical, meaning of terms such as "the second skin" and "the visible self." Variation in psychological proximity of clothing to self among individuals should help explain other clothing variables, such as awareness, interest, and behavior.
Effects of Personalization and Style of Dress on Questionnaire Returns

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A major disadvantage of mail surveys is low response. Personalization of the mailing is one technique that has been used to increase returns with inconclusive results. Impression formation research suggests that degree of similarity between researcher and respondents, including dress, may mediate the effects of personal contact.

This study was designed to determine whether personalization of a mailing, through inclusion of a photograph of the researcher, would affect responses. In addition, dress of the researcher was varied to determine the effects of casual versus formal dress.

Clothing research has suggested that preference for dress styles may be related to political attitudes. Therefore, the sampling frame for this study was a list of recent university graduates in four majors that other researchers have found to differ on the liberal-conservative dimension. The systematic sampling technique described by Babbie was used to select 12 males and 12 females from each of these 4 majors. Members of these groups were assigned to one of the following three cover-letter conditions: picture of campus gate, picture of gate with casually dressed student researcher, and picture of gate with formally dressed student researcher. Identical questionnaires were mailed to each group. The questionnaires dealt with upholstered furniture to disguise the clothing-oriented nature of the research. A question about political attitudes was included to check on the a priori classification of subjects as conservative or liberal.

Chi square analyses were used to evaluate number of returns, both to the initial mailing and follow-ups. For the initial mailing, the casually dressed researcher produced significantly more returns than the gate (59% versus 31%), whereas the formally dressed researcher did not (44% versus 31%). Similar effects were present after follow-ups. Neither type of major nor self-reported political attitude appeared to interact with style of dress.

The Mann-Whitney U Test was used to evaluate rate of return. These analyses suggested a trend toward earlier returns for the casually dressed researcher compared with the gate, although this difference only approached statistical significance.

The results of this study suggest that personalization of a mailing can improve returns and that this effect is mediated by style of dress. Contrary to previous research, the similarity-attraction hypothesis was not supported. Neither type of major nor political attitude was related to responses to style of dress. In addition, the total group of university graduates, who might be expected to dress in a relatively formal manner, showed a more positive response to casual dress compared to formal dress. The findings suggest that, rather than similarity, authenticity (consistency of dress with the role of student researcher) had a positive effect on number of responses.
Awareness of Clothing of Preschool Children

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The purposes were to develop a research approach to examine children's awareness of clothing at the preschool level; to determine whether awareness was influenced by age and sex; and to determine differences in the extent of awareness based on the usage of, preference for, and concern for clothing. Subjects in the study were 39 three- and four-year-old children (19 male and 20 female).

The first measure obtained the children's preference for certain style features and their awareness of clothing. Preferences were measured during the selection of clothing for three male and three female dolls. Each child was asked to select one of three choices of clothing for each doll. Three dimensions of clothing were represented: masculine/feminine (M/F), decoration (D), and style (S). A Latin square was used to randomize the order of presentation of the dolls and clothing. During the dressing of the dolls, the child's comments about the clothing were recorded and coded for five areas of content: sex role, attractiveness, liking, wanting, and decoration. The second measure was a teacher rating of each child on the use of clothing in interaction with adults, the use of clothing in role-taking activities, concern for clothing, the use of clothing in interaction with peers, and preferences for clothing.

Chi square analysis of the children's choices for the doll dressing activity revealed no significant differences based on age and/or sex. Separate two factor (age x sex) analyses of variance were performed for the children's responses in each of the five content areas for the doll dressing choices. Younger children gave more sex role responses while dressing the female doll in clothing from the M/F dimension (F=12.72; p≤.001). Significantly more comments concerning detail were made by the older children while dressing the female doll in clothing from the D dimension (F=4.40; p≤.043). Post hoc analyses of age x sex interaction revealed that significantly more comments concerning attractiveness were made by the older male and the younger female children while dressing the male doll in clothing from the M/F dimension (F=5.68; p≤.023).

Separate two factor (age x sex) analyses of variance for the teacher ratings of the children's interest in clothing revealed age main effects for role taking (F=9.00; p≤.005), concern for clothing (F=17.17; p≤.001), and preferences for particular clothing (F=9.47; p≤.004) with younger children receiving higher ratings in all three areas. An age x sex interaction for the use of clothing in interaction with adults was also obtained (F=4.81; p≤.035). Post hoc analyses revealed that the older males were rated lowest on the factor of the four groups of children.

Although the subjects did not express definite preferences for dressing the dolls along the clothing dimensions studied, the children exhibited an awareness of clothing through their behavior in the classroom. Differences in the awareness of clothing were found to be more age than sex related. The finding could be related to changes in the cognitive development of the children at this age level. Results suggest that the doll dressing activity and the teacher ratings were an effective method of studying children's awareness of clothing. The age differences found suggest the need for further study of a wider age range of children.
Role and economic theorists suggest that changing social roles might be accompanied by changes in clothing needs and these changes may influence clothing expenditures. The purpose of this exploratory study was to learn how elderly consumers were allocating their retirement dollars, the expenditure changes they made after retirement, how they would allocate their money if they could make changes, and how they fitted clothing expenditures into these overall priorities.

Questionnaires were mailed to potential respondents in two Louisiana parishes. Their responses were used to select the final sample on the basis of marital status, ages, retirement status, location of home, ability to be active, and possible interview time. The 81 elderly couples who were interviewed maintained their own homes.

Bureau of Labor Statistics (BLS) hypothetical budget categories were used as a basis for instrument development. Illustrated cards were devised to represent the BLS budget categories for clothing, personal care, financial aid to children, other consumption, savings, housing and household, insurance, food, transportation, medical care, and education. During a structured interview, each couple was asked to arrange the cards according to budget priorities—actual and ideal pre-retirement expenditures, actual and ideal post-retirement expenditures, and projected changes in expenditures if the income were increased $100 per month and if it were decreased $100 per month. Couples also indicated their budget levels based on BLS hypothetical budget levels of high, intermediate, and low amounts. After a pretest with 26 women, most of whom had living spouses, the instrument was revised and the decision was made to interview white, intact couples.

The binomial test was used to determine whether differences existed between clothing and other expenditures in pre- and post-retirement actual and ideal budgets, and to determine if differences existed between the couples' and suggested BLS ranks. Analysis of variance with covariate for correcting the number of items ranked was used to determine if differences existed between the rankings assigned to clothing and amount of income. The paired t-test was used to determine if differences existed between pre- and post-retirement clothing priorities.

Clothing was ranked significantly lower than food and housing and household expenditures on all budget arrangements by most of the couples. Similarly, clothing was ranked significantly lower than transportation and medical care on most arrangements. Only personal care was ranked significantly lower than clothing on all arrangements. No significant differences were found between pre- and post-retirement clothing priorities. However, the post-retirement mean scores were higher. Significant differences occurred between the BLS rankings of clothing and the rankings of the sample. The majority assigned higher priority to clothing than
the BLS suggested.

Elderly who are active apparently retain their interest in clothing and personal appearance. Many couples had decreased income and increased expenditures in items such as medical care, but they either wanted to maintain their previous level of clothing expenditures or increase it.

A Comparison of Clothing Purchases by Elderly Women and Women of Other Age Groups

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The purpose of this study was to analyze the differences and similarities between the purchased clothing attributes of elderly women as compared with women of three other age groups. The attributes investigated were type of garments, color of garments, fiber content, form of fabric, and price range.

The data were obtained from a continuous consumer panel conducted by the Market Research Corporation of America. The panel consists of 7,500 households. It is scientifically selected and stratified according to various demographic variables to correspond as closely as possible, uniformly proportional to the latest report of the Bureau of Census. Each household submits, monthly, an extensive diary of all purchases, with clothing purchases comprising one category.

The sample included all women, 18 years of age and older, who were a part of the consumer panel during the years 1974 and 1975. For comparison, the women were categorized into: young (18-29 years), mature (30-44 years), middle-aged (45-64 years), and elderly (65 and over). All purchases of dresses, housedresses, pantsuits, suits, blazers, blouses, shirts, skirts, slacks, jeans, and shorts for self-use during 1974-75 were included and totaled 73,049.

The data were analyzed by means of the multivariate analysis of variance (MANOVA) to determine if age had a significant effect on the clothing purchasing behaviors when other demographic variables (section of the country, employment, status of the female, income, race, and rural/urban areas) had been removed. A battery of t tests was calculated to determine the differences and similarities. A significance level of .05 was used for the MANOVA analysis and .01 for the t tests.

Results revealed a significant difference between elderly women and women in one or more of the other age groups for their purchases of types of garments, fiber, form of fabric, and garment price range. However, there was no significant difference between groups for color choice in the majority of the garments investigated.

