Methodological Approaches and Refinements

This section highlights an openness toward multiple methodological approaches and types of analyses associated with social aspects of dress. This is important because we do not want what we know to be an artifact of how we come to know. The fact that, in the past, as a field of study, we have relied heavily on quantitative data gathered using survey methodology, means that we must entertain alternative methods of knowing. Authors in this section address issues of external validity, measurement reliability, the extent to which data may violate assumptions of the statistics used, and the appropriate use of statistical techniques. Proponents of qualitative techniques address the importance of context as a variable affecting the social aspects of dress and suggest qualitative techniques as a means of incorporating contextual issues. Issues addressed by authors in this section have implications for graduate education.
The Applicability of Ethnography and Grounded Theory to Clothing and Textiles Research

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There is an epistemological chasm in social science which deeply affects us as researchers in the clothing and textiles field; the issue at hand is the division between researchers using qualitative and quantitative methods. Most researchers in our field employ the use of quantitative methods. In this paper, I propose that clothing and textiles scholars rediscover the value of ethnography, a qualitative research method.

Ethnography, particularly when accompanied by grounded theory, is especially suited for many of the research questions that we face as we seek to understand human behavior in relation to clothing and appearance. Ethnography stems from the naturalistic tradition of social research; behavior is examined in its cultural context. It is an established research method, and a basic form of social research (Wax, 1971) inasmuch as it bears a close resemblance to the ways that people make sense of the world in routine interaction (Hammersley & Atkinson, 1983).

In this paper, I discuss ethnography and its emergence from the naturalistic research tradition. Next I describe the relationship between ethnography and grounded theory, which is generated during the ethnographic fieldwork and grounded in the empirical data. Ethnographic research projects undertaken by scholars both inside and outside of our field are discussed, with ethnographic clothing studies examined in greater depth. I suggest that by using this method, we can increase the cultural sensitivity of our work. Furthermore, I suggest that through a thorough analysis of the micro (individual) level of social organization, we learn a great deal about the macro (collective) level of society. These benefits are directly applicable to the increasingly global nature of the clothing and textiles field. Greater cultural sensitivity can increase understanding between people engaged in international commerce, and can therefore facilitate the flow of both goods and services in the textile industry.

While quantitative methods have been dominant for the past few decades, recently, the use of qualitative methods such as ethnography has received increased interest by researchers from various fields, including home economics (Daly, 1984; Littrell, 1980). Qualitative methods may simply be a better choice when investigating certain research questions. A major limitation of surveys and experiments is that these quantitative methods do not lend themselves to capturing the meaning of everyday human activities.

Many social researchers feel the tension between these two opposing research paradigms (Johnson, 1975; Schwartz & Jacobs, 1979; Wilson, 1971) referred to here as "Positivism" and "Naturalism". On one hand, some social researchers embrace the positivist paradigm that is modelled on the practices of the natural sciences and is allied with quantitative methods. On the other hand, the naturalist paradigm is based on ideas concerning the distinctiveness of the social world, and is allied with qualitative, and particularly, ethnographic research methods (Hammersley & Atkinson, 1983). And while the focus of positivism is on the discovery of universal laws, the primary task of naturalism is cultural description. While radically different from each other, both qualitative (naturalistic) and quantitative (positivistic) methods are effective techniques when used appropriately by expert researchers.

It is my contention that the use of ethnographic fieldwork and grounded theory are very well suited to help the researcher understand concepts that are deeply embedded in culture; concepts such as gender, signs and symbols, and identity. This is based on the premise that naturalistic research methods yield a valid, or accurate view of social life. Through the use of naturalistic research, we study small groups or sub-cultures in their cultural contexts, and then connect the micro to the macro. Through realistic and factual representation, the
micro and macro are linked in naturalistic research.

**Naturalism**

According to social anthropologists Hammersley and Atkinson (1983), the use of naturalism emerged as a negative reaction to the development of the survey research tradition, in support of ethnography and other qualitative techniques. In sociology, naturalistic research became synonymous with the University of Chicago ("Chicago Sociology" or "the Chicago School") from the 1920s through the 1950s. The Chicago School extensively utilized qualitative fieldwork; a notable proponent of naturalistic research from the Chicago School was Herbert Blumer (Blumer, 1969; Lofland, 1980). Later on, naturalism was strengthened by the renaissance of social psychology in the 1960s.

Naturalist researchers point to the dangers of drawing inferences from what people say and do in research settings as opposed to what they say and do in the real world (Hammersley & Atkinson, 1983). The distinction between natural and artificial research settings leads to the debate over ecological validity. Hammersley and Atkinson (1983) note that "many of the naturalists’ criticisms of positivism relate to concerns about the effects of the researchers and their procedures on the responses of the people studied" (p. 10). These concerns have resulted in several studies to assess the impact of researchers and their methods on the data generated (Orne, 1962; Rosenthal, 1966; Schuman, 1982; Sudman, 1974). The way in which subjects respond in experimental settings may not accurately reflect how they would respond in real life settings. This awareness has resulted in a call for ethnographic techniques such as participant observation to be used as a back-up to experimental methods (Crowle, 1976).

Naturalists propose that as far as possible, the social world should be studied in its natural state, undisturbed by the researcher. The most general label for this type of research is qualitative social research. Naturalists favor qualitative methods in general, and ethnography in particular, as the most legitimate social research method (Hammersley & Atkinson, 1983).

A key parameter of social research, according to many qualitative researchers, is fidelity to the phenomena under study. The social world, it can be argued, is not understandable exclusively in terms of causal relationships, or by the subsumption of social events by universal laws. According to Hammersley and Atkinson (1983), this is because human actions are, in part, based on social meanings and the social context of the interpretations. Through naturalistic methods, particularly ethnography, we come to see the world through the eyes of the people we are studying. Naturalists argue, as I do, that we must adopt an approach that respects the nature of the social world, which allows it to reveal its nature to us. It is my contention that one way this goal can be reached is through the use of the ethnographic method and grounded theory.

**Ethnography**

Rooted in anthropology, and adopted by the Chicago School in sociology, ethnography is based on in-depth investigation of cultures and sub-cultures. Fieldwork is generally a long process; a year or more of fieldwork is normative. Ethnography is multi-modal; several techniques are used to gather information (LeCompte & Goetz, 1982). For contemporary ethnographic projects, the primary methods of ethnographic data collection are participant observation, written field notes and interviews.

To begin an ethnographic project, the researcher must first gain access to the group under study. The establishment of rapport and trust are crucial to the success of the project; the researcher must be careful not to be perceived as an intrusion. The early phases involve a great deal of observation and rigorous note-taking to record social behavior. As the community becomes more comfortable with the researcher, in-depth interviews (generally tape-recorded), and photography may be undertaken. Some groups will not allow the use of cameras and tape recordings, making the field notes much more critical for the collection of data.

Interviews of individuals and groups are a primary data gathering technique. When the researcher feels she has gained the trust of her informants, she may begin conducting interviews. In order to preserve the natural
research setting, interviews generally follow a natural conversational style, rather than that of a scripted interview. Life histories are taken and kinship charts are often developed. (These are crucial methods for obtaining statistical and demographic information.) Over time, as patterns begin to emerge, the ethnographer may develop a series of interviews to focus on a specific issue. In order to be consistent, these interviews contain a sequence of questions that is the same from one interview to the next. For example, in a recent project I investigated the use of feminine appearance by sorority girls. In the general interviews, I became aware of the importance of appearance in the selection process known as rush. Since there were two different types of rush, I constructed specific interview questions to flesh out the differences between the types of rush and the types of girls admitted to the sorority. As a result of the detailed interviews, a consistent pattern (and one that I had never suspected) emerged: girls who were not considered to be pretty by conventional standards could much more easily get into a sorority through informal, rather than formal rush.6

As the fieldwork progresses, journals are kept throughout the project and the field notes are constantly analyzed. Data in the field notes are coded, comparisons are made and linkages are observed. From this, we are able to ascertain normative patterns of behavior within their cultural context. Honigmann (1976) noted that pattern recognition begins with the inspection of a series of things, field notes, photographs, recordings or other items and abstracting from them one or more general features recognized in them. In addition, patterns may be analogous to ideal types in that the type is constructed from observation of the characteristics of the subjects under study but is not intended to correspond exactly to any particular case. The ideal type is used to test hypotheses about empirical reality.

Essentially based on naturalism, ethnography is primarily a way of thinking about and approaching the fieldwork. It is holistic in its attempt to understand context. It is this global sense of a generalized understanding that creates a difference between ethnography and experimental techniques. Further, ethnography utilizes inductive reasoning, characterized by extrapolating from the specific to the general. Related to this is an emphasis on the relationship between cultural elements that was exemplified by Malinowski (1922).

A key feature of ethnographic analysis includes the awareness of researchers that their own ethnocentrism could bias the collection of data, especially when doing research in cultures different from their own. As a consequence, the ethnographic approach requires the use of cultural relativism, the notion that all cultures need to be interpreted from their own perspectives. For example, what may appear irrational to a technological society may be considered entirely rational to a pre-industrial culture. Ethnographers ideally approach the field with few pre-conceived notions and are open to whatever they find; they set out to discover new ideas rather than confirm or reject existing theories. This is of great benefit to the study of non-Western cultures.

Whereas ethnography has traditionally been utilized by anthropologists and sociologists studying rural societies with simple technologies, it is a method that is increasingly being used by many disciplines to study highly technological urban societies. The most obvious application is in the use of ethnography to study sub-cultures. There is a significant body of ethnographic literature on urban and suburban sub-cultures (Fine, 1987; Gans, 1967; Horowitz, 1983; Liebow, 1967; Riedel, 1985; Suttles, 1968; Whyte, 1943), and clothing is often discussed, though rarely in depth. Small groups are connected by networks that produce a sub-culture which then becomes part of the multi-cultural American society (Fine, 1987). While cultural factors are significant in the lives of ethnic groups and other distinct sub-cultures, we need to acknowledge that this can also be true of even smaller groups referred to as ideocultures.

The concept of ideoculture originated with Fine's analysis of the creation of culture by small-group process. Examples of ideocultures include selective groups such as social cliques, occupational groups, neighborhood associations and other organizations, such as schools. In his ethnography about boys in Little League, Fine (1987) briefly describes the role of appearance in group identity. This phenomenon is apparent in
schools as well. Spradley (1979) notes that schools have their own cultural systems, and he challenges us to note "the language, values, clothing styles and activities of students" (p. 12) as representations of those cultural differences.

Sociologists and anthropologists have produced many ethnographies of non-Western cultures that examine clothing as one of a number of cultural variables. Ehlers' (1990) fieldwork investigated the demise of traditional textile production in a Guatemalan town, and the role of changing clothing styles in contributing to those changes. Using the ethnographic approach, social scientists have investigated the use of clothing as a marker of ethnic, social and/or religious identity (Boytton, 1989; Branstetter, 1975; Gingerich, 1966; Hostetler, 1980; Mernissi, 1987; Scott, 1986). While these ethnographers investigated clothing from its standpoint as a part of the cultural system, researchers from the clothing/textiles field need to devote more attention to the cultural context in which clothing belongs. It is my contention that we can do that by utilizing the ethnographic approach, combined with grounded theory.

Grounded Theory

In a highly respected book, Glaser and Strauss (1967, p. 1-2) assert that there has been an overemphasis in sociology on the verification of theory with a resultant de-emphasis on the prior step of discovering the concepts and hypotheses relevant to the area that is to be researched. An alternative to formal theories, and one that reduces ethnocentrism because behavior is interpreted in the context of the culture studied, is to develop theories grounded in the empirical data of cultural description. Glaser and Strauss have called this grounded theory.

Expanding on this concept in a later work, Strauss (1987) noted that with ethnography, the development of theory takes precedence over the testing of extant theories. Grounded theory is developed by systematically collecting, coding and analyzing data from field notes, interviews or other documents. That data is intensively analyzed, often sentence by sentence or phrase by phrase. The focus of analysis is not on merely collecting or ordering data, but on organizing many ideas which have emerged from the data.

Ethnography offers an excellent strategy for discovering grounded theory (Spradley, 1979). As theory that is discovered or generated from data rather than being abstract and tentative, Bailey (1987) noted that grounded theory is developed by:

(a) entering the field without a hypothesis
(b) describing what happens, and
(c) formulating observation-based explanations.

The use of inductive reasoning, i.e., reasoning from the particular to the general, characterizes grounded theory. The researcher spends a great deal of time observing the group under study and then draws on the data to develop generalizations. Theory emerges from the data. Glaser and Strauss (1967) state that the theory must be able to explain the behavior being studied. Through systematic observation of dying patients, they developed the category of variable social loss, which was defined as the degree of loss the patient's death would represent to his/her family and employer. It became clear that the higher the patient's social loss, the better his/her care while hospitalized. This was clearly an emergent variable in that it was unanticipated by the researchers. Fortunate and unexpected discoveries made by accident, otherwise known as serendipity are a major benefit to grounded theory.3

In qualitative techniques during the process of encoding the data, categories are used in order to group the data. Using an inductive approach, the researchers immerse themselves in the data to identify salient themes. Strauss (1987) argues that theory ought to be developed in intimate relationship with data, with researchers fully aware of themselves as instruments for developing that theory. At the beginning of the project, the researcher is immersed in data collection. As the project develops, theories which do not pertain are discarded. As a consequence, theory development, data collection and analysis run concurrently until the end of the project, when analysis becomes a full-time occupation.
Ethnography, Grounded Theory and Clothing Research

A search of clothing and textiles literature indicates that little ethnographic research has been conducted by clothing and textiles researchers on the cultural aspects of clothing. However, I must note that many of us do publish in journals outside of our major field. Some notable studies (published in the home economics or clothing/textiles journals) that used ethnography need to be mentioned. Hamilton and Hamilton (1989) investigated the dress of a tribe in Thailand and its relation to social reality, and noted that traditional ethnographic methods "can provide insight into the relationship of dress to human experience that more expedient methodologies ignore" (p.16). Daly (1984) analyzed titles and abstracts of papers published in major home economics and clothing/textiles journals to locate evidence of the ethnographic approach as used in our field. She found three articles (Eicher & Erekoisma, 1980; Horn, 1974; Malinauskas & Old, 1978), three theses (Azunna, 1977; Pree, 1970; Robinson, 1968) and two dissertations (Littrell, 1977; Wass, 1975) followed later by articles (Littrell, 1980; Wass & Eicher, 1980) that had used the ethnographic approach. Significantly, all were used in research projects on non-Western groups. By immersing themselves in the cultures under study, these researchers became sensitive to the numerous layers of meaning that are attached to clothing.

The applicability of the ethnographic method to the study of non-western cultures is understandable. However, I would like to suggest that clothing and textiles scholars use this method to study groups closer to home. The ethnographic method has been used effectively in my recent research with sororities. In an investigation the differences between idealized appearance images and actual dress and adornment practices, I am finding a great difference between what the sorority women report as typical behavior, and what is factually observed. Similarly, Littrell (1980) noted that fieldwork allowed the opportunity to compare the "ideal" to the "real" culture. One of the primary benefits of qualitative research is that it looks at actions, rather than attitudes. According to LeCompte and Goetz (1982), it also is of benefit in that data gathering precedes hypothesis formation. They state that ethnography may provide a depth of understanding lacking in other research methods.

Questions are often raised about the reliability and validity of ethnographic methods. Reliability is concerned with replicability; validity is concerned with accuracy (LeCompte & Goetz, 1982; Pelto & Pelto, 1982). Validity is the greatest strength of ethnographic methods, according to LeCompte and Goetz (1982) who note that, when compared to surveys and experiments, ethnographic methods demonstrate high internal validity. They attribute high validity to the length of time involved in fieldwork, the naturalistic research method and the empirical grounding of interviews. In noting that the researcher's approach while in the field is one of disciplined subjectivity that allows for constant self-monitoring and flexibility, LeCompte and Goetz come close to a description of grounded theory as yet another benefit to the use of ethnographic techniques.

However, reliability may be a significant problem for ethnographic researchers. The replication of a previous study is often difficult in ethnographic research because few ethnographers write up their methodology sections in enough detail that another researcher could attempt replication. When compared to the rigor of quantitative research, it may appear that replication of the research is impossible. However, according to Pelto and Pelto (1982) interview procedures used by sociologists, anthropologists and other qualitative researchers have been demonstrated to produce approximately the same range of responses on repeated trials, even with different interviewers.

Even the most exact replication of research methods may fail to replicate results. LeCompte and Goetz (1982) note that because ethnographic research occurs in natural settings and often is conducted to investigate social change, it is hard to reproduce those dynamic situations. Moreover, "because human behavior is never static, no study can be replicated exactly, regardless of the methods and designs employed" (p. 35).

Nonetheless, ethnographers attempt to reduce threats to reliability through several strategies.
Low-inference descriptors, phrased in concrete and precise terms, are used in the field notes (LeCompte & Goetz, 1982; Lofland & Lofland, 1984; Pelto & Pelto, 1982). These are intentionally used to keep field notes as objective as possible. Multiple researchers may be used to guard against threats to reliability; teams are trained in inter-observer reliability. Participant researchers (local informants) may be enlisted to confirm that what observers have seen and recorded is viewed consistently. Finally, peer examination through research in process discussions abounds in ethnographic research, and, of course, peer review of research articles helps to maintain checks on the research process.

To ethnographers, the benefits of this research method far outweigh the problem with replicability. Ethnographers benefit from the production of rich data; data that is observed to be consistent and mutually supportive across a broad range of topics within the research setting. Rich data is also deep in that it shows us the interconnectedness of cultural traits; it is imbued with layers of meaning. Hence, rich data enhances validity, in that it puts the element we study into socio-cultural context.

Ethnography specifically, and qualitative methods in general, are effective methods to use whenever the researcher needs first hand behavioral information, and when the goal is understanding behavior in its social and cultural context. The questions I address in my research generally relate to the symbolic, ideological and cultural use of dress and adornment. For example, in a recent project I discovered that women's dress in Holdeman Mennonite society has changed little over time primarily due to the role of patriarchal power in that society. This was in spite of women's desire for change and inability to affect those changes (Boynton-Arthur, in press).5

One potential disadvantage is that qualitative fieldwork is slow if participant observation is the primary research method. In situations in which interviewing dominates, fieldwork is considerably hastened. In addition, qualitative components can be added to quantitative studies to increase validity without taking much additional time. Studies that integrate both methods have the benefits of both approaches. It is my contention that any time a researcher is working in a relatively unknown area, the use of ethnography and grounded theory will yield the most culturally sensitive results because it allows us to discover what is happening, rather than test against a known model.

With ethnographic fieldwork, the researcher has a vantage point from which it may be possible to connect the micro to the macro; to connect individual choices to societal issues. Examples of this are found in Kaiser and Chandler's (1991) work on gender identity, Hamilton and Hamilton's (1989) work on the Karen, Mernissi's (1987) examination of the relations between gender, politics and clothing, and my recent work on clothing and social control (Boynton-Arthur, in press). Individual choices and behavior may then be put into their cultural context based on the intimate knowledge gained by the ethnographer through qualitative fieldwork. Such in-depth knowledge gained from grounded theory and ethnographic methods can circumvent the cultural biases that we, as researchers, could bring to our work.

The main questions regarding social inquiry concern characteristics, causes and consequences of social phenomena (Lofland & Lofland, 1984). For clothing and textiles research, these include patterns of human behavior toward clothing, as well as the underlying socio-cultural systems, such as gender, that control and subconsciously direct clothing usage. Through the use of grounded theory and qualitative methods, we can discover the ideological basis of a great deal of behavior related to clothing. For example, attitudes concerning one's gender identity are readily seen in the use of clothing. A classic example is that of transvestite, who dresses in the clothing of the opposite sex. Issues that direct this behavior are complex, as is gender. It is my opinion that ideological constructs such as these, are best investigated qualitatively, since ideology thrives beneath the conscious level. My contention is that qualitative research yields the richest data and leads to innovative theory building. Clothing and textiles research can benefit from these methods and techniques. Indeed, Nagasawa, Kaiser & Hutton (1989) challenged us to do just that when they stated that "empirical research
involves qualitative as well as quantitative studies, with the former being as legitimate a method of discovery as the latter in clothing and textiles" (p. 30).

It is clear to me that, using naturalistic modes of research, clothing and textiles scholars will be able to approach the analysis of dress and adornment from a unique perspective. In addition to the main benefit of being able to tap the ideological structures of beliefs, attitudes and values that direct behavior in relation to clothing, the use of grounded theory and ethnography will help us to approach this complicated topic with greater sensitivity.

It is critical that we become sensitized to cultural differences. As our field, and indeed our lives, becomes increasingly affected by global issues, it is necessary for us to be more open to cultural diversity. The use of the ethnographic approach helps us to appreciate that diversity, and makes us aware of cultural bias. Additionally, one of the keys to this method is the understanding of context. By being aware of the importance of context, perhaps we will better understand what we have discovered through our research. This might lead to better discussion and implication sections in our research reports. And finally, a side benefit from this method is serendipity. Often, we find what we never expected, and it's inevitably exciting!

References


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**Endnotes**

1 While some qualitative researchers exclusively rely on qualitative methods, others will also employ quantitative methods in the process of data collection. I often include quantitative components to my research projects. Kaiser and Darnhorst (1991) suggest that in the field of clothing and textiles research, we should avoid the tendency toward opposing research paradigms. Instead, we should tolerate diversity in approaches toward scholarly inquiry.


3 I benefitted from serendipity in my own research. After having had little success in gathering data on the dress code of the Hoidern Mennonites, I noticed that when women talked about discipline and self-control, the topic of clothing inevitably arose. Eventually, I was able to collect the data I had pursued for years by asking about control.

4 The sorority research project is an example of the use of ethnography in an American sub-culture. A very brief overview of the progress of the project is as follows: (1) develop informal relationships with the people under study (2) seek formal permission to gain entree for the purposes of research (3) attend numerous functions/activities, formal or unstructured (4) take photos and copious notes throughout observation while in the field (5) keep a journal of thoughts as to how the work proceeds (6) conduct and transcribe interviews (7) analyze and code data (8) refine research questions (9) sort the data (10) write up the report.

It is essential to understand that the data collection and analysis (items 3-8) occur simultaneously; in fact, while the early stages of a project are devoted to data collection with some analysis, toward the end, analysis predominates.

5 Years ago, I had attempted to investigate this question quantitatively; it was an unsuccessful attempt primarily due to the (perceived) invasive nature of this type of research. While the Mennonite women participated in the questionnaire, they did so reluctantly and answered few of the questions.
A Comparison of Qualitative and Quantitative Approaches to the Social Aspects of Dress

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Use of qualitative research has taken a back seat to quantitative research in the study of many social science fields, including the social aspects of dress. However, there is evidence of increasing interest in qualitative research. For example, some research articles use or discuss qualitative methods (Daly, 1984; Holman, 1980; Littrell, 1980), new specialized professional journals such as Qualitative Sociology and The Journal of Contemporary Ethnography are available, and books on qualitative research in various disciplines have been published (Lincoln & Guba, 1985; Miles & Huberman, 1984; Patton, 1980). College courses offered in qualitative research methods are increasing in number, and collegial debate flourishes about the advantages of qualitative research and its appropriateness in social science research. To encourage the use of qualitative research, this paper will review the debate surrounding qualitative research; describe the qualitative and quantitative paradigms, methodologies, and analyses; and compare qualitative and quantitative research approaches to the social aspects of dress.