Major significant differences indicated that the elderly women purchase: (1) a greater percentage of dresses, housedresses, and pantsuits but a smaller percentage of shirts, skirts, slacks, jeans, and shorts than women in the other age groups; (2) a greater percentage of polyester and nylon garments than women in many of the other age groups but a smaller percentage of cotton garments; (3) more knits than the young women while indicating a preference for wovens in most of their garment selections; and (4) a greater percentage of higher-priced garments, with the exception of jeans, than the young age group.

Results of this study offer the following implications for manu-
Cross-Section Study of Clothing Expenditures in the United States

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The objectives of this paper were to examine factors influencing clothing expenditures by households in the United States. The research used the most recent and comprehensive source of consumer expenditure data in the U.S.—the 1972-73 Bureau of Labor Statistics Consumer Expenditure Survey. Approximately 12,000 households were surveyed each year resulting in more than 10,000 usable responses in both years.

Multiple regression analysis was used to investigate the determinants of clothing expenditures. The dependent variable was expenditures on clothing and clothing services by households. The independent variables were household income, family size, age of household head, marital status, age of youngest child, education, occupation, and race of household head, location, and employment status of homemaker. Total expenditures were used to represent household income in accordance with previous research.

The results indicated that the independent variables were successful in explaining variations in clothing expenditures by households. The adjusted $R^2$ was 0.59 and 0.57 in 1972 and 1973 respectively. Income as hypothesized was positively and significantly related to household expenditures. The elasticity of demand for clothing with respect to total expenditures ranged from 1.17 to 1.19. This means that a 1% increase in total expenditures would be accompanied by approximately a 1.2% increase in clothing expenditures.

Family size and education also had a positive and significant impact on clothing expenditures. Expenditures increased with family size and the level of education. In contrast, age of household head was negatively related to clothing expenditures. Younger households spent considerably more on clothing than older households, with households in the 25-44 year age groups spending approximately 20-30% more than households headed by persons aged 65 and older. Occupation also influenced expenditures. Clerical and sales workers spent approximately 15-20% more than craftsmen or service workers and approximately 30% more than retired workers. Race emerged as a major variable with households headed by non-blacks spending approximately 30% less than households headed by blacks. The two remaining variables—location and working status of homemaker—also proved significant and were in hypothesized directions. Households in urban areas or with working wives spent proportionately more than households in rural areas or with nonworking wives.

The results of the study are in agreement with previous findings and indicate the continuing importance of variables such as income, age, race, education, and occupation in explaining clothing expenditures. The results may be of use in projecting trends in clothing expenditures in the future.
A Comparison of Clothing Needs with Other Family Needs as Stress Factors in Two-Career Families

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Virginia Polytechnic Institute and State University

The purpose of this study was to investigate the relationship between a dual-career lifestyle and the coping patterns a family develops in the domestic sphere of its life. It attempted to determine behavior and responsibility patterns for meeting family clothing needs. These needs included tasks related to the acquisition of clothing: the decision to purchase an item of clothing, the selection of a specific item of clothing, and the payment for clothing purchased; as well as tasks related to the care of clothing at home and away from home, and the choice of clothing to be worn each day. In an attempt to ascertain the impact of the recent media emphasis on image for career-committed individuals, the respondents were asked to rate the importance of clothing to success in their career. An additional objective was to compare and contrast a family's role pattern for meeting their clothing needs to their role patterns for meeting their food, household maintenance, child care, and economic needs. Stress produced as the result of meeting these needs was also examined.

The sample consisted of 71 married couples living and/or working in the Washington, D.C., metropolitan area. They were selected on the basis of the professional involvement of the wife, using a modified network approach.

The researcher used a self-designed questionnaire to collect data. Questionnaires were sent to participating couples following a telephone call to elicit cooperation. The response rate was 82%.

Frequency and relative frequency distributions, means, medians, and modes were calculated to describe the sample. Chi-square was used to examine three relationships, one of which was the rating given to the importance of clothing to success in one's career and the level of perceived clothing stress. The Wilcoxon signed rank procedure was employed to analyze perceived stress by husbands and wives.

The wife retained primary responsibility for and usually performed tasks related to meeting her individual clothing needs, as well as the clothing needs of the children. The husband retained primary responsibility for and usually performed tasks related to some of his clothing needs, specifically the decision to buy an item of clothing, picking out an item of clothing, and the choice of clothing to be worn each day. These couples showed shared responsibility and behavior for tasks related to finances, family decision making, and child care. Some other family tasks were shared, but responsibility and behavior patterns for the most part remained divided along traditional lines; wives were still primarily responsible for the family's food and child care arrangements, and husbands were responsible for tasks relating to inside and outside household maintenance. Perceived stress was related to patterns of behavior and responsibility; wives reported higher levels of stress than husbands.

This study provided base line data, where little exists, as to dual-career couples' patterns of behavior and responsibility for meeting clothing and other family needs. Data indicate implications for further study of coping patterns within this increasingly popular lifestyle.
In clothing and some other areas, it appears there is a need to further examine the division of work related to family needs; women are coping with careers and many of the traditional homemaking tasks as well.

Clothing Selection of Adolescent Boys

Jean W. Colquett and Jessie A. Warden, The Florida State University

The purposes of this study were (1) to determine selected shopping practices, including what sources of information affect clothing purchased, and where clothing shopping is done; and (2) to determine clothing behavior related to purchases, including how boys compare their wardrobes with those of their peers, how the importance of clothing is related to self-concept, and why clothing items are purchased.

The sample of 260 boys was chosen from volunteers in two Georgia high schools. A pretested questionnaire was administered by the investigator to younger boys, ages 13-14, and older boys, ages 17-18.

Factor analysis and cross-validation indicated validity and a split-half procedure indicated reliability of the questionnaire. Stepwise discriminant analysis was used to test five null hypotheses. Age was the dependent or "grouping" variable and the questions or items on the questionnaire were "classification" or "predictor" variables.

Friends were the most important source of new ideas about clothing, although younger boys were more influenced by neighbors and advertisements. Younger and older boys were similar regarding where clothing shopping was done and how they compared their wardrobes with those of their peers. Younger boys were more interested in external aspects of self-concept, such as physique and appearance, while older boys were more interested in internal aspects, such as health. All boys valued comfortable clothing, though younger boys were interested in clothing that looked good at the end of the day. Although the differences between younger and older boys were stable, little of the variance was accounted for by knowing the age of the boys.

Family Clothing Consumption: Factors Affecting the Purchase of Children's Clothing

Nancy C. Saltford and Cheryl Ostroski, Cornell University

The purpose of this research was to determine the relationships between the purchase of children's clothing and family income; area of residence, social class; number, age and sex of children; children's clothing inventories and total expenditure for parents' clothing.

The study was limited to families with at least one school age child between the ages of 5 and 15. The sample was drawn randomly from school census data. Personal interviews were conducted with 180 families. The families were asked to recall clothing purchases made during the two months prior to the interview. They also were asked to take an inventory of their children's clothing. Ninety-three percent of the families who were contacted agreed to participate in the study.
Predictive equations were derived for both total expenditure for children's clothing and total quantity of children's clothing purchased. To derive the predictive equations, multiple regression analysis was conducted on the two dependent variables, total expenditure and total quantity of children's clothing purchased. Each dependent variable was regressed with the same eight variables described above. The predictive equation for total expenditure accounted for nearly 30 percent of the variance. The equation for total quantity purchased accounted for 15 percent of the variance. Both equations were highly significant.

Total expenditure for parents' clothing and children's clothing inventories had significant direct effects on both clothing expenditures and quantity of clothing purchased. Expenditures also were directly affected by age of the children in the family and by family income. Family income had the smaller effect. Only one other variable—the number of children in the family—had a significant effect on quantity of clothing purchased.

All variables exerting a significant effect were positively related to their corresponding dependent variable, indicating an increase in such a variable would result in a corresponding increase in the dependent variable.

In general, total dollar expenditures increased with income while quantity of clothing purchased did not increase with income. Total clothing expenditures and average price per item were higher for older children. The average price per item decreased as family size increased. The total quantity of clothing purchased was greater for families with more children.

Social class and place of residence showed no significant relationship with either expenditures or quantity of clothing purchased. No significant difference was found between girls and boys on either expenditures for their clothing or on the quantity of clothing purchased for them.

The findings of this study suggest a minimum number of variables contribute to the variation in the purchase of children's clothing, and the most important factors appear to be non-economic. Both parents' and children's clothing inventories had a stronger effect on the purchase of children's clothing, than did income. These two variables together could represent a family's "clothes consciousness." Further analyses of this phenomenon could help better describe family clothing patterns.