Qualitative Research

For years researchers have argued as to whether a qualitative or quantitative approach is better. Much of the argument has focused on the relative strengths and weaknesses of each approach's techniques rather than the contrasting paradigms. Glaser and Strauss (1965), Denzin (1978), and Strauss (1987), suggest that the principal debate is whether qualitative research can be shown to be as experimentally precise and rigorous as natural science research through the use of frequencies, statistical analyses, and significance levels. On the other hand, Zelditch (1962) questions the appropriateness of quantitative methods for every research question and whether the issue is an either/or proposition. He suggests that "to demand that every piece of information be obtained by a probability sample is to commit the researcher to a grossly inefficient procedure and to ignore fundamental differences among various kinds of information" (p. 575). He supports matching the method to the research question and mixing qualitative and quantitative methods as appropriate.

Kirke (1982) and Glaser and Strauss (1965) acknowledge another widely held belief about qualitative research—that it is proper and useful for exploratory research. Others support the use of both qualitative and quantitative methods in a single research project, one form of triangulation, "the combination of methodologies in the study of the same phenomenon" (Denzin, 1978, p. 291). Jick (1979) suggests that doctoral dissertations often use triangulation of methods such that qualitative methods are used to define and operationalize concepts before data are collected and quantified. He argues that triangulation strengthens or counter-balances relevance, obtained through qualitative means, and precision, obtained through quantitative means.

Denzin (1978) extends the concept of triangulation past exploratory research and multiple methods. He argues that using several sources of data, theoretical perspectives, and methods will confirm time and context relevance and offer a high level precision. Glaser and Strauss (1965) and Strauss (1987) agree; they call for the discovery of "grounded theory," theory derived from the context of a research problem, such as a business setting or fashion behavior. They argue that grounded theory should be used to increase the relevance of formal theory.

Naturalist versus Rationalist Paradigms

Some qualitative versus quantitative discussions begin at the paradigm level. Guba (1981) contrasts the naturalist and rationalist paradigms and the preferred methods and analyses for each. Guba contends that research questions should be matched to a research
paradigm by considering the differences in assumptions of the naturalist and rationalist paradigms. He describes the contrasting assumptions of the naturalist and rationalist paradigms: (a) emergent versus a priori theory, (b) changeable versus predetermined methods, and (c) interactive data collection and analysis versus proposition testing.

Before the 1930s, social scientists combined qualitative and quantitative techniques in their research. However, the 1930s and 1940s brought a dominance of the rationalist paradigm and its preference of quantitative methods for research (Hammersley & Atkinson, 1986). The rationalists model their use of the scientific method on the natural sciences, statistically analyzing data for generalizations and theory testing. The rationalist paradigm is based on deductive reasoning and depends upon objective recording and analysis. For example, imagine the research question, "Who buys cotton sweaters?" The rationalist researcher may begin by choosing a paradigm and theory and proposes hypotheses based on that theory. The researcher operationalizes the variables so they can be studied in settings in which extraneous variables are limited or controlled—subjects may be defined as female purchasers of cotton sweaters and sweaters may be defined by their fashionability, color, style, and fiber content (e.g., cotton or other fibers). Data analysis reveals the likelihood that particular respondent groups may buy cotton sweaters for hypothesized reasons.

On the other hand, naturalists may assume that there are multiple realities tied to contexts, and that generalizations, which cannot be made from the realities, are less important than unique or individual experiences. The naturalist paradigm depends on observation within certain contexts and induction from those experiences. Methodology and analyses are often qualitative. For example, to answer the same research question, "Who buys cotton sweaters?", the naturalist may have no predetermined theory for predicting the behavior. Instead, the naturalist sets up the research to define and explain the holistic nature of the question. No predeterminations or limitations are made about who is to be studied, whether the subjects actually bought or did not buy a sweater, or whether the sweater was cotton or linen or wool. The researcher goes into the research setting to discover the salient variables and the relationships among them. The naturalist researcher is as interested in unique relationships among variables as in normative trends and significant differences among variables. The naturalist is led by the data and can redirect inquiry at any time during the research. The results are necessarily unpredictable in form and direction but rich in expressive description and holistic in nature. The evolving patterns of concepts will point toward propositions for grounded theory.

Guba (1981) argues that there is a place for both paradigms and qualitative and quantitative methods in each paradigm. He urges social scientists to be less orthodox and to match the paradigm and then the method to study social and behavioral phenomena, rather than defaulting to the predominant natural science orientation.

Qualitative Methods and Analysis

The major difference between qualitative and quantitative methods is in the type of data recorded—words versus numbers. Both quantitative and qualitative studies can be suspect unless the research problem has been thoroughly studied, historically and in context; the data has been gathered systematically and with valid premises; and the interpretation follows logic as well as intuition in developing the main arguments. Therefore, although suggested for qualitative research, the following strategies might provide guidelines for some quantitative research studies as well.

Miles and Huberman (1984) outline numerous data collection, analysis, and conclusion/verification strategies to aid researchers with qualitative analysis. Viewing data collection and analysis as an interactive process, they present examples of data recording and organization methods to aid the researchers' continual movement from observation to emerging patterns and back. When collecting data, researchers must consider types of records, coding issues, how to include researcher insights and reflections, and the interactions among researchers to standardize records and clarify the research question.
Next, the data are simplified, sorted, coded and recoded, and summarized. The researcher begins to choose which information is important to the research question and how it fits with other information. If particular field notes seem interesting, the researcher can go back to the research setting and look and ask for more information. Continuing the process of prioritizing and organizing, the data are fitted into formats that allow conclusions to be drawn. For example, charts recording contextual variations, matrices ordering time and role effects, and cross-site comparison documents can display the data (Miles & Huberman, 1984).

Guba (1981) describes the use of verification methods during data collection and analysis to assure credible, relevant, dependable, and confirmable conclusions. Because qualitative research is interested in the context and uniqueness of each observation, records should be comprehensive and subjects and settings should include a range of types, rather than a representative sample. Audio recordings, extensive observation notes, and introspective journals recording observer perspective and shifts should be organized and filed. Data should be clustered to identify patterns and relationships. Prolonged observation and interaction allow researchers to record idiosyncratic and normative behaviors and behaviors across several contexts to confirm or disconfirm emerging propositions. Analysis should include obvious and subtle variables. For example, the salient variables to consider when purchasing cotton sweaters might go beyond product characteristics to store characteristics and the external social environment.

Triangulation of methods, such as interview and unobtrusive observation, multi-site observations, and inter-rater reliability, can build a logical chain of evidence from several sources playing different roles, and can direct attention away from spurious leads to dependable conclusions. A second, independent reader or a researcher from another site can follow the written documentation to evaluate how the data were collected and how the conclusions were drawn to build an audit trail (Guba, 1981). These audits can lead to alternative explanations or corroboration. Convincing research reports should include appropriate, clear documentation of the data collection and recording methods, the decision rules used during coding, the analysis steps, and the conclusions drawn and propositions derived from the data.

Studying the Social Aspects of Dress

Turning to the study of the social aspects of dress, the option of the naturalist paradigm and qualitative methods and analyses has clear support. The meaning of dress for the wearer and the observer may be different and it may be altered as the situation or context changes. Establishing generalizations about the effects of specific dress cues may be difficult and of limited value due to their dependence upon social and societal contexts (Damhorst, 1984-85) and the dynamic fashion-related nature of dress. In addition, dress is used for symbolic associations in a first-impression situation due to its visual character and because it may be the only information one has about a person. For all of these reasons, the assumptions of the naturalist paradigm (e.g., emergent theory, changeable methods, and interactive data collection and analysis) accommodate the study of the social aspects of dress.

The case for a qualitative research approach does not exclude the use of quantitative methods nor the rationalist paradigm. Indeed, our interdisciplinary approach to the study of dress makes triangulation an attractive approach. We can look at the economic, social, cultural, and psychological motivations of people purchasing or wearing or observing dress as the problem to be investigated. We can use a naturalist paradigm with qualitative and/or quantitative methods and analyses or we can use a rationalist paradigm with qualitative and/or quantitative methods and analyses. Triangulation can mix paradigms, methods, and/or analyses.

A Rationalist Approach

Using a simplified research question to illustrate, I will discuss some differences between qualitative and quantitative paradigm, method, and analysis strategies. Imagine again that a researcher is interested in the question,  "Who buys cotton sweaters?" The rationalist may begin by identifying the theory and recent
research on the subject in order to identify the salient variables. Assume that the researcher will use exchange theory and study the female population, which is established as the more likely purchasers of sweaters than the male population. The researcher is interested in what motivates women to buy a cotton sweater. According to exchange theory, there needs to be an economic, social, psychological, or other positive gain to a transaction for it to be completed.

Next, the researcher operationalizes these concepts. Price is an example of economic gain; fashionability is an example of social gain; and color is an example of psychological gain. At this point, the research question, "Who buys cotton sweaters?" might actually become, "Which women purchase cotton sweaters because of price, fashion, and color?"

The rationalist decides to which population the research will be generalized and determines the experimental setting accordingly. For example, using a local population of sweater-buyers, a stratified random sample of local stores selling sweaters could be drawn. The sweater sales could be monitored over a one-month period of time, requesting all or a randomly selected sample of purchasers of cotton sweaters to complete a questionnaire about their purchases. Information about the sweaters could be detailed at the time of purchase by the researcher to provide product characteristic information that might be related to the purchase.

The questionnaire would be developed to contrast the likelihood that price, fashionability, color characteristics (i.e., economic, social, or psychological gains) drive customer purchases. The questionnaire might consist of a Likert scale seeking the level of agreement with statements such as, "I bought the sweater for a party I'm attending soon" or "If this sweater were not this color, I wouldn't have bought it." Or the questionnaire might ask the customers to identify the most important reason they bought the sweater and up to five other reasons that were part of their decision-making process. In either case, the results could be analyzed using the type of gain established, other questionnaire data, and demographic characteristics as variables. The conclusions could be generalized to people buying sweaters in that local area during that particular month but the conclusions would be assumed to be working hypotheses for other populations and settings.

An experimental study would allow the researcher to generalize to a greater population by using systematic randomization methods and control groups. For example, the researcher could set up a laboratory experiment in which consumers have the choice of purchasing one of several sweaters. The sweaters could be varied on economic, social, and psychological characteristics as detailed above. The subjects would be asked to purchase one sweater with money they are given. They would be told they must purchase a sweater and they can keep the left-over money. The volunteer subjects would be systematically assigned to several different treatment groups or to all three groups: one in which the prices of the sweater are held constant and the fashionability and color are varied, one in which the fashionability of the sweaters are held constant and the prices and colors are varied, and one in which the colors of the sweater are held constant and the prices and fashionability are varied.

After the purchase, the subjects could be asked to complete a questionnaire about the reasons for their purchase much like the previously outlined point-of-purchase study outlined above. The analyses would infer the type of gain sought by the purchase of the sweaters. The results could be generalized to the population from which the volunteers were sought and are usually considered working hypotheses describing the general population.

A Naturalist Approach

The naturalist would approach the question of "Who buys cotton sweaters?" in a different way. The naturalist would choose a setting in which the subjects could be observed in the decision-making and purchase process and, perhaps, in which the researcher could actually experience the process along with the subjects.

For example, the researcher could become a salesperson in a sweater department in order to listen to customers as well as to try several
different selling techniques to evaluate their effectiveness. Observation records would be made by the researcher as soon after each encounter as possible. The records might take the form of written comments or a check sheet of possible motivations to buy the sweaters. Any check sheet would be developed from the initial observations and could be modified at any time during the project. Several observers might be assigned to collect data at various locations and times. Discussions among the observers during the research might modify interaction techniques and would certainly provide confirmation of any one observer's insights. In other words, the data collection and analysis would occur interactively. If the researchers felt the need to ask more questions of the customers, or to observe another store location, or to interview the customers in their homes, the naturalist researcher might pursue these alternative methods.

A second example of a naturalist approach to "Who buys cotton sweaters?" might evaluate the purchasers and nonpurchasers such as manufacturers, retail buyers and salespersons, and consumers. The researcher would be interested in the perspective of the purchasers as well as that of other people as to what motivated people to buy the sweater. The problem would be considered an interactive process with many players.

A "focus group" format would be another choice of setting. Its qualitative nature is based on its flexible unplanned agenda, spontaneous discussion, and serendipitous discoveries. Groups of people such as nonpurchasers and purchasers would be brought together to discuss the purchase of a sweater while the researcher acted as discussion leader. The researcher should be trained in the skills necessary to moderate the process as well as in the subject area being studied. He/she would start with a global topic such as "Clothing in America" and guide the discussion toward the research question, "Who buys cotton sweaters?" The various kinds of people in the focus groups should provide lively discussion, which also would dictate the discussion leader's involvement.

The discussions could be video- or audio-recorded or notes could be taken for later use by the group or the researcher. Here, too, data collection and analysis are interactive. The data lead the researcher to direct the discussion toward emerging patterns and conclusions. These patterns and conclusions also shape the analysis and reporting research steps. For example, purchasers and nonpurchasers may focus on the different roles that men and women play in the purchase of their own sweaters. Or the importance of cotton as a fashionable (or social) characteristic may be emphasized. Or the connection between quality and price in sweaters may be discussed. The discussions direct data organization and analysis toward gender roles, fashionability of textile fibers, or the quality/price relationship.

**Triangulation**

Using triangulation and mixing paradigms, methods, and analysis, a researcher can look at the same research question, "Who buys cotton sweaters?" in another way. The researcher could begin by deciding that he/she doesn't know who or what motivates people to buy cotton sweaters. Using a naturalist paradigm, a variety of settings in which cotton sweaters are worn and bought could be observed. The researcher would look for types of people who buy and wear cotton sweaters and for alternative sweater types for similar situations. The researcher would look for patterns as well as unique observations.

Analyzing the results during and following the observations, the researcher might switch to a rationalist paradigm, identifying salient variables and propositions or hypotheses about the relationships of those variables. The extensive observations should lead the researcher to operationalize the variables on substantive bases. For example, if cotton sweaters are bought as often by men and children as by women, the subjects should include men, women, and children. If cotton sweaters are bought in all types of stores, compete with acrylic and wool sweaters in popularity, and come in a variety of styles, then the variables ought to be defined by type of store, fiber content and sweater style.

The research settings emerge from the variables and hypotheses. Intensive interviews
may precede or follow a randomized selection and assignment design or a survey may precede a case study design. The research question would be addressed with a combination of a priori and emerging theory and methods and both interactive analysis and proposition testing. It would be triangulation in its broadest sense, maximizing relevance and precision.

Conclusions

Qualitative and quantitative research are compatible. Each approaches research with different basic assumptions, operationalizing strategies, methodologies, and analyses. Consequently, outcomes may not look the same but are complementary, rather than conflicting. There is a place for both qualitative and quantitative research in the study of the social aspects of dress.

Quantitative research has dominated the Clothing and Textiles Research Journal and others in the past fifty years, while qualitative research has been considered more time consuming, less definitive, and methodologically difficult to interpret. This paper argues that without some qualitative component in our research, we may miss the richness of contextual and idiosyncratic data in our study of clothing. We may see the trees but miss the forest. The objective of social science research is to understand human behavior a little better and the nature of qualitative research enriches this endeavor. Problems are conceptualized to analyze the definitive and expressive quality of an experience. Procedures are recommended that organize data collection and confirm analysis to promote acceptance of qualitative research. Triangulation with both qualitative and quantitative components is suggested as another option that is fairly easy to implement and report.

Professors and students unfamiliar with qualitative research may use this paper to learn about the differences, advantages, disadvantages, and combinations of qualitative and quantitative approaches to the social aspects of dress. The discussion comparing two approaches to the same simplified research question, "Who buys cotton sweaters?", could provide the basis for a discussion of qualitative research, including the characteristics that qualitative components bring to a quantitative study. The illustration could also serve as a model, helping researchers to think about qualitative issues as they are defining a research problem.

The qualitative research approach has come of age. The challenge is to use it when it will enhance our understanding of the social aspects of dress.

References


Social Perception: Methods for Measuring Our Perceptions of Others

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Introduction

Social perception deals with the cognitive processes used in our perceptions and interpretations of any social object or event. Because of its visible nature, clothing has long been recognized, though possibly not articulated, as a form of nonverbal communication. The impact of clothing on social perception processes as a factor in how people perceive others is generally accepted (see Davis, 1984, for a review of this research). Research in this area attempts to answer questions such as: What meanings do individuals give to the appearance of others? How does the appearance of an individual affect the impressions and judgments others make of the individuals?

Quantitative Data Collection Methods

The quantitative data collection methods which can be used in social perception research include questionnaire and scale items, Q sorts, and verbal descriptions acquired through the use of various thematic projective techniques. In general, quantitative data in social perception research provides the researcher with information regarding the content of the perceptions made by research subjects.

Questionnaire and Scale Items

We will begin our discussion with a brief overview of questionnaire and scale items, the most common type of data collection method used at the present time by social perception researchers investigating clothing variables. Questionnaires are "any kind of instrument that has items or questions to which individuals respond directly" (Compton & Hall, 1972, p. 240), and typically include items using a closed ended (fixed-alternative) question format and attitude scale items (Kerlinger, 1973, pp. 482-483, 495-496, 568). With regards to social perception, questionnaire and scale items are used to measure the subject's specific judgments and attitudes toward the stimulus person. The measurement of the dependent variable (in this case one's perception of a stimulus person) may be elicited from a single item or a series of rating scale items such as an adjective checklist, Likert-type items, semantic differential scale items, or forced-choice scale items (Touloumi & Compton, 1988, pp. 147-149). The questionnaire and scale items are usually judgments of traits or attitudes the researcher believes may be affected by the clothing variable (possibly based upon a literature review of similar studies or theoretical guidance).

There are general advantages and disadvantages to using questionnaire and scale
items that also apply to social perception research (Stone, 1978). Compared to other data collection methods, questionnaires are relatively inexpensive. The administration of questionnaires does not require extensive training, they can be administered to groups of people, and they are relatively easy to score into quantitative data. Of course, the main disadvantage of questionnaires in social perception research is that subjects must respond to items provided by the researcher. Thus the questions themselves and the type of response format actually structure the information elicited from subjects. Consequently, questionnaires may limit the type and amount of information that might be obtained as well as the accuracy of the information obtained from the research subjects. Thus questionnaires, although inexpensive and easy to administer, are not always the best way of assessing perceptions of dress cues.

Q-sorts

Q-sorts and the content analysis of data collected through projective techniques may provide the researcher with more accurate information about the meanings inferred from clothing cues and the effect of appearance on subjects’ perceptions of others. The Q-technique (Stephenson, 1953) involves the sorting and rank ordering of statements, pictures, or other objects into piles or groups according to some specified criterion. Applying this type of data collection method to social perception research, the subject may sort and rank pictures of clothed individuals into piles according to a particular conceptual meaning such as attractiveness (attractive-unattractive) or intelligence (intelligent-unintelligent). The resulting distribution tells the researcher the relative degree to which the subject attributes specific clothing to a particular concept (e.g., attractiveness or intelligence). The piles or subsets of pictures represent a rank order and are assigned numerals for statistical purposes. This type of data collection technique is useful in exploratory research or when relations among variables or within individuals or groups of individuals is of interest (Kerlinger, 1973, p. 582). For example, in a preliminary study to select representative examples of physical attractiveness, Buckley (1983) had judges sort 69 photographs into seven piles on a continuum of physical attractiveness. In order to study similarity in attitudes among individuals, DeLong and Minshall (1988) had subjects rank 15 photographs of clothed individuals as to the degree to which they liked and disliked them. However, the Q-technique has been criticized on statistical grounds and because of its forced-choice format.

Projective Techniques

Projective data collection methods use an unstructured stimulus or situation whereby the respondent "projects" personality, attitudes, opinions and self-concept into the situation in order to give it some structure (Adams & Schvanevelt, 1985). Although projective techniques are primarily used in personality assessment and psychoanalytic treatment, these techniques may also provide the researcher of social perception with a viable tool for data collection. For example, projective techniques can be used to create verbal or pictorial descriptions of a clothed individual.

Projective techniques of data collection have been categorized by the type of response required of the subject. The first category is association. The subject is presented a stimulus and responds by indicating the first word, image or thought that is evoked by the stimulus. For example, a subject may be shown pictures of stimulus persons clothed in different ways and asked to respond with the first word or image that comes to mind. Davis (1990) used this method to investigate social salience (what is initially noticed) of a person.

In the second category, construction, the subject is asked to construct a story or a picture from some stimulus concept. For example, a subject may be asked to describe what is going on in a series of pictures that involve individuals clothed in specific manners. Examples of this type of data collection method in social perception research can be found in Damhorst (1984-85) and Rosencranz (1962). Another construction technique would be to provide the subject with a wide variety of pictures of individuals and have the subject use these to create a larger picture or scenario corresponding to a personal attribute or concept; e.g., status symbolism or gender identity.
A third projective technique is completion. In this type of technique the subject is provided with an incomplete sentence, paragraph, story or picture and is asked to finish it. For example, a subject may be given descriptions of individuals including information about their appearances and be required to complete stories about the individuals. A fourth projective technique is termed expressive, whereby a subject is asked to role-play, act out, draw or paint a specific concept or situation. In applying this to social perception, a subject may be asked to draw a person who portrays a personal attribute or situation.

A fifth projective technique is a choice or sorting technique. This technique requires a subject to choose or sort stimuli according to categories of some criterion. Unlike Q-sorts where objects or pictures are rank ordered, sorted stimuli in the projective technique are content analyzed according to categories or a cluster analysis statistical procedure is performed on them. For example, Buckley (1985) had 100 subjects categorize 106 drawings of clothed figures according to the subjects' perceived similarity of the drawings. Subjects could sort the drawings into as many or as few piles as they wanted. DeLong and Minshall (1968) had subjects categorize photographs of clothed figures into categories and then asked the subjects to describe their rationale for sorting the photographs in the manner they did. In both examples, a similarity matrix was developed as well as a cluster analysis performed to determine categorization of the pictures.