Consumer Attitudes Toward Canadian-Made Apparel Products

Cynthia M. Stickl and Marjorie Wall, University of Guelph, Ontario

The purpose of the present research was to investigate the current attitudes of Canadian consumers toward Canadian-made apparel products. Related areas that were also a part of this investigation included: fashion interest; the major evaluative criteria used to choosing sportswear articles; consumer attitudes toward sportswear made in Europe, the United States, and the Far East; consumer knowledge of the Canadian clothing industry; consumer knowledge of designers and knowledge of brand names of sportswear; and demographics.

Suitable analysis was performed on the questionnaire data collected from 1,144 female participants of a nationwide consumer mail panel.
The following nonparametric statistical techniques were used to test the appropriate hypothesis: contingency table analysis, factor analysis, Friedman block technique, Kruskal-Wallis analysis of variance.

The results of the hypothesis testing indicated that while consumers had a generally favorable attitude toward Canadian-made sportswear products, they did not consider the evaluative criterion, made in Canada, as being important when choosing sportswear. Consumers were not knowledgeable about the Canadian clothing industry, the country of origin of designers, or the country of origin of brand names. The evaluative criteria considered important for each of the specified clothing articles for the purchase of sportswear included comfort, fit, style, and ease of care.

The research findings indicated that more concern by clothing manufacturers and retailers should be concentrated on the marketing segment of the industries to complement the progress made in the product development, technology, and productivity segments. Consumers were found to be unfamiliar with much information about the Canadian industry and any benefits they could gain by consuming domestically-made products. Yet, at the same time, they did not hold negative attitudes toward the industry. Thus, suggestions for more vigorous advertising and marketing programs were made.

Deceptive Advertising: An Attitude Change Approach for Footwear and Pantyhose Products

Karen Clark and Brenda S. Witter, Michigan State University

The Federal Trade Commission monitors advertising in an attempt to prevent consumer deception. There is a need for a consumer research methodology that can be used as the basis for identifying deceptive advertising and for evaluating the effect of corrective advertising. The research objectives identified for this study were (1) to empirically test an attitude change approach to detecting deception in advertising; and (2) to measure the effectiveness of a corrective advertisement on eliminating the effects of previous deception.

Both the Fishbein attitude model and the extended behavioral intentions model were used in an experimental design to test for possible deception contained in advertisements of two product categories: pantyhose and footwear. A questionnaire was used in the pretest and posttests that operationalized the three variables of the Fishbein models: (1) attitudes toward behavior; (2) normative beliefs about performing the behavior; and (3) motivation to comply with the normative beliefs.

The experiment took the form of a two-stage nonequivalent control group design. Subjects consisted of 147 high school students in two Michigan cities. Students completed a pretest questionnaire. One week later, the students were divided by classrooms into a control and an experimental group. The first experimental treatment consisted of viewing advertisement treatments for the product class, including those containing alleged deception. A posttest was administered. One week later, the previously divided groups were again divided into control and experimental groups. The second experimental treatment consisted of advertisements designed to correct the alleged deception. A second posttest was administered.
Pretest-posttest gain scores for the control and experimental groups were analyzed using a t-test of independence. No significant differences in gain scores were found for either the attitude or behavioral intention model.

Two beliefs from each product class were selected for further investigation. Mean scores of the brand under investigation were compared with an average of the mean brand belief scores of the other three brands. This technique identified deception for the beliefs that Scholl exercise sandals provide leg exercise and have health value for feet and a corrective effect for the belief that Scholl exercise sandals have health value for feet.

The components of the Fishbein Extended Model were analyzed using multiple regression to identify the contribution of the independent variables in predicting behavioral intentions. The model was highly significant in explaining behavioral intentions to purchase the products.

The results of this study lend evidence to the ability of the Fishbein models to measure attitudes and behavioral intentions. The results also suggest that while individual advertising messages may affect specific beliefs, they do not affect either attitudes or behavioral intentions.

Comparison of Perceptions of Employment Executives and Retail Educators on Areas of Competence for Mid-Management Retailers

Betty Kelly, The University of Iowa

The accomplishments of the American system of retail education in preparing students for careers in retailing are a tribute to merchants who cooperate with schools, and secondary, postsecondary, and proprietary programs providing instruction. In spite of the gains in retail education and increased demand by retail organizations for trained personnel, the relationship between retail educators and practitioners has not always been productive.

Recognizing changing personnel needs in retailing, the purpose of this study was to ascertain the value of components of retailing programs in postsecondary institutions, and to assess compatibility existing between the perceptions of retailers and retail educators concerning the inclusion of items in programs. Specifically, the study addressed evaluation of selected areas of competence needed by potential retailers, and assessment of the level of attainment of competencies by graduates of postsecondary retailing programs.

The research involved development and administration of a mailed questionnaire to a representative sample of retail educators (two- and four-year postsecondary institutions) and employers in three major types of stores (department, specialty, and mass merchandising). The areas of competence forming the basis for the questionnaire were identified through examination of texts, course requirements and job analyses. Using a panel of retail educators and practitioners, data was condensed into 22 areas of competence with the Delphi technique. Participants were asked on the questionnaire to rate on Likert Scale their perceptions of importance and adequacy of current preparation of these com-
petencies.

Completed and usable questionnaires resulted in a response rate of 70 percent. Data was examined, analyzed, and compared in keeping with the basic premise of this study; namely, that there are differences in perceptions held by retailing educators and employment executives in regard to the relative value of areas of competence needed by potential mid-management retail employees. Disparity was found between perceptions of importance for the categories of communication skills, administrative management, educative aspects, and technical knowledge. Educators rated all areas higher in importance and in level of preparation than retailers did. Statistical tests on data showed considerable disagreement in all categories between educators and retailers. Among retail educators, both educator groups agreed on the importance of 16 areas and educators involved in two-year programs consistently ranked areas higher. Ratings of importance as perceived by retailers found agreement on importance of 11 areas. Mass merchandising executives ascribed higher values to the areas than other retail groups.

These findings could provide empirically-based information for use in planning retailing curricula. The research reaffirmed the chasm between those who teach and those who hire in perception of necessary job requirements and pointed to the necessity for continued evaluation for subject matter relevance and communication between these two groups.

WHAT'S NEW WITH YOU

The Organization of the National Consortium for Computer-Based Education in Home Economics (NC-CBE-HE)

Frances W. Mayhew, University of Delaware

The National Consortium for Computer-Based Education in Home Economics is a Special Interest Group (SIG) of a larger organization as ACPTC is a Special Interest Group of AHEA. The parent organization of the NC-CBE-HE is ADCIS - The Association for the Development of Computer-Based Instructional Systems.

The NC-CBE-HE grew from a suggestion to scout the field for an indication of activity in computer-based education (CBE). The response to a questionnaire distributed to all AHEA accredited units (summer, 1977) revealed a burgeoning interest in the use of CBE in home economics and a desire on the part of users and developers to organize a unit by which to communicate. A grant from the University President made an organizational meeting possible (October, 1978). The attendants crystallized their goals, developed the organizational structure, and elected officers. A petition was prepared stating these goals of the NC-CBE-HE:

- to function as a clearing house for information concerning available
Computer-Based Education in Home Economics through publications, symposia, workshops, and a catalog of lessons

- to provide an *evaluative agent* promoting quality of content in home economics related C-B-E through peer review and development of criteria
- to act as a *screening agent* to detect similar interests and decrease duplication of effort in the development of courseware
- to provide, through the affiliation with ADCIS, a *self-educational vehicle* by which members can become aware of advances in the innovative technological capabilities of various computer systems
- to act as a *referral resource* for possible funding to support research and development in computer-based education for home economics.

The petition was presented to the ADCIS Steering Committee and accepted (February, 1979). Affiliation with a technical rather than a content-oriented group provides the NC-CBE-HE members the opportunity to gain an understanding of the unique media. As a SIG of ADCIS the NC-CBE-HE is provided with:

- *Financial Support* in the amount of $5.00/NC-CBE-HE member;
- *Representation* on the ADCIS Steering Committee by the Director;
- a *section* in the ADCIS NEWS available for NC-CBE-HE; the refereed *Journal of Computer-Based Instruction* in which suitable articles may be published; a portion of the program of the ADCIS Annual Meeting designated for a Business Meeting and the presentation of papers.

Information about computerized lessons in all areas of home economics is being actively sought by the NC-CBE-HE. Interested persons are welcome to use the services of the NC-CBE-HE and encouraged to join. Known lessons in the area of textiles and clothing cover Basic Textiles, Body and Pattern Measurement, Metric Measurement, Retail Mathematics, and Clothing and Society. For further information about the NC-CBE-HE, please contact the author.

The Blue Jean Thing

Marcia A. Morgado, University of Hawaii

In the late 1960's, one of the most unusual fashions in history emerged. Blue jeans, deeply rooted in the historical development of America, cast new light on our understanding of the way fashions develop and of the role clothing plays in our lives. Their evolution from work trousers to designer-labeled fashion pants was significant as a departure from traditional evolutionary modes. More significant were the extraordinary proportions jeans assumed as an economic good and the mythic qualities that emerged relative to their social meaning.

"The Blue Jean Thing" is a slide/script presentation that illustrates the history of the blue jeans fashion by tracing the development of myths, symbols, and values that have been attached to jeans. The script draws extensively from analytic literature available on blue jeans to present a clear description of the symbolic and psychological functions jeans have performed. Slides give a sense of the historical development and graphically illustrate the abstract concept of the symbolic function of the trousers.

The idea that cultural meanings are attached to clothing is made
clear through attention given to blue jeans as symbols of the western frontier, American labor, American youth, youthful rebelliousness, rejection of middle class values, sexual freedom, and personal integrity.

The 80 slides and script may be borrowed for classroom use. For further information please write to: Marcia A. Morgado, Assistant Professor, Department of Textiles and Clothing, University of Hawaii, 2515 Campus Road, Honolulu, Hawaii 96822.

Educational Assistance for Apparel Shop Entrepreneurs

Deborah P. Strickland and Kathryn M. Greenwood
Oklahoma State University

The major purposes of the study were to develop and evaluate learning guides pertaining to Inventory Control and Merchandise Management. The content was determined based on a review of literature in the field and consultation with role-model retailers. The format for each learning guide included information, examples and mini-problems related to each performance objective, and a worksheet to correspond with the terminal objective. The learning guides were evaluated by 65 apparel retailers during a Pre-Market Workshop at the Dallas Apparel Mart, May 24, 1979. The data were analyzed using mean scores and percentages and implications were drawn in accordance with criteria for major (below 70% positive responses) and minor (71-84% positive responses) changes. Proposed revisions were formulated and presented to five members of the Apparel Retailers Advisory Committee who participated in the development and evaluation of the learning guides, and final recommendations were made.

The majority of participants (90%) in the workshop reacted positively to the presentation of the learning guides. Over one-half of the 65 participants at the retailers' workshop understood the information and examples and were able to complete the mini-problems and worksheets pertaining to the learning guides. Implications were drawn based on the established criteria and five major revisions resulted.

The revised learning guides were organized into two parts. Inventory control, Part I, included three terminal objectives concerned with perpetual control, periodic control, and resource evaluation. Part II, seasonal merchandise planning, had three terminal objectives pertaining to six-month merchandise plans, open-to-buy plans, and market buying plans. The appendix contained samples, record forms, and selected references.

A survey of approximately 300 apparel retailers attending previous Dallas Apparel Market workshops indicated that the majority of the participants had little formal education beyond high school, had been in business less than five years, and owned or managed stores with annual sales volume under $300,000. The reactions of the apparel retailers supported the urgent need for educational materials designed for practical application for adults with specialized problems such as those of entrepreneurs of small apparel shops. The apparel retailers agreed that the apparel market provided a convenient and unintimidating location in an appropriate setting for learning. The project exemplifies a successful attempt to focus on the need for educational assistance in the workplace.
Plans have been made to use the revised learning guides on an annual basis at workshops in the Dallas Apparel Market sponsored by the American Fashion Association, an organization of apparel manufacturers' representatives. Upon request workshops will be scheduled in other major apparel markets across the country.

Appearance as an Ego Defense Mechanism

Robert Hillestad and Nancy Krumland
University of Nebraska

Part of the domain of every human being consists of a physical substance referred to as the human body. The functions of the human body are not only varied but complex. However, a commonality among all human bodies is that each serves some individual as a visual image that he or she presents to the world. While serving as a visual image, the human body is often surrounded or embellished with stuffs and other material goods. The term "appearance" is used in reference to visual aspects of the human body and its coverings.

Appearance influences the ego by providing a form with which it is associated. Characteristics of the ego, in turn, tend to influence appearance. The interrelationship between ego and appearance operates at both the conscious and unconscious levels. During times when the ego is threatened, strong interrelationships are likely to be activated at the unconscious level.

From time to time, situations arise in life that tend to weaken the concept one has of self. During those difficult times, mental mechanisms or dynamisms that operate both outside and beyond conscious awareness are called upon to restore the ego to its former position. Psychologists use the term "ego defense mechanisms" in reference to various techniques for repairing the ego. The number of ego defense mechanisms that have been identified by scholars varies according to their respective systems of classification. Coleman, one authority on the subject, has identified 17 as follows: denial reality, fantasy, compensation, identification, introjection, projection, rationalization, repression, reaction formation, displacement, emotional insulation, isolation, regression, undoing, sublimation, sympathy, and acting out.

Defense mechanisms are implemented in various ways. Some are carried out in the thoughts of an individual, whereas others are communicated to others in verbal or nonverbal form. Since appearance is interrelated with the ego, it is often a factor during implementation of an ego defense mechanism. The slides that accompany this presentation have been selected to illustrate various ways in which defense mechanisms can be activated through appearance. The presentation was designed to meet the following objectives: (1) to summarize Coleman's theory of ego defense mechanisms; (2) to apply Coleman's theory to the concept of appearance; (3) to reinforce various concepts through visual examples; and (4) to provide a basis for discussion.
A Bibliography of Clothing Literature with Accompanying Indexes

Nelma Fetterman, University of Alberta
Lois E. Dickey and Anthony E. Petrarca, Ohio State University

A multidisciplinary bibliography of literature pertaining to clothing has been developed primarily with the use of the Social Sciences Citation Index. Bibliographic data for journal articles have been retrieved by using references known to be relevant to the study of clothing as entry points in the citation index (forward search). These data have been added to the bibliography as well as the relevant references cited by the authors of the retrieved articles (backward search). The bibliography has been further expanded by using these cited references as entry points and repeating the cycle of forward and backward searches to create a citation network.

Selected bibliographic data obtained during the development of the citation network have been recorded in machine-readable form. The recorded data pertain to journal articles, theses, dissertations, books, and recent technical reports. These data have been supplemented with additional references to known related material that had not been included in the citation network. With all of the data combined, the bibliography currently consists of 2,700 items of which 1,450 are journal articles, 720 are theses and dissertations, 515 are books, and 15 are technical reports. The system is designed to allow annual updates.

The information contained in the bibliography has been made more readily accessible by the production of three indexes. A keyword-in-title index has been produced so that significant words in the title are readily identified. After locating the desired keyword in the index, one can then use the number at the right to refer to the location in the bibliography where complete bibliographic data are recorded. Similarly, an author index has been developed so that if one is interested in knowing the titles of items written by a specific person (whether as principal or co-author), one can use the number at the right to refer to the bibliography for complete details. For comparative purposes, an author/title index has been produced. In the final form, only one of the author and author/title indexes will be included.

The numbering system currently in use in the bibliography will be changed for the final draft. At the present time, the accession numbers have specific purposes. In the final draft, each item will have a unique Arabic numeral assigned and the items will appear in ascending order according to these numbers.

The broad scope of this multidisciplinary bibliography makes it useful not only for home economists specializing in clothing, but for specialists in other disciplines, such as psychology, engineering, sociology, medicine, and economics. The diversity of journals from which relevant articles pertinent to clothing were obtained emphasizes this point.

For further information, please contact: Nelma Fetterman, Faculty of Home Economics, University of Alberta, Edmonton, Alberta, T6G 2M8.
As the job market tightens, it becomes increasingly necessary for graduates of clothing and textile programs to have employable skills. The textile student is often absorbed into the textile industry, but what happens to the student whose major interest is clothing? There appears to be a reluctance in the apparel industry to hire students from home economics programs due to a perceived lack of background related to commercial apparel production. Sidney Shipper, AAMA Education Committee Member and Dean of Fashion Technology at George Brown College in Toronto, Canada recently stated that the apparel industry finds the industrial engineer or technologist more readily convertible to the industry's management needs than the home economics major (Shipper, 1980).

Members of the AAMA Education Committee have expressed concern that most graduates of clothing and textile programs, including many design programs, have little understanding of the real needs and problems of the apparel industry.