Projective techniques provide the researcher of social perception with verbal descriptions, sorted pictures, or visual renditions of clothed individuals which can be content analyzed into quantitative data. There are several advantages to the researcher in obtaining this type of data. The primary advantages are the amount, richness, and accuracy of information obtained. Subjects typically are not aware of the purpose of the exercise. They do not perceive right or wrong answers to the exercise and are encouraged to respond with a wide range of ideas. In addition, projective techniques often tap attitudes and opinions that may not have been revealed in a questionnaire, because the attitudes or opinions were not included in the questionnaire, because the subject was unable to assess his/her attitudes and opinions or because the subject's assessments were inaccurate. For example, art therapy is a clinical technique used by therapists who may have clients "draw themselves" in order to tap into inaccessible or uncomfortable attitudes or feelings about themselves (Gotshall-Sollars & Lennon, 1991). The primary disadvantage of projective techniques for the researcher is in the complexity of the data obtained and the corresponding skill necessary to code and interpret the data. In addition, traditional validity of the measures is very difficult to establish. However, through triangulation, "the use of two or more methods of data collection" (Cohen & Manion, 1980, p. 254), convergent validity may be established (Belk, Wallendorf, & Sherry, 1989).

Content Analysis of Descriptions

Content analysis is the "process of analyzing, classifying and quantifying data presented in written form" (Galfo, 1983, p. 94). To obtain quantitative data, verbal or pictorial descriptions or sorted information are content analyzed by classifying the content of the description or the sorted information into categories that are then given numerical values. Although often difficult and time consuming to accomplish, content analysis is an effective way of measuring attitudes, opinions or ideas obtained through written (or pictorial) statements.

Galfo (1983) outlines several steps in the content analysis procedure. The first step is the collection of written statements. In terms of social perception research, this can be accomplished by using the written statements obtained by projective techniques or by verbalizing the content of the sorted cards or the content of pictures completed or drawn by using projective techniques. The second step is the selection of the unit of content (also called unit of analysis) to be measured. This may be the content of a word, a statement or a paragraph, depending upon the amount and type of written information obtained. The third step is to develop a classification system in order to categorize the units of content measured. Within this classification system units of content with meaningful similarities should be grouped
together, all content should be included in one of the selected categories (i.e., categories should be exhaustive), categories should be mutually exclusive, the number of categories should not be too large to make data management difficult or too small for identification of meaningful differences, and categories should be related by some unifying principle. For example, a typical taxonomy used in social perception research includes the following categories of person information: (a) character traits and general habits, (b) behaviors and affiliative memberships, (c) attitudes, feelings and beliefs, (d) demographic information, and (e) physical and biological characteristics (Park, 1986).

The fourth step in the procedure of content analysis is the assignment of units of content to categories. This is typically achieved by two or more coders who have achieved some level of agreement on the classification system (Stempel, 1981). Reliability of the coding of the data is based upon the percentage of agreement among coders in assigning data to the categories. Reliability can be increased by developing precise definitions of categories, by having the coders practice the coding procedures until they achieve a satisfactory level of agreement, and by spot checking coding of the data.

The fifth step in content analysis is quantification. The content in each category is assigned a weight for purposes of comparing categories. Often the weights are the percentage of the total content or the number of content items in each category (see Lennon & Davis, 1989c; and Park, 1986 as examples of content analysis in social perception research).

**Qualitative Data Collection Methods**

Research using qualitative data collection methods investigate individuals’ interpretations of the world. Although qualitative data collection methods are seldom used in social perception research, they may provide insightful information regarding meanings assigned to clothing cues. A qualitative data collection method which has been used successfully to study people's perceptions of consumer products and what they mean to people is the long interview (McCracken, 1988b). The long interview is a highly intense interview process that is concerned with cultural categories and shared meanings (McCracken, 1988b, p. 7). The long interview may be subdivided into four steps. Step 1 is the review of analytic categories and begins with an exhaustive literature review. This provides important conceptual categories and aids in the construction of interview questions. Step 2 is the review of cultural categories. The researcher examines her/his own experience with respect to the phenomenon of interest. Step 3 is the discovery of cultural categories. This is achieved by allowing respondents to tell their own stories in their own terms. The researcher must be careful to phrase questions in a nondirective manner. Step 4 is the discovery of analytic categories. To aid in the final step McCracken (1988b) suggests that interviews be taped recorded (p. 41).

Although the long interview may last from 2 to 6 hours, it does not commit the researcher to a long intimate involvement into the respondent's life as an ethnographic interview might. The long interview is also less obstructive than the ethnographic interview. "The method can take us into the mental world of the individual, to glimpse the categories and logic by which he or she sees the world." (McCracken, 1988b, p. 9). This method might be used to advantage to study the meaning of special clothing linked to associative organizations. These groups, such as sororities, athletic teams, and schools, "meet social needs and provide mutual member identification and interaction" (Kaiser, 1990, p. 377). Associational dress, such as senior cords (Schlick & Rowold, 1991) or athletic jackets, may hold special meaning for the wearer since these garments are often embellished with symbols having personal relevance. This type of clothing might be studied in terms of its effect on the wearer and perceiver. The long interview might also be used when studying perceptions of elusive constructs such as clothing comfort and apparel product quality.

Another possible approach for the study of social perception is that of ethogenic research (Harre, 1977). In a way, this approach combines the ethnographic interview with participant observation to focus "upon an actor's intentions, his beliefs about what sorts of behavior will enable him to reach his goals, and his awareness of the rules that govern those
behaviors" (Cohen & Manion, 1980, p. 228). The ethogenic approach is concerned with interpreting not only the observed behavior of individuals, but also the verbal explanations individuals make in accounting for their actions. Thus this approach may include interviews as well as participant observation.

Ethogenic research is particularly effective when studying phenomena for which observation alone may not lead to a clear understanding, or for studying perceptions of members of cultural groups or subgroups, particularly when the researcher has no frame of reference for the observations. For example, a Hindu might observe a Catholic priest perform a religious ritual in a Catholic church without being able to understand its significance. To understand the meaning of the ritual it might be advantageous to get the priest's and the congregation members' accounts of the ritual including the meaning of the garments worn for the ritual, the purpose of the garments, and the significance of the garments' colors and symbolism.

The ethogenic approach has been used in educational research to investigate pupils' views of their teachers, and could be expanded to investigate the perceptions of other types of groups. For example, the approach could be used to better understand workers' views of a supervisor, whereby the researcher could observe work place behavior as well as get the workers' and supervisor's accounts of the behavior.

In this method, behavior is observed and accounts are elicited from informants and analyzed according to general patterns and according to similarities and differences in accounts. In social perception research observations and accounts of social episodes and interactions may provide information on the factors that may have affected individuals' perceptions of the interactions, including clothing.

The application of the ethogenic approach to the study of social perception can be examined in terms of four criteria for qualitative data: naturalistic observation, contextualization, maximized comparisons, and sensitized concepts (Christians & Carey, 1981). Naturalistic observation requires the researcher to observe and describe events as they occur naturally. Often this requires the researcher to become part of the group being observed, although the researcher may also engage in non-participant observation. For example, if a researcher was investigating the meaning assigned to clothing cues by a group of teenage skateboarders, the researcher would need to understand the symbolic patterns and communication within the group in order to understand members' clothing symbolism. Contextualization requires the researcher to investigate the phenomenon within the naturally occurring environment and to account for the context when interpreting observations. The context dependency of clothing cues is well-documented (Davis, 1985; Kaiser, 1985, p. 213; Damhorst, 1984-85; Rees, Williams, & Giles, 1974). Thus when investigating perceptions of clothing cues, the context or situation must be taken into consideration. Maximized comparisons refers to the choosing of comparison groups in order to clarify and strengthen the interpretations of observed behavior. For example, insight to the clothing symbolism of a social group such as a religious order may be achieved by comparing the perceptions of clothing symbols by members of this group with perceptions of clothing symbols by members of other religious orders.

Another dimension of qualitative research is establishing sensitized concepts that reflect the inner character of the phenomena under investigation. These expressions are developed to paint an insightful picture, one which conveys the meaning of a phenomenon. Sensitized concepts arise from careful observation and interpretation and serve as the building blocks for qualitative research. Some well known sensitized concepts include Rousseau's "noble savage", Kuhn's "paradigm", and Veblen's "conspicuous consumption" (Christians & Carey, 1981, p. 360). The qualitative researcher must be scrupulously careful not to impose her/his cultural assumptions on the data and thus provide a culture bound interpretation. McCracken describes a flash of insight he experienced when interviewing a 75 year-old woman about her perceptions of the contents of her home (McCracken, 1988b, p. 20). As she described what her living room furniture meant to her it suddenly became clear that her furnishings
were not simply consumer goods, but rather memorials. She was taking care of a museum, not a home (McCracken, 1988a; 1988b). This vignette may well describe how qualitative researchers develop sensitized concepts.

For the social perception researcher the advantage of gathering qualitative data through the ethogenic approach is that it provides an holistic view of the phenomena under study. It is possible for the researcher to produce an accurate description of the phenomenon and an explanation of its essential characteristics. The main disadvantage of this method is the amount of time, expense and skill needed to collect and properly interpret the data. Data interpretation is difficult and requires time and skill by the researcher. Because individuals typically underestimate the impact of clothing cues in social interaction, when investigating this phenomenon, the researcher must be a skilled observer and interviewer.

Conclusions

Social perception research focuses on how individuals perceive and interpret perceptual cues such as clothing. The study of the effect of clothing on social perception processes can be achieved by a number of research methods. We have briefly reviewed several appropriate data collection methods in social perception research. One may ask which is the "best" research method for investigating the effect of clothing in social perception. Unfortunately there is no one correct answer to this question, as it greatly depends upon the specific objectives of any particular research study. For example, if researchers were investigating the differences in the perceptions of professional dress between women managers in New York and women managers in Los Angeles, a mail questionnaire would most likely be the appropriate data collection method. On the other hand, if researchers were investigating first impressions made by school counselors of high school students then a projective technique such as association or construction may be most appropriate. Using an ethogenic approach may be most appropriate if researchers were investigating the relationship between social perception and social participation within a social peer group. It should be noted that no one data collection method is more "scientific" or "scholarly" than another. Each method has inherent strengths and weaknesses, and advantages and disadvantages for the researcher. These must be taken into consideration when planning a study on social perception.

References


158


Endnotes

1 The term "clothing" will refer to "any tangible or material object connected to the human body" (Kaiser, 1990, p. 5). In a few instances, examples will describe appearance or dress manipulations.
Analysis of Symbols of Dress in Characterization

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The purpose of this paper is to suggest a research linkage between social cognition and dress and a type of literary analysis known as characterization. Research in social cognition and dress assumes that symbols of dress are a form of nonverbal communication. Because symbols of dress are to a certain extent under the control of the individual using them, we tend to attribute particular characteristics to that individual, such as group membership, personality traits, or social status. See Davis (1984) for a review. Because symbols of dress are visible, the meanings they convey may be shared by others within a society.

Characterization analysis, the analysis of characters in some form of literature, is common in the humanities. This type of analysis often depends on dress cues associated with characters, but is not built on a foundation of empirical research. In textiles and clothing it is common for scholars to study social cognitive phenomena as a function of dress cues. Furthermore, this work is based on empirical research. A linkage between literary analysis and social cognition and dress would serve to broaden the scope of research in our field. As in literary analyses we suggest using information about a character's appearance to analyze the character's personality. However, we also suggest using empirically established research results to develop or "build" the impression of the character's personality. Research based on such a linkage could make use of the same information and theoretical basis as research on social cognition and dress. However, as we propose it, this research linkage will also provide a means of analyzing culture through the media it produces. Issues to be discussed in this paper include (a) a four step procedure for research which can be used to analyze how symbols of dress are used in characterization and (b) suggestions for incorporation of this type of analysis into the classroom. Examples of such analyses will also be provided.