A management survey conducted by Kurt Salmon Associates, a well-known apparel consulting firm, indicated the need for young, qualified professional women and men in the national apparel industry and the need for the development and support of educational programs to meet these needs (Salmon, 1971). Based upon a local assessment of the needs of the Dade County apparel industry (Smith, 1978) the Home Economics Department of Florida International University developed a Certificate Program in Apparel Manufacturing Management. A Bachelor's Degree Program in Apparel Management with specialties in Manufacturing, Merchandising, and Design Management is presently before the Board of Regents and scheduled to be implemented in March 1981. There are presently only four similar programs in the U.S., none in home economics. The two-year upper-division coursework includes: Pattern and Grading Analysis, Cutting Analysis and Material Utilization, Machine Evaluation and Selection, Industrial Apparel Assembly and Quality Control, Apparel Work Measurement, Apparel Production Planning and Costing, Textiles, Fashion Production and Distribution, Industrial Financial Decisions*, Plant Layout*, Industrial Supervision*, Engineering Economy*, Basic Programming for Business*, Statistical Quality Control*, and a three-month field experience in the industry. All apparel manufacturing courses are taught by persons with extensive industrial experience.

Similar interdisciplinary programs could be planned by home economics educators, particularly in areas of apparel industry concentration. Where local industrial resources are not available, traditional programs should consider the inclusion of existing courses in industrial engineering, industrial technology, and/or business administration.

FIU is considering the development of a post-graduate internship program for clothing professors interested in extending their understanding of the apparel industry and its needs. Interested parties should contact Adele Smith, Home Economics Department, Florida International University, Tamiami Trail, Miami, Florida 33199 or (305) 552-2531.

*courses taught in other departments
In order to help our majors know more about the clothing needs of many types of individuals, "Clothing Through the Life Cycle" was established as a required course for apparel designers in spring 1980. Since it has no prerequisites, the course also may be taken by students from other departments who come with a wide variety of backgrounds. Our curriculum emphasizes the importance of students applying what they learn to projects from which people in our community and across the nation can benefit. Since students from a wide variety of backgrounds and skill levels enrolled in the course, semester projects needed to be broad enough to give them some guidance in their work. That framework was the design process.

During the first week of the semester, class members were assigned to teams that explored the clothing problems of a specific stage of the life cycle (childhood, pregnancy, etc.). Class sessions alternated between lecture/demonstrations on clothing for various stages of the life cycle (to which each team contributed when its area was the topic of discussion) and sessions devoted to the design research process. The entire class contributed to each team's project as research progress reports were made throughout the semester.

The general project assignment was to solve a clothing problem for a low-income individual or family in the community and to make that solution available to as many people as possible. The use of teams, particularly the interdisciplinary ones that existed in this class, resulted in the investigation of a wide range of resources and a great variety of projects. Questions raised at each stage of the research process forced teams to examine each design decision. One group designed a series of leaflets on children's clothing for low-income families. They investigated the reading levels of typical low-income families, the printing and duplicating capabilities of a local agency, and then developed a series of five leaflets that were visually interesting, yet could be inexpensively printed. The leaflets were adopted by a local agency and were sent out with 2,000 welfare checks to people in our community.

Another group designed a rain protection for a teenager who had cerebral palsy. They tried to develop a design which, through adaptations, could be worn by the non-handicapped as well so that mass production might result in its reaching a lower-income public. With this same goal in mind, they contacted pattern companies and women's magazines about printing or publishing their pattern. Other projects in-
volved a series of lessons on clothing planned for a teacher who works with pregnant teenagers, a board game for parents and children aimed at increasing a parent's understanding of what children like to wear, and a series of public service announcements for the elderly. In addition to first-hand contact with people at various life-cycle stages, students gained a tremendous amount of knowledge about working with community agencies, finding sources of funding, and locating resources that help individuals and families.

What Do You Wear To An Energy Crisis?

Carol Avery and Donna Pettigrew, Florida State University

The Department of Clothing and Textiles at The Florida State University developed and coordinated with the Governor's Energy Office a one-hour production on energy-efficient clothing. The presentation was given on Saturday, May 10, 1980, at 6:30 p.m. at Governor's Square Mall in Tallahassee.

The production's major purpose was to promote the use of energy-efficient clothing by employees working in nonresidential buildings controlled by the Emergency Building Temperature Restrictions Program. Proper clothing selection can make an important contribution to energy conservation by (1) making the wearer comfortable and, thereby, reducing the need for air conditioning and heating and (2) reducing the need for hot water, hot air, and ironing when caring for clothing. The production was designed to serve as a catalyst for the adoption of appropriate dress codes by office managers and workers.

The production was conceived, organized, and run by students. Activities included researching the technical information for the production; hiring staff; developing title and logo; selecting music; auditioning professional and volunteer models from the state government and the local community; developing choreography for models and dancers; designing stage sets, a poster, and advertising flyer; writing a technical brochure and the program script; and working with retailers and fashion coordinators in selecting energy-efficient clothing for the production.

The project, which was originally intended to be an informal student presentation, evolved into a formal contractual arrangement between the Governor's Energy Office and Florida State University. The department head and student originator served as co-directors. The student was responsible for directing the production while the department head handled the budget and made sure the terms of the contract were met.

Universities considering similar projects should insist upon being involved in the early planning activities. Contracts should include realistic time frames that make allowances for student inexperience, adequate budgets, clear definitions of contract terms such as "camera-ready copy," and workable procedures for communicating with the agency and for obtaining its approval. Questions concerning the educational or motivational nature of the production must be clarified and communicated to all participants, including retailers and fashion coordinators. Decisions must be made concerning the use of professional (paid) and nonprofessional (unpaid) models. Technical information supporting the
production should be made available to the news media.

The response was overwhelming. Follow-up stories have been carried by most major newspapers in Florida and more than 600 brochures have been distributed upon written request. Answering the extraordinary demand for useful information can provide visibility for clothing and textiles departments. Suggestions for further activity include similar productions, brochures, and/or videotapes designed for other sections of the country and also research studies of their impact on audience information levels and on changes in dress codes and care procedures.
1. The meeting was called to order by President Marjory Joseph at 2:25 p.m.

2. The secretary read the minutes of the 1979 business meeting. B. Densmore moved and C. Lind seconded that the minutes be approved. Motion carried.

3. Marjory Joseph reviewed factors that have contributed to the need for increased dues. These included increased operating costs, increased services, and need to use savings to continue operating. She also enumerated some of the accomplishments of Jo Ellen Uptegraft, the treasurer, which have given ACPTC a stronger professional base. These include incorporation and obtaining both tax exempt status and a nonprofit bulk mailing permit.

4. J. E. Uptegraft presented the treasurer's report and answered questions related to it. Jo Ellen Uptegraft moved and B. Jean Margerum seconded that the treasurer's report be accepted. Motion carried.

5. Committee Reports
   a. Bylaws and Handbook: Barbara Densmore reported that the bylaws amendments submitted to the membership had been accepted. The national Handbook has been revised to reflect changes in the bylaws and changes in procedures resulting from the change in relationship to AHEA. New sections have been added for the executive secretary, newsletter editors, and honorary membership.
   b. Membership: Charlotte Bennett reported the activities of the membership committee. There has been a revision of the membership application form; use of new membership form by Eastern Region in membership promotion; and revision of the procedure for nominating honorary membership. A recommendation was made to use the regional membership chairpersons in a common membership promotion effort.
   c. Nominating: Marjory Joseph reported for the nominating committee that Anne Kernaleguen had been elected president elect and Shirley Friend had been elected secretary for the 1980-81 membership year.
   d. Publications: Judy Flynn reported that 108 items had been received for the newsletter. This included 50 articles, of which 22 were accepted for publication in the newsletter. Articles were reviewed by the editor and regional editors. An evaluation criteria sheet was developed as was an editorial handbook. The new editor is Deanna Munson from Central Region.
   e. Journal: Joann Boles reported that the committee investigating the publication of a refereed journal has worked on preparing a publication manual that will be circulated to members of the executive board and the regional councils for comments and suggestions. A final draft will be presented to the executive board at the next board meeting.

6. ASTM Liaison: Carol Warfield reported that the representatives have attended a variety of task groups of Committee D-13 including ones on care labeling, apparel sizing, fabric test methods, and standards. The ACPTC representatives will present a seminar at the March 1981 ASTM D-13 Committee meeting in New Orleans to inform ASTM members about ACPTC and how members use ASTM materials and test methods.
7. The 1983 National Meeting will be held in Honolulu, Hawaii, July 5-9, 1983.

8. President's Report: Marjory Joseph reported that the major decision of this year's executive board was the one to increase dues in order to make sure that the organization operated on an economically sound base. The separation from AHEA was completed and ACPTC now collects its own dues and maintains its own membership records. She also reported that the organization has obtained a tax exempt status from the IRS, which will help the organization financially. Liaison with ASTM has continued and liaisons with other organizations have been explored. A publications committee has been studying the feasibility of a refereed journal and this committee has prepared several proposals for consideration by the executive board.

9. Program of Work: Lois Dickey, president elect, presented her proposed program of work for 1980-81. It included the following:

   a. Examine ways to maintain positive mutual relations between AHEA and ACPTC.
   b. Increase the membership by promoting the organization to continuing members and identified potential members.
   c. Endorse publications as an important part of ACPTC service to members. Develop a long-range plan for the publications of the organization, such as newsletter, proceedings, journal.
   d. Assess information available from responses to the manpower survey (1979-1980) and identify ways to make use of the information and subsequent updating of the survey.
   e. Continue support of liaison with ASTM and investigate other potential liaisons that could be mutually beneficial to ACPTC and other groups.
   f. Develop a strategy to promote textiles and clothing as a viable, forward-looking professional area.
   g. Plan for maintaining an ongoing record (to become history) of the field of study as activated through ACPTC.

10. Announcements: Marilyn DeLong announced that Central Region is planning a juried fiber arts exhibit in Minneapolis at their 1982 meeting. She invited participation of ACPTC members. Other members on the committee are Robert Hillestad and Ardis Rewerts.

11. The meeting was adjourned at 3:30 p.m.

Respectfully submitted,

Barbara Densmore
1979-80 National Secretary
I. The meeting was called to order by President, Joan Laughlin, at 2:15 p.m. at the Capital Hilton in Washington, D.C.

II. Dr. Laughlin introduced the officers for the 1979-80 term:
- President: Joan Laughlin, University of Nebraska – Lincoln
- President Elect: Patricia Horridge, Texas Tech University
- Secretary: Hilda Buckley, University of Illinois – Urbana
- Treasurer: Mary Littrell, Iowa State University
- Council Members at Large: JoAnn Lefler, University of Dayton
- Karen Kaigler-Evans, University of Texas at Austin
- Betty Wass, University of Wisconsin – Madison
- Alternate to the Council: Carolyn Callis, University of Texas at Austin
- National Executive Board:
  - Mary Don Peterson, Kansas State University
  - Charlotte Bennett, Morehead State University
  - Audrey Newton, University of Nebraska – Lincoln
- First Alternate to National Executive Board:
  - Ardis Rewerts
- Second Alternate to National Executive Board:
  - Shirley Friend, Southern Illinois University

III. The minutes of the 1979 business meeting were distributed by Secretary, Hilda Buckley. Karen Kaigler-Evans moved to accept the minutes; Betty Wass seconded the motion. The membership voted to accept the minutes.

IV. Treasurer, Mary Littrell, distributed the financial statement:
- Balance on Hand $805.28
- Scholarship and Publication Fund
  - Balance on Hand $517.90
- Juried Art Show Fund $530.91

Gloria Williams moved to accept the report; Karen Kaigler-Evans seconded the motion. The treasurer's report was approved by the membership.

V. Reports of the 1980 ACPTC-CR Committees were presented:

A. Nominating Committee: Betty Wass reported that candidates for the 1980-81 slate of officers were selected from recommendations and the blue interest cards completed at the 1979 meeting. One Hundred and Eleven ballots were cast resulting in the following elected officers for 1980-81:
- President-Elect: Karen Kaigler-Evans, University of Texas at Austin
- Secretary: Imogene Ford, University of Tennessee
Council Members at Large:
- Marilyn DeLong, University of Minnesota
- Alternate to the Council: Swedie Braud, Grambling State University

National Executive Board:
- Martha Jenkins, Western Kentucky University
- First Alternate to National Executive Board:
  - Agatha Huepenbecker, Iowa State University
- Second Alternate to National Executive Board:
  - Esther Meacham, The Ohio State University

Patricia Horridge from Texas Tech University, elected as President-Elect, will serve as President and Mary Littrell from Iowa State University, elected to a two-year term, will continue to serve as Treasurer. Council Members at Large, Betty Wass from the University of Wisconsin – Madison and Karen Kaigler-Evans from the University of Texas at Austin, and National Executive Board Representatives, Mary Don Peterson from Kansas State University and Charlotte Bennett from Morehead State University, will each continue their three-year terms of office.

Members of the 1979-80 Nominating Committee were: Betty Wass (Chairperson), Swedie Braud, Marilyn DeLong, and Margaret Ordonez.

B. Bylaws and Handbook Committee: Shirley Friend reported that Bylaws revisions were approved by 90% of those who voted. Revisions in the Bylaws and recommendations for revisions made by Hilda Buckley, Chairperson of the 1978-79 Bylaws and Handbook Committee necessitated a major revision of the ACPTC-CR Handbook. The revised Handbook has been distributed to each council member and appropriate committee chairpersons and members. Members of the Bylaws and Handbook Committee were: Shirley Friend (Chairperson), Hilda Buckley, Joan Laughlin (ex-officio), and Barbara Schlinhert.

C. Membership Committee. Ann DuPont reported that the ACPTC-CR membership roster was in the process of being updated. An active membership recruiting effort was in progress by the committee. Members of the committee were: Ann DuPont, Chairperson; Margery McBurney, and Linda Nell.

Joan Laughlin announced that due to the changeover from AHEA to an autonomous ACPTC, payment of membership dues has lead to some confusion among members. She encouraged that members pay dues when dues invoice and membership card arrives. Active membership status is assigned upon receipt of membership dues and not receipt of membership card. She urged members to inform those who have not paid dues for the 1980–81 year to do so as soon as possible. She also encouraged recruitment of new members who are now eligible because of Bylaws changes. Textiles and Clothing professors who are not members of AHEA, state extension specialists, and instructors at two-year colleges are now eligible for membership in ACPTC.

D. Fellowship Committee. Martha Jenkins reported that the committee established criteria for ACPTC-CR graduate fellowships. The announcement for the 1981-82 fellowship is available; deadline for submission of applications is March 15. The first ACPTC-CR fellowship recipient (1980-81) is Mary Lynn Damhorst. Ms. Damhorst is a Ph.D. candidate in the college of Communications at the University of Texas. Her dissertation research is on the topic of Clothing as Communication.
Members of the Fellowship Committee were: Martha Jenkins (Chairperson), Imogene Ford, and Esther Meacham.

E. ASTM Liaison. Coila Janecek reported that ACPTC representatives to the ASTM meeting held on October 13-16, 1980 in Philadelphia were: Marjory Joseph (Western Region), Carol Warfield (Eastern Region), and Coila Janecek (Central Region). The meeting included discussion of:

1. Flammability. Drapery, blanket, and upholstered fabric flammability tests are being evaluated.
2. Consumer Products Performance. Glossaries of terms for floor coverings and upholstered furniture are in progress. A merger of ASTM and the National Bureau of Standards regarding standardization of apparel sizing has occurred. Interest has been expressed for an anthropomorphic study.
4. Fabric Test Methods. The guarded hot-plate method for warmth measurements has been evaluated.

The three ACPTC representatives to ASTM will present objectives and activities of ACPTC at the March, 1981 meeting to be held in New Orleans, Louisiana.

F. Juried Art Exhibit Committee. Ardis Rewerts reported that an exhibit was being planned for the 1982 ACPTC-CR conference. She introduced plans that the committee is working on so that members can begin preparing for participation in the exhibit. Information regarding criteria and procedures will be provided in the Spring mailing. Members of the Juried Art Exhibit Committee were: Ardis Rewerts (Chairperson), Rob Hillestad, Marilyn DeLong, and Lynne Richards.

Karen Kaigler-Evans expressed her enthusiasm for the exhibit and suggested that the theme for the 1982 meeting be concerned with the design concept.

VI. Old Business:

A. ACPTC-CR 1981 Conference. Hilda Buckley, program chairperson, reported that the 1981 ACPTC-CR Conference will be held on October 28-30 at the Chase Park Plaza in St. Louis, Missouri. The theme will be "Resource Consumption" and the focus will be on the implications to textiles and clothing professionals of decreasing resources.

B. Outgoing President's Remarks. Joan Laughlin expressed her joys as 1979-80 President of ACPTC-CR and encouraged membership enthusiasm.