In social cognition and dress research we study the effects of clothing and appearance on how information is obtained, processed, stored, and retrieved. An attempt may be made to isolate specific cues and measure their influence on judgments, impressions, and behavior. Social perception is a sub-discipline of social cognition. When we meet people or read about them in our daily lives we are engaging in social perception; that is, perceiving social information. Social perception is a term which includes perceptual processes as they relate to people or information about people as the objects of our perceptions. We do not always form impressions of people when we first encounter them or read about them, but if we do the process is termed impression formation. Implicit personality theory is one framework which might be used to explain the process of impression formation. The terms social cognition, social perception, impression formation, and implicit personality theory will be used to explain why scholars in textiles and clothing might want to consider a linkage of literary analysis and social cognition and dress research.

Characterization, the kind of people created by authors, may be achieved and conveyed to an audience by various means including descriptions of the characters' manner of dress, facial features, weight, height, stature, and carriage (Corbett, 1977, p. 192). Researchers in the humanities have analyzed how authors have used descriptions of characters' clothing, adornment, and general physical appearance to portray their characters in analyses of written works such as short stories and novels (Collins, 1978; Hilfer, 1982; Joyner, 1983; Potvin, 1987). Clothing and physical appearance have also been used effectively to characterize people in films and television (Sawyer, 1987).
Because literary scholars may read many or most of the works of an author, they can identify recurring themes in the works. These themes may be used by such scholars as a guide to decode the clothing and physical appearance of the characters. For example, it has been said (Lynn, 1964) that Mark Twain was fascinated with the theme of twindom all of his writing life (see Afterword to The Prince and the Pauper, p. 213). Furthermore, Twain’s works were often satirical social commentaries. Thus someone familiar with Twain’s writing might understand why he would select as “twins” a boy from the poorest district of London together with Edward Tudor, a boy whose birth all England celebrated, in order to effectively comment on the English social system. In Pudd’nhead Wilson Twain’s twins are a wealthy white landowner and his biracial slave, who were switched in the cradle and who have grown up together. A scholar knowledgeable regarding Twain’s twin theme and his tendency to write satirical commentary might be especially attuned to his word pictures of the twins’ clothing, adornment, and aspects of grooming since the plots revolve around the fact that the twins are alike in physical appearance.

Thus a literary scholar might interpret such cues in light of known themes of the author’s. For example, Joyner (1983) writes about class and clothes in Mary Lee Settle’s Beulah Quintet. According to Joyner, Settle uses dress and home decoration to reinforce one of her major themes, class consciousness. Similarly, Wilhelm (1975) discusses the social roles enacted by Updike’s character Rabbit in Rabbit, Run. “Throughout the novel Updike uses references to clothing as a means of defining the social roles forced upon Rabbit and his reactions to them” (Wilhelm, 1975, p. 87). Thus literary scholars interpret clothing and appearance cues within a context of what they already know about an author and the author’s history, previous works, and social concerns (Joyner, 1983; Lynn, 1964; Wilhelm, 1975). Thus they are appropriately using characteristics specific to the author (a) to tap into the author’s intent in portraying the characters and (b) to help interpret that author’s characters.

One may reflect upon characters as conveyed by authors and attempt to analyze the manner in which the characterization occurred. Through characterization an author can practice impression management; that is, manage or control the impression of an individual’s personality that is conveyed to an audience. This is achieved by manipulating (a) object variables, especially visual characteristics of the actor and the salience of those characteristics, and (b) situational variables, especially the set or context of the play, novel, or television show within which the clothing and appearance of the actor is perceived. Thus one might study the types of characters portrayed by an author and the manner in which these characters are portrayed.

While literary scholars use dress symbols to analyze characters, we have found no instance in which they relied upon empirical research findings to support their analyses. We propose that research results from social cognition and dress can be directly applied to characterization. (See also Harris & Owens, 1990; Lupton, 1986; Petry, 1986; Poretsky, 1986; Sommers, 1981 for discussions of or descriptions of authors’ use of symbols of dress in literature.)

Those of us who investigate social cognition typically manipulate dress cues and measure personality characteristics as conveyed by those cues. However, an author or playwright might first decide on a personality to convey and then develop an appearance (or description of an appearance) thought to be congruent with that personality. It is our contention that we might first begin with dress cues, apply research results to develop a composite impression based on those cues, and then finally attempt to compare that composite impression to some standard. We consider this process to be an application of social cognition and dress research to characterization analysis.

**Impressions from Written Descriptions**

In portraying a character we will assume that an author uses symbols of dress to lead the audience to form certain impressions of the character. To better understand the use of dress symbolism in characterization, it is important to understand the process individuals use in forming impressions from written descriptions. Much social psychology research measuring impression formation and attributions has used
written descriptions of people. Descriptions have consisted of traits (Cantor & Mischel, 1977; Carlston, 1980; Izett & Fishman, 1976), behaviors (Hamilton, Katz, & Leirer, 1980), or physical characteristics such as height (Brink, 1988), weight (Harris, Harris, & Bochner, 1982; Larkin & Pines, 1979), and attractiveness (Sprecher, 1989) information. Also sometimes descriptions of behaviors include appearance information; i.e., Jane is "extremely attractive and wears appealing clothes that show off her figure" (Friend & Vinson, 1974, p. 126).

Although research shows that it is possible for people to form impressions based on written descriptions, the process of impression formation may or may not be automatic (Hamilton, Katz, & Leirer, 1980). It may be that people have to be motivated to form impressions, just like they may have to be motivated to form attributions (Chaiken, 1980; Taylor, 1975). Research indicates that motivation to form impressions affects memory for the impression information. For example, if people are told to read a description and form an impression they will remember the information better than people who are told simply to read a description and try to remember the description (Hamilton, Katz, & Leirer, 1980). This is similar to research on Imaging which shows that if told to form a mental image, people remember information better than if they are simply told to remember the information (Bower, 1970). Although we do not know the exact mental process that occurs, it probably involves the generation of related information (Auble, Franks, & Soraci, 1979; Jacoby, 1978) and the strengthening of memory networks because it improves memory (Anderson, 1974).

We have assumed that authors use symbols of dress to convey their characters. Furthermore, it is possible that this dress information may be used by the audience to form impressions of the characters, although the process may not be automatic. From a theoretical perspective implicit personality theory (Schneider, 1973) provides a framework for how composite impressions are formed. The manner in which discrepant information is handled in the formation of impressions can also be dealt with by implicit personality theory. In addition, inconsistencies in dress cues, in dress cues and context, or between dress cues and social roles may be interpreted using attribution theory (Bem, 1967, 1972; Heider, 1944, 1958; Jones & Davis, 1965; Kelley, 1967, 1973).

The Characterization Research Process

The characterization research process consists of four steps: (a) locate appearance information and isolate symbols of dress, (b) locate related research, (c) form composite impression, and (d) compare composite impression to some standard. Although literary scholars might use a different approach, we begin with a character's portrayal and work backwards to locate specific symbols of dress which might have been selected by the author to convey the character and the character's personality. To illustrate the process we will draw from The Prince and the Pauper (1880/1882) by Mark Twain. This book was selected because of the twin theme prominent in it and because it was assumed that if two individuals looked alike the author would likely use clothing and appearance references to distinguish between them.

Example 1: King Henry VIII

Locate Description and Symbols of Dress. In The Prince and the Pauper Tom Canty, the pauper boy, exchanges places with Edward Tudor, Prince of Wales. Soon after he finds himself face to face with

a very large and very fat man with a wide, pulpy face and a stern expression. His large head was very gray; and his whiskers, which he wore only around his face, like a frame, were gray also. His clothing was of rich stuff, but old and slightly frayed in places. One of his swollen legs had a pillow under it and was wrapped in bandages. (p. 33)

Based upon the setting of the story and what an individual knows about English history, it is probably immediately apparent that the previously described individual is King Henry VIII. However, even without this information and without knowing anything about Henry VIII, we could deduce much about him based on an application of research findings from dress and human behavior to his description.
Related Research. Overweight people have been judged as less likable, less intellectual (Lennon & Miller, 1984), less active, less athletic, and less attractive (Harris, Harris, & Bochner, 1982) than non-overweight people. Other research indicates that endomorphic individuals (characterized as soft, round, and fat) are more good-natured and agreeable than individuals with other body types (Wells & Siegel, 1961), which seems contrary to the less likable image. However, the fact that the character is described as having a stern expression may counteract the agreeable image and support the less likable image.

The gray hair and whiskers are cues to aging. Increasing age has been shown to be negatively related to judged physical attractiveness (Mathes, Brennan, Haugen, & Rice, 1985), to estimates of performance capacity and potential for development (Rosen & Jerdee, 1976), and to memory loss (Workman & Johnson, 1989). The whiskers which are "only around his face, like a frame" (Twain, 1980/1882, p. 33) may be cues to high status in much the same way that the mane of a male lion or the cheek plates of a male orangutan are cues to high status. Beards have also been associated with dominance, courage, masculinity, and maturity (Pellegrini, 1973); however, this should be interpreted with care since the meaning of beardedness has been shown to change somewhat. His clothing was described as being of "rich stuff," which Ryan (1966, p. 35) implies indicates the wealthy extreme of the socio-economic scale and which has also been associated with social power (Hoffman, 1984). His clothing is also described as old and slightly frayed. Although Form and Stone (1957) found shabby clothing to be indicative of low economic status, in this instance the frayed clothing on a high status older person might seem incongruous to the perceiver. Perhaps an impression of a slow, possibly, mentally deteriorating individual might be evoked. This is an example of how the meaning of clothing can vary as a function of context. Finally, in this description we are told that his legs are swollen and one is propped on a pillow. There has been much research on stigma due to physical disabilities. In this case, it would seem that the cues to physical disability together with the cues to aging simply imply that the character is weak and infirm.

Composite Impression. Based on the physical appearance cues together with situational cues and known research findings from impression formation, we might form the following impression of the character. He is an old high status dominant individual who is physically and mentally deteriorating. He may not be as likable, attractive, or as intellectual as he once was. His performance capacity, athletic ability, and memory have probably declined. He is probably a wealthy individual who is much less active than he once was.

Compare Composite Impression to a Standard. In fact, from history we know that Henry VIII was a mentally agile individual in his youth and was given the title "Defender of the Faith" by the Pope for his defense of the Church in a pamphlet which refuted criticisms from reformers. He is also well known for his physical prowess as a youth. During the course of The Prince and the Pauper the king dies. Thus the impression that the king is aging and infirm may have been intended by Twain. Certainly Henry VIII was wealthy, his father was known as a "tight-fisted" king who was known for his fiscally responsible policies. The impression of not being likable may have been accurate in the king's later life. This is supported by, among other things, his reputation for ridding himself of wives in an expedient manner and the fact that he caused his younger sister Mary to wed the elderly and infirm king of France against her wishes, again for expediency.

This example illustrates how descriptions of a character can be interpreted in terms of research findings in dress and human behavior. Research results help us to predict the impression conveyed by the author. In this case since the individual actually lived, the impression conveyed by the author can be compared to the impression that history provides. It is certainly true that the meaning of specific cues change over time. Furthermore, the historical significance of some cues may be unknown or may be disputed by different sources. However, it is possible that certain global appearance manipulations have a more lasting meaning; e.g., attractiveness, sloppiness, and cleanliness. The former description of the king is somewhat
general in the sense that it mentions no specific clothing item which for us today might not have the same significance.

**Empirical Evidence.** In order to address the issue of whether or not people actually form these types of impressions after reading descriptions, we collected some baseline data. One hundred twenty-seven lower division college students were given the following directions:

"Please read the following description and write a few sentences describing the personality of the person. It may be difficult for you to be totally accurate, but please use your best guess to be as descriptive as possible. You may comment on the person's family, demographic characteristics, and affiliations."

These subjects then read the description of Henry VIII and provided written responses based on their directions. Results of a content analysis of subjects' responses revealed that 39% of the subjects characterized the king as rich, wealthy, or from a family with money. He was seen as old by 39% of the subjects and as sick, injured, or wounded by 25% of the subjects. Twenty percent said he was unconcerned with his looks or did not take care of his appearance, while 15% said he was of high status, had authority, or was a nobleman or king. He was described as lazy by 7% of the subjects, as wise by 6% of the subjects, and as jolly by 3% of the subjects. Three percent said he had once been active, but was no longer, 2% said he had been an attractive youth, and 2% said he was well known. Twelve percent of the subjects provided responses which were incongruent with the composite impression. Thus, for the most part, subjects' responses were very similar to what would be predicted from research findings. It should be noted that individual differences did exist in the responses. These differences were very likely a function of different interpretations of Twain's written description of the king. In empirical research using human subjects, individual differences contribute to between subject variability which is common and often high.

**Example 2: Miles Hendon**

**Locate Description and Symbols of Dress.** A second application of the proposed research process will also be drawn from *The Prince and the Pauper*. After the little prince in the pauper boy's rags is thrown out of the castle, he is rescued from a taunting crowd by Miles Hendon. Miles Hendon becomes the protector of the prince. Twain (1880/1982) describes Hendon in the following way.

He was tall, trim-built, muscular. His doublet and trunks were of rich material, but faded and threadbare, and their gold-lace adornments were sadly tarnished; his ruff was rumpled and damaged; the plume in his slouched hat was broken and had a bedraggled and disreputable look; at his side he wore a long rapier in a rusty iron sheath . . . (p. 65)

**Related Research.** Tallness is associated with status (Wilson, 1968). Muscular individuals have been rated as stronger, more masculine, better-looking, younger, taller, more mature, more adventurous, and more self-reliant than people with other types of body build (Wells & Siegel, 1961; Strongman & Hart, 1968). Tall well-built men have been associated with leadership characteristics (Bono, 1963; Gacsaly & Borges, 1979). The fact that his clothing was made from rich materials indicates a high socio-economic position (Ryan, 1966, p. 35) and social power (Hoffman, 1984). The fact that he carried a weapon may indicate a position of some authority or status. Metal articles as components of appearance have been associated with dominance (Hoffman, 1984).

Much of Hendon's description, however, is at odds with what would be expected of someone of wealth and high status. His garments are faded and threadbare, his gold lace is tarnished, his ruff is damaged and rumpled, his plume is broken, bedraggled, and looks disreputable, and his sword reposes in a rusty sheath. In a word, his appearance is untidy. Research shows that experimenters who are dressed in an untidy manner are helped and agreed with less than experimenters who are dressed in a tidy manner (Harris & Baudin, 1973; Judd, Bull, & Gahagan, 1975). Old ill-fitting clothing has been associated with social weakness (Hoffman, 1984).
Researchers have also used an individual dressed in a bedraggled manner to convey the condition of someone with no authority (Bushman, 1984).

**Composite Impression.** In this instance Twain is using situational and object variables to manage the impression conveyed; one of a strong, attractive, mature, adventurous, self-reliant individual. The person may have been wealthy at one point, but appears, due to his untidy appearance, to have come down in the world and may have lost his social position. He may have been a high status person of some authority, but people are likely to act in an unhelpful manner toward him.

**Compare Composite Impression to a Standard.** Later in the story we learn that Hendon was cheated out of his lands and his prospective bride by an unscrupulous brother while Hendon was on the continent fighting in the wars. Thus the impression conveyed by Twain's description is congruent with what we learn later about the character.

**Empirical Evidence.** A group of 130 college students (not the same group who had responded to the other description) read the description of Miles Hendon and wrote about his personality using an open-ended format. These descriptions were also content analyzed. Findings were that 34% said he was once wealthy, 21% said he had once been a high status individual, aristocratic, or of the nobility, 17% described him as strong or athletic, 11% described him as an authority figure, and 5% characterized him as attractive or handsome. However, 31% did not use any of the above descriptors in describing Miles Hendon. The percentage of responses incongruent with the composite impression may have been so high because terms such as ruff, doublet, trunks, and rapier were used which some students probably did not recognize. Indeed several wrote that they did not understand some of the terms. Furthermore, the previous composite impression was based on research which used closed-ended scales. Since research shows that results are often a function of the type of dependent measure used (Lennon & Davis, 1989), it is possible that if we had provided closed-ended scales we might have found responses to be much more congruent with the composite impression.

**Use of the Process for Teaching Historic Costume**

As is apparent from the last example, it is certainly possible that the written descriptions of characters may contain items of dress which are unfamiliar to research subjects. However, learning about these items could be part of a course in historic costume or costume and culture. Thus a modified version of the process we have proposed has an application to pedagogy. The modification would consist of replacing Step 4, Compare Composite Impression to a Standard, with Apply to the Classroom.

**Locate Description and Symbols of Dress.** In yet another scene from *The Prince and the Pauper* Tom Canty, the pauper boy, is walking past the gateway to Westminster Castle. As "poor little Tom, in his rags" (Twain, 1880/1882, p. 22) approached the guards, he noticed someone inside.

Within was a comely boy, tanned and brown with sturdy outdoor sports and exercises, whose clothing was all of lovely silks and satins, shining with jewels – at his hip a little jeweled sword and dagger, dainty buskins on his feet, with red heels, and on his head a jaunty crimson cap with drooping plumes fastened with a great sparkling gem. (p. 22)

**Related Research.** In this description Twain paints a word picture of an attractive, healthy boy who is tanned and brown, not from being compelled to live out of doors, but from sporting activities. Thus we might infer that the tan came from leisure activities and that the described child is likely to be well-provided for since he has leisure time (Lurie, 1981). As compared to unattractive people, attractive (comely) individuals have been judged as being brighter (Clifford & Walster, 1973), as being more honest and more pleasant (Dion, 1972), and as generally conveying more positive impressions (Miller, 1970). Silks, satins, and jewels all demonstrate wealth (Ryan, 1966, p. 17 & 35). Furthermore, expensive rare materials have been associated with social power (Hoffman, 1984).
and with status (Lurie, 1981, pp. 126-128). Red heels have been considered a high status emblem in the past.

**Composite Impression.** Thus the impression conveyed by Twain's description is one of an attractive high status child of some wealth who is honest, pleasant, bright, athletic, and healthy. Someone more attuned to the historic significance of various aspects of clothing could likely comment on the meaning of the jaunty crimson cap, the drooping plume, and the dainty buskins.

**Apply to the Classroom.** To incorporate this type of analysis into the classroom one might give a costume history class a description, such as the previous description of the prince, containing many specific dress cues of historic significance to analyze. A costume history discussion might center around how the meanings of specific dress cues change over time and how what the author may have intended to convey may not be what is conveyed today.

**Behavioral Aspects of Dress**

This same type of analysis could be presented as a learning experience in a dress and human behavior course. As a final example we will draw from another experience of the prince in *The Prince and the Pauper* (Twain, 1980/1882).

**Locate Description and Symbols of Dress.** The context is that the prince has been captured by the pauper's ruffian father and has fallen asleep in a barn. As he awakens he is startled to see a large group of people.

There were huge, stalwart men, brown with exposure, long-haired, and clothed in fantastic rags; there were middle-sized youths of truculent countenance, and similarly clad; there were blind mendicants with patched or bandaged eyes, crippled ones with wooden legs and crutches; . . . ; some of the females were hardly grown girls, some were at prime, some were old and wrinkled hags; and all were loud, brazen, foul-mouthed; and all soiled and slatternly. . . (p. 109)

**Related Research and Composite Impression.** To begin with the men are described as stalwart; i.e., tall and strong. Tallness has been associated with power (Knapp, 1978, p. 167) and physical attractiveness in men (Kaiser, 1985, p. 73). Tallness together with strength has been associated with leadership characteristics (Gacsaly & Borges, 1979). Unlike the prince who was tanned due to his leisure sporting activities, these men were tanned because they had to live outside and were exposed to the elements. The fact that the men were long-haired is hard to interpret since the appropriateness of hair length is not stable. The men's clothing indicates the lower end of the socio-economic scale (Ryan, 1966, p. 35). Thus the impression conveyed by the men is one of a group of powerful strong, possibly attractive men, who have little or no income and must live out-of-doors. The men are probably the leaders of the gang. The youth are described as of truculent countenance; i.e., fierce, wild, savage. The youth are not as large as the men, but they are also clothed in rags indicating the low extreme of the socio-economic scale. The impression conveyed by the youth is one of a gang of poor wild boys.

The beggars are blind with patched and bandaged eyes or crippled with crutches and wooden legs. According to Twain (p. 111) beggars were severely punished if apprehended, thus in order to take up begging a person would likely have no other means of existence. The cues to stigma are clear in this example. Research has shown that stigma evokes negative attitudes toward the stigmatized person (Goffman, 1963). For example, people with disabilities are seen as outsiders, different, or offenders (Barker, 1948). Disabilities are viewed as punishment for sins (Livneh, 1982) and individuals with disabilities are often feared as dangerous and evil individuals (Thoreson & Kerr, 1978). Thus the impression conveyed by the description of the beggars is a group of dangerous, evil offenders who live outside the law.

The females ranged from girls to old wrinkled hags. Increasing age is a cue to decreased physical attractiveness (Lennon, 1988). All are described as soiled and slatternly (untidy). Stained and dirty clothing and poor grooming
are effective cues in impression formation research (Littrell & Berger, 1986; Workman & Johnson, 1989). In fact, researchers use such cues in order to convey the impression of being unattractive. For example, in one study (Dabbs & Stokes, 1975), a confederate wore "sloppy, ill-fitting clothes and no makeup" (p. 555) in the unattractive condition. Poorly groomed individuals are judged to be from lower socio-economic class families (Littrell & Berger, 1986). Research has found an association between poor general physical appearance, including clothing and grooming, and self-reported delinquency (Agnew, 1984). The impression conveyed by the females is one of a group of unattractive, untidy, dirty, loud, brazen, and foul-mouthed delinquents from the lower socio-economic levels. The overall impression conveyed by Twain's description of this crowd of people is one of a gang of ruffians living in the meanest poverty.

Apply to the Classroom. The previous description might be given to a dress and human behavior class to analyze. For this group such a description, with no historic apparel items, seems a good choice for analysis. Another such example is the previously quoted description of the king. As part of the lesson it would be instructive to gather data to be used as a control for students' impressions of the character in question. In other words, we could ask a group of students to write an open-ended impression of the individual portrayed in a description. These impressions then might be compared to the composite impression as a function of the characterization analysis. A dress and human behavior discussion might focus on the congruence or incongruence between a composite impression based on findings from social perception research and the impressions formed by a control group of subjects. See Berrenberg (1987) and Lashley (1987) for other suggestions for incorporating person perception exercises into the classroom.

Suggestions to Facilitate Research

To begin this type of characterization research one might select and read a book, play, or poem. Alternatively, one might select, view, and videotape a movie or television series for analysis. If using written works the researcher might select descriptions of characters. The initial description of a character is often filled with references to dress cues. The next step would be to locate all references to appearance, particularly long descriptions involving many physical appearance cues. If the book has many such descriptions, they might be sampled or only descriptions of main characters might be selected. Once the descriptions are selected all specific appearance cues are noted. The next step is to attempt to relate each of the cues to empirical findings in social cognition and dress. The findings would then be compiled into a composite verbal impression of the character.