VII. New Business:

A. Sites and Dates of Future ACPTC Conferences.

1982: October 22-29 - Minneapolis, Minnesota
1983: July - Hawaii (National Meeting)
1984: Houston, Texas
1985: Agatha Huepenbecker invited ACPTC-CR to Iowa State University, Ames, Iowa
B. Program of Work for 1980-81. Incoming President, Patricia Horridge, outlined the directions that she would like to see ACPTC-CR take during her term of office. These included the following goals:

1. Facilitate the independence of ACPTC;
2. Establish annual fellowship criteria and implement award;
3. Commence juried art exhibit for 1982 regional meeting;
4. Encourage full participation of central region membership in manpower survey undertaken by National;
5. Clarify honorary membership criteria and selection process, and work for mutual understanding of same with National;
6. Improve communications within the association;
7. Encourage participation of Central Region members in National ACPTC Newsletter;
8. Provide smooth transition for new position of President-Elect;
9. Cooperate with National in achieving tax-exempt status;
10. Clarify the purpose of ACPTC-CR to its membership; and
11. Encourage involvement in research and reporting of research at regional and national levels.

VIII. The 1980 ACPTC-CR business meeting adjourned at 3 p.m.

Respectfully submitted,

Hilda Mayer Buckley
Secretary, ACPTC-CR
ASSOCIATION OF COLLEGE PROFESSORS OF TEXTILES AND CLOTHING, INC.
CENTRAL REGION
ANNUAL FINANCIAL STATEMENT
November 1, 1979-October 31, 1980
Submitted by: Mary Littrell, Treasurer

I. GENERAL FUNDS (First National Bank, Fargo, North Dakota)

<table>
<thead>
<tr>
<th>RECEIPTS</th>
<th>DISBURSEMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Balance on hand (October 26, 1979)</strong></td>
<td><strong>$200.58</strong></td>
</tr>
<tr>
<td><strong>Dues receipts (dues received through 7/31/80 and includes money owed from AHEA)</strong></td>
<td><strong>2085.00</strong></td>
</tr>
<tr>
<td><strong>Return of funds forwarded to conference registration committee</strong></td>
<td><strong>500.00</strong></td>
</tr>
<tr>
<td><strong>Conference working balance</strong></td>
<td><strong>1373.27</strong></td>
</tr>
<tr>
<td><strong>TOTAL RECEIPTS</strong></td>
<td><strong>$4158.85</strong></td>
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<table>
<thead>
<tr>
<th><strong>DISBURSEMENTS</strong></th>
<th><strong>$2289.00</strong></th>
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<tr>
<td><strong>Budget</strong></td>
<td><strong>Budget Category</strong></td>
</tr>
<tr>
<td>$500.00</td>
<td>Joint Proceedings</td>
</tr>
<tr>
<td>950.00</td>
<td>January Council Meeting</td>
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<tr>
<td>65.00</td>
<td>Nominating Committee</td>
</tr>
<tr>
<td>10.00</td>
<td>Membership Committee</td>
</tr>
<tr>
<td>75.00</td>
<td>By-Laws and Handbook</td>
</tr>
<tr>
<td>150.00</td>
<td>President's Expenses</td>
</tr>
<tr>
<td>150.00</td>
<td>Secretary's Expenses</td>
</tr>
<tr>
<td>50.00</td>
<td>Treasurer's Expenses</td>
</tr>
<tr>
<td>200.00</td>
<td>ASTM Representative</td>
</tr>
<tr>
<td><strong>139.00 (6.1%) Contingency (no more than 1% of total disbursements)</strong></td>
<td><strong>33.56 (1%)</strong></td>
</tr>
<tr>
<td><strong>TOTAL DISBURSEMENTS</strong></td>
<td><strong>$3353.57</strong></td>
</tr>
</tbody>
</table>

**BALANCE ON HAND (October 31, 1980)**

| **$805.28** |

II. SCHOLARSHIP AND PUBLICATIONS FUND

A. Fund Working Account (Hawkeye Savings and Loan, Ames, Iowa)

<table>
<thead>
<tr>
<th>RECEIPTS</th>
<th>DISBURSEMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Balance on hand February 28, 1980</strong></td>
<td><strong>$570.55</strong></td>
</tr>
<tr>
<td><strong>Account Dividends to September 30, 1980</strong></td>
<td><strong>70.93</strong></td>
</tr>
<tr>
<td><strong>Interest from Money-Market Certificate through August 28, 1980</strong></td>
<td><strong>400.00</strong></td>
</tr>
<tr>
<td><strong>TOTAL RECEIPTS</strong></td>
<td><strong>$1041.48</strong></td>
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</table>

<table>
<thead>
<tr>
<th><strong>DISBURSEMENTS</strong></th>
<th><strong>$23.58</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>Fellowship Selection Committee Expenses</strong></td>
<td><strong>$500.00</strong></td>
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<tr>
<td><strong>1st Installment, 1980-81 Fellowship</strong></td>
<td><strong>523.58</strong></td>
</tr>
<tr>
<td><strong>TOTAL DISBURSEMENTS</strong></td>
<td><strong>$523.58</strong></td>
</tr>
</tbody>
</table>

**BALANCE ON HAND (October 31, 1980)**

| **$517.90** |

B. Investments (Hawkeye Savings and Loan, Ames, Iowa)

- February 28-August 28, 1980: $10,000 Money Market Certificate at 13.629% + Compounding = $10,690.26
III. **JURIED ART SHOW FUND** (Ames Savings and Loan, Ames, Iowa)

In preparation for a juried art show to be held at the October 1982 Central Region Conference, $500.00 was invested on April 1, 1980 in a 2-1/2 year treasury certificate with 12% annual rate of interest. The certificate will mature September 30, 1982.

Account Status on September 30, 1980: $530.91.

**MEMBERSHIP STATEMENT**

As of July 31, 1980:

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active</td>
<td>361</td>
</tr>
<tr>
<td>Reserve</td>
<td>18</td>
</tr>
<tr>
<td>Graduate Students</td>
<td>77</td>
</tr>
<tr>
<td>Associate</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>460</strong></td>
</tr>
</tbody>
</table>
The meeting was called to order by President Joann Boles at 2:15 p.m. Secretary Nora MacDonald read the minutes from the 1979 business meeting. The minutes were approved as read.

The treasurer's report was given by Fran Duffield. It was moved and seconded that the treasurer's report be approved as given. President-Elect Barbara Starke mentioned that a budget committee will set up a budget for next year.

Barbara Densmore, the Eastern Region representative to the National ACPTC Executive Board, reported on the April, 1980, board meeting which was held in Los Angeles. She discussed ACPTC By-Laws changes including membership categories and dues structure. State Textiles and Clothing Extension specialists are now eligible for "active" membership; the "associate" membership category has been eliminated. The new dues structure is based on the operating budgets of the National and Regional Councils, and the proportion is to be established on a three-year period. These changes were approved by ballot in the spring. Dues for 1980-1981, beginning November 1, will be $40 for active members; $32 will go to National and $8 will go to the region. Dues for graduate student and reserve members will be $25; $20 will go to National and $5 will go to the region. The dues increase was necessitated by increased costs in the following: 1) the hiring of an executive secretary; 2) membership processing; 3) planning for the publication of a journal; 4) the publication of combined proceedings; and 5) travel expenses (less $75) for National Executive Board members to an annual meeting. Densmore also reported that a tax exempt status has been approved for ACPTC and that the organization will be on probation until November, 1981. She also mentioned that a bulk mailing permit has been obtained for mailings from the executive secretary's address in Burke, VA.

Geneva Yadav gave the membership report for 1979-1980. A large mail campaign was conducted to encourage membership. Fifteen new members had joined as a result of these efforts.

President Boles introduced the Eastern Region council members. They are: Judy Flynn and Leatha Darden, the new representatives; Phyllis Tortora, the new Eastern Region member to national; and Jessie Warden, outgoing member.

President Boles reported on the results of the ballot to determine interest in a refereed journal. The majority of ACPTC members expressed interest. Boles has been the publications manual chairperson this past year. This committee prepared the draft of a manual which will go to council members in all three regions for feedback during December, 1980.

The meeting sites for the next three years were given by President Boles. Philadelphia will host the 1981 meeting, Atlanta will be the site for the 1982 meeting, while a national meeting will be held in Honolulu during the summer of 1983. Side trip packages will be arranged for the 1983 meeting. Ballots were sent around for the members to select the 1984 location. The site needed to be selected from the central part of the region. The three options on the ballot include: Charlotte, NC, Asheville, NC and The Greenbrier, White Sulphur Springs, WV.

President Boles introduced the members of the nominating committee. They were: Frances McLean, chairperson, Audrey Jarrelle, and Helen Douty. Boles expressed her thanks for their efforts.

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Barbara Starke, the 1980-1981 Eastern Region President, presented her Plan-of-Work for the coming year. Her goals include: 1) to prepare an ACPTC-ER budget, 2) to develop criteria and guidelines for submission of research abstracts, 3) to increase ACPTC-ER membership, 4) to support the development of a national journal, 5) to develop a liaison with government (Mary Barry) and 6) to plan a stimulating 1981 meeting. The 1981 meeting will be held at the Hilton Hotel in Philadelphia, October 21-24, 1981. Starke asked the members to fill out a questionnaire regarding meeting sites, 1981 meeting suggestions and interest in committee assignments.

Judy Flynn expressed thanks to out-going President Joann Boles for an excellent job this past year.

The meeting was adjourned at 3:00 p.m.

Respectfully submitted,

Nora MacDonald,
Secretary, ACPTC-ER

NM:lp
Treasurer's Report  
Association of College Professors of  
Textiles and Clothing-Eastern Region  
October 30, 1980

RECEIPTS

<table>
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<tr>
<th>Description</th>
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</thead>
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<tr>
<td>Balance on hand January 15, 1980 as of auditor's statement</td>
<td>$5268.22</td>
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<tr>
<td>Balance in checking account, February 6, 1980</td>
<td>$2000.00</td>
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<td>Balance in Publications savings account, February 6, 1980</td>
<td>$3268.22</td>
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<tr>
<td>National Dues Rebate 5/79-11/79</td>
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<td>National Dues Rebate 7/31/80</td>
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<td>Interest on Savings Account 3/31/80</td>
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<tr>
<td>Interest on Savings Account 10/25/80</td>
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$956.00

$956.00

$6224.22

DISBURSEMENTS

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>Carol Avery 2/13/80, Telephone calls</td>
<td>38.64</td>
</tr>
<tr>
<td>Phyllis Tortora 2/13/80, Telephone calls</td>
<td>30.86</td>
</tr>
<tr>
<td>Jo Ellen Uptegraft, National Treasurer 2/13/80 Eastern Region's share of</td>
<td>503.21</td>
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<tr>
<td>expenses for Proceedings</td>
<td></td>
</tr>
<tr>
<td>Nora McDonald, Secretary 2/11/80</td>
<td>4.12</td>
</tr>
<tr>
<td>Jo Ellen Uptegraft, National Treasurer 4/7/80 Labels</td>
<td>10.54</td>
</tr>
<tr>
<td>Jo Ellen Uptegraft, National Treasurer 5/21/80 Research Journal account</td>
<td>250.00</td>
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<tr>
<td>Judy Flynn - Editor, Newsletter 10/80 Newsletters</td>
<td>37.50</td>
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$874.87

$874.87

$5349.35

Balance on hand October 25, 1980

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<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Checking Account</td>
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</tr>
<tr>
<td>Publications Savings Account</td>
<td>4026.41</td>
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<tr>
<td>Total</td>
<td>$5349.35</td>
</tr>
</tbody>
</table>

Respectfully submitted
Frances J. Duffield, Treasurer

[Signature]
ACPTC-WR BUSINESS MEETING

Thursday, October 30, 1980, 2:00-3:00
Capital Hilton Hotel
Washington, D.C.

1. Call to Order: The business meeting of ACPTC-WR was called to order by Marilyn Horn, President.

2. Introduction of Executive Board: The current board members for ACPTC-WR were introduced to the members.

3. Minutes of the October 11, 1979 Business Meeting: Amy Sinclair, Secretary for the year 1978-79, reported that only minor editorial changes had been made to the minutes as published in the proceedings (available at the conference). Janet Bubl made a motion to accept the minutes as revised editorially. The motion was seconded and passed.

4. Treasurer's Report: Nancy Owens, Treasurer, presented the financial report (attached) for the period November 29, 1979 through October 9, 1980. She reported that the Western Region receives $8 out of the $40 annual dues received by National for each WR member. It was moved/seconded/passed that the treasurer's report be accepted.

5. Committee Reports:

   Memberships: Doris Hime, Chair, encouraged the members to go back to their schools and encourage non-members to join ACPTC. Many new members have been solicited from Canada in the last year, due to the efforts of members.

   Bylaws: Janet Bubl, Chair, reported that the bylaws had been amended to reflect the changes in the National bylaws (as voted on by the members of ACPTC). The revised bylaws will be distributed to members of the Executive Board. The bylaws will be available to other members upon request from Susan Kaiser, Secretary (1979-80), Division of Textiles & Clothing, University of California, Davis 95616 (916-752-6231).

   Regional Conference: Ardis Koester reported that the 1981 regional conference will be held in Portland, Oregon, October 23-24, 1981. The theme will be "Perspectives and Prospects". One day will be devoted to fashion merchandising, while the other day will be devoted to academia, programs, and universities. The tours will tentatively be held on Thursday, October 22.

   Janet Else, Chair for the 1979 conference in Denver, reported that there had been 75 registrants for that conference.
Liaison Representatives for ACPTC-WR to:

National Executive Board: Janet Else reported that the two major issues confronting the National Executive Board in the past year had been the raising of the dues and the publications manual for the proposed journal.

Western Region Coordinating Committee 23: Jean Margerum reported that WRCC-23 had met in San Francisco on October 27-28, 1980. The committee has copies of the abstracts on current research in the Western Region. These may be obtained for the cost of xeroxing from Barbara Harger at the University of Hawaii. Back copies are also available. The committee has also formulated a booklet (in draft form) of potential publication sites for textiles and clothing. This will be published later and made available to members for a fee.

6. Future Meeting Sites: Marilyn Horn stated that no meeting site has been confirmed for the 1982 regional conference. Arizona had issued an invitation, but the status of this invitation is not known at the present time. (Subsequent to the meeting, Mary Jean Wylie confirmed by telephone to Marilyn Horn that the University of Arizona would host the 1982 meeting.) Barbara Harger stated that the National conference was tentatively to be held in Honolulu, July 5-9, 1983. Marilyn suggested that the members return to their universities and speak with colleagues regarding 1982 and 1984 meeting sites. Any invitations should be submitted to Marilyn Horn.

7. Proposed Budget: Nancy Owens reported that the budget committee had formulated a tentative budget for the year 1980-81. This was presented to the members for discussion. There was discussion on the decision by the Executive Board to allocate $250 to each board member for travel expenses to the Washington conference. Charlene Lind made a motion that there be no deficit spending by the Executive Board. The motion was seconded. There was discussion to the effect that we need to recognize that additional income is needed to run the organization. Jean Margerum noted that one way of increasing income is through increased membership. The motion to disallow deficit spending (i.e., to maintain a balanced budget) was passed.

8. Introduction of New Officers: The following individuals were elected to office by the members:

Janet Else, President-Elect (1980-81)
Merry Jo Dallas, Board Member (1980-83)
Ardis Koester, Board Member (1980-83)
Barbara Uriu, Board Member (1980-83)
Jean Margerum, National Board Representative

9. New Business: Chris Milodragovich, Chair for the Nominating Committee, requested input regarding potential board members and officers. The committee consists of Doris Hime and Chris Milodragovich.
10. **Adjournment:** The meeting was adjourned by Marilyn Horn.

Respectfully submitted,

*Susan B. Kaiser,
Susan B. Kaiser, Secretary

---

**Association of College Professors of Textiles and Clothing-Western Region**

**Financial Report for the Period - November 29, 1979 through October 9, 1980**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash on hand and in bank, November 29, 1979</td>
<td>$4803.02</td>
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<tr>
<td>(money transferred to Bank of America, September 26, 1980)</td>
<td></td>
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</table>

**Receipts**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dues received 1/31/80</td>
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<tr>
<td>Dues received 2/19/80</td>
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<td>Dues received 2/29/80</td>
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<tr>
<td>Dues received 4/30/80</td>
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<tr>
<td>Dues received 7/31/80</td>
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<tr>
<td>Payment of invoice from LA meeting</td>
<td>26.00</td>
</tr>
<tr>
<td>Refund from Denver meeting</td>
<td>1450.14</td>
</tr>
<tr>
<td><strong>Total receipts</strong></td>
<td>2221.14</td>
</tr>
</tbody>
</table>

**Disbursements**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postage, nominating committee</td>
<td>31.50</td>
</tr>
<tr>
<td>Postage and phone, Clara Fink, treas.</td>
<td>10.51</td>
</tr>
<tr>
<td>Proceedings</td>
<td>483.08</td>
</tr>
<tr>
<td>Labels for ballots</td>
<td>10.67</td>
</tr>
<tr>
<td>Executive meeting, Marilyn Horn</td>
<td>265.92</td>
</tr>
<tr>
<td>Publication committee travel</td>
<td>250.00</td>
</tr>
<tr>
<td><strong>Total disbursements</strong></td>
<td>1051.68</td>
</tr>
</tbody>
</table>

Cash on hand and in bank, October 9, 1980  5972.48

Submitted by Nancy Owens, Treasurer