Validity for the analysis might be established through some type of triangulation (Belk, Wallendorf, & Sherry, 1989, p. 5). Researchers might (a) compare the composite impression for congruency with known historical accounts of the individual given that the individual actually lived, (b) compare the composite impression for congruency with the individual's actions throughout the novel, play, television series, or movie, (c) compare for congruency the composite impressions formed by two independent raters, or (d) compare for congruency the researcher's composite impression with the average impression of a group of subjects who have read the same information, but who are unaware of the empirical findings upon which the composite impression is based.

If analyzing a movie or television one would proceed in a similar way. However, instead of locating descriptions the researcher would isolate appearances for analysis. See Lennon (1990) for an example of how one researcher selected appearances for analysis. For example, one might choose to analyze a character's appearance only if a full frontal shot of the character can be located. Sketches might be made to aid in evaluation of dress cues. Then these cues could be interpreted in light of research findings to form a composite impression.

Since an author might use contradictory symbols of dress to imply conditions such as mental illness, immaturity or loss of wealth, situational cues may also be invoked by authors. These all need to be articulated and explained in
the analysis. An analysis of situational cues might be studied as an independent project. Someone who has studied the effects of context on the meaning of clothing might decide to study how writers use context to change the meanings of clothing cues. For example, in The Prince and the Pauper no one who met the prince, when he was dressed as the pauper, believed that he was the prince except a hermit. The hermit believed because he interpreted the prince's appearance in a unique way. The hermit assumed that the prince's bedraggled appearance meant that the prince had denounced his worldly goods, an act which the hermit deemed admirable and worthy of a prince.

A researcher who has conducted research on police uniforms, might bring that knowledge to an analysis of the meanings of uniforms worn on TV police shows. Someone interested in gender roles and clothing could study men's and women's appearance over time in the movies or on television. It seems to us that just about any research topic regarding symbols of dress could be investigated in this way. Furthermore, although journals such as Popular Culture, Popular Film and Television, and Studies in Popular Culture do publish research which focuses on literature, film, and television, this research does not generally focus on symbols of dress.

We have suggested a linkage between literary analysis and empirical research in social cognition and dress. We contend that scholars in the area of social cognition and dress are especially able and qualified to do research in characterization via symbols of dress. As researchers we are familiar with a variety of symbols of dress and the impressions those symbols evoke in human subjects. However, instead of using human subjects in our research we might use products of our culture or other cultures from which to gather our data. While a common exercise in costume history is to analyze how clothing is used by artists and authors, the notion of producing scholarly research in this area may be novel to most textiles and clothing researchers. Furthermore, the use of a different method of studying symbols of dress provides us with a new "window on the world", one of which we are well-equipped to make use. The suggested linkage of research types may help to expand the boundaries of what we understand about dress symbols by offering vast and potentially fruitful avenues for future research and pedagogical exercises and techniques.

References


Lincoln, Nebraska: University of Nebraska Press.


**Endnotes**

1. In what follows dress will be used to mean any purposeful manipulation of the body (Roach & Eicher, 1965).

2. Since it is generally agreed that media and the society it serves mirror each other (Belk & Polley, 1985), how authors use dress symbols influences or is influenced by how society uses dress symbols. Thus characterization research is important because it provides a means of expanding our knowledge regarding how individuals and societies use symbols of dress.
Analysis of Clothing Expenditures Data:
Demographic and Socioeconomic Variables used in Engel Curves

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Introduction

The purpose of this paper is to review critically the choice and interpretation of demographic and socioeconomic variables that are used in statistical analysis to describe or explain differences among clothing expenditures and consumption practices of families and individuals. A second purpose is to identify problems inherent in analysis of this type of data. It is not intended to be an exhaustive review of literature on the topic. The focus of the paper is on cross-sectional data gathered in surveys, not on changes that occur over time; on regression analysis of these data; and on Engel curves: the relationship of expenditures to income.

Because conventional demographic and socioeconomic variables sometimes seem to have limited ability to explain or predict consumer behavior, some researchers have recommended using construct variables combining social, psychological, and demographic measures. However, I observe that, in many cases, conventional demographic and socioeconomic variables are not effectively used and interpreted. In clothing research, construct variables have provided uneven results or, at best, performed no better than conventional variables (e.g., Wagner & Hanna, 1983). Researchers analyzing survey data concerning clothing and textiles expenditures generally take a descriptive approach—that is, they choose independent variables that they believe will best account for observed variation in clothing expenditures. If they use data already collected, they are limited to variables defined and selected by someone else, often for other purposes. Douthitt and Fedyk (1988) discussed some of the theoretical and practical difficulties they faced in using data from the Canadian Family Expenditure Survey. The widely-used consumer expenditures data collected by the U.S. Department of Labor are gathered primarily for updating the Consumer Price Index. Other surveys have been conducted to collect data for development of standard budgets (e.g., Winakor, 1975). Unfortunately, designing and carrying out surveys of consumer expenditures specifically designed to test theory or to analyze consumption of specific commodities have become prohibitively expensive.

Although researchers may write of "predicting" clothing expenditures, as in Wagner and Hanna (1983), they are in general simply developing descriptive models. Researchers sometimes speak of testing the predictive ability of their models by using a split-sample technique that tests the ability of an equation to "predict" the outcome in another sample taken at the same time. However, this technique cannot predict fit of a model for a sample taken of another population or at a different time. Critical examination of the meaning of independent variables used in descriptive analysis could help to bridge the gap between description and theory, and hence contribute to eventual predictive ability of models. Wagner and Hanna (1983) took this approach. Also, examination of what the variables mean should help to strengthen the possibility that the results can apply to future samples.

Economists have developed theoretical models of consumption, including complete demand systems—systems of equations that combine all commodities into a holistic model of consumption. However, the functional forms of the equations obtained for specific commodities such as clothing have so far provided a relatively poor fit for the observed expenditure behavior of

Acknowledgment
Journal paper No. J-13633 of the Iowa Agriculture and Home Economics Experiment Station, Ames; Project No. 2772.
consumers (Deaton & Muellbauer, 1980; Philips, 1983). Consequently, both clothing researchers and economic researchers continue to search for models that better fit or describe clothing expenditures behavior, rather than using rigorous theoretical models (for example, see Nelson, 1989).

### Some Problems in Regression Analysis

Most commonly, researchers developing Engel curves for clothing use some form of regression model. Following are some major types of problems that arise in regression analysis of clothing or textiles expenditures data.

### Coding of Variables

A fundamental problem raised in regression analysis of any data is coding of variables. Derrick (1979) warned against using numerical variables for concepts that are actually qualitative. Occupation is one such variable; although some occupational codes use numbers, there is no theoretical ground for coding occupation numerically. Another problem is that some variables (e.g., years of schooling) are numerical but the relationship between years of schooling and the dependent variable may not be monotonically increasing or decreasing. Appropriate transformations of data resolve some such problems; transformation of both income and clothing expenditures to logarithms has been widely used in Engel curves for clothing. However, there are situations when numerical data, transformed or not, are inappropriate. Different types of post-secondary schooling—e.g., trade school versus college—may affect clothing consumption differently, so that years of education may not be meaningful.

An alternative is to code variables as dummy or dichotomous variables (1-0), but then the number of variables in the model increases rapidly and a very large sample is needed. Special types of regression may be useful in such cases (see for example Haggstrom, 1983). Some researchers combine several variables into construct variables in order to avoid having too many dummy variables, as well as for theoretical reasons. More common construct variables include family life cycle stage (Wagner & Hanna, 1983) and socioeconomic status (Coleman, 1983).

### Judging the Fit of an Equation

Another problem is selecting the "best" equation from among many. Regression equations describing cross-sectional data for clothing tend to have relatively low $R^2$ values (e.g., Hager & Bryant, 1977). Adding more independent variables to the model usually increases $R^2$, but both $s$ and the distribution of residuals should be examined in judging the fit of a model. The measure, $s$, is root mean square error—the sum of deviations from regression divided by $(n - k)$, one more than the degrees of freedom. The goal is to keep $R^2$ large while minimizing $s$. While $R^2$ cannot decrease if more variables are added, $s$ can increase, indicating a less satisfactory fit. Winakor (1989) looked at both measures in selecting a "best" model in time series analysis.

Nor is the highest $R^2$ value necessarily an indicator of the best functional fit. Residuals from regression should be scattered randomly about the regression line (hyperplane). Plotting the residuals versus specific independent variables might reveal a need to transform an independent variable or to treat it as a dummy variable. The plot of the residuals for clothing expenditures against income, for example, often shows that the residuals become more and more widely scattered at higher incomes, suggesting a square-root or logarithmic transformation. Other nonrandom patterns in distribution of residuals might suggest other transformations. The best model may not have the highest $R^2$, but a better distribution of residuals about regression. Winakor (1975) and Wagner (1986) used different functional forms to deal with the skewed distribution of household textiles expenditures, relative to income.

### Multicollinearity

Intercorrelations among variables are unavoidable in survey data. Regression analysis assumes that independent variables are uncorrelated. Variables that are constructs of two or more other variables, such as social status, are particularly likely to present problems such as high correlation with income. Researchers may combine individual variables to
make construct variables, in an effort to avoid problems of high correlation between two or more individual variables. However, if the correlation between variables being combined is not extremely high, useful information may be lost when they are merged.

Multicollinearity can cause spurious results including meaningless $t$ and $b$ values. At an extreme, it causes the matrix to become singular and the solution collapses. Commonly-used packaged statistical programs may not provide adequate warning that the matrix is approaching singularity. Researchers should carefully examine correlations among independent variables before proceeding.

Because of the need to examine what happens to coefficients and significance levels, as well as to $s$ values and distribution of residuals, programs that automatically search for a "best" model should be used with extreme caution. If an independent variable is added to or removed from the model, the $t$ and $b$ values for other independent variables should remain relatively stable. In regression analysis of survey data used to develop clothing budgets (Winakor, MacDonald, Kunz, & Saladino, 1971), a fundamental error in conceptualization of independent variables became evident while I was comparing two equations, searching for an unexplained jump in $t$ and $b$ values that resulted from dropping an independent variable.

While packaged programs can be helpful in exploratory research, there should be theoretical justification or a clearly reasoned explanation for the choice of each variable in the final surviving model. If the program drops a variable that theory says should be included in the model, careful analysis is warranted. Finally, serious bias can result if some key independent variable is omitted from the model.

**Selected Demographic and Socioeconomic Variables**

The discussion that follows is limited to some variables most frequently used in Engel curves for clothing: income, sex and age of family members, family characteristics, social status, occupation, and education.

**Measures of Income**

According to economic theory, income explains more about expenditures for a given commodity than does any other single independent variable. (Price is the second most important variable, according to theory, but price is usually omitted when survey data are analyzed because it is assumed that the price level and structure remain constant during the period, usually one year, covered by the data. Douthitt and Fedyk, 1988, discuss this problem.) Spending by using credit or drawing down savings can modify the effects of current income, as can the effects of accumulated inventory from past expenditures, year-to-year changes in income, or expectations of future income. The relative income, permanent income, and life cycle income hypotheses address these phenomena. Clothing expenditures seem to be highly sensitive to current income (the absolute income hypothesis); Winakor's 1989 analysis suggests that, if the relative income hypothesis applied to clothing expenditures in the past, this effect has diminished in recent years.

Even current income is devilishly difficult to define and measure. Furthermore, different data sets use different measures or proxies for income, making it hard to compare results obtained by various researchers.

Three measures of income are income before taxes, disposable income, and discretionary income; total expenditures can be used as a proxy for income. Data on income differ by whether they include all types of income or only income from more common sources such as wages and salaries. If income from sources such as net profits from rentals, income from odd jobs, alimony and child support payments, etc. are omitted, income will be understated for many consumer units. Errors in measurement of income can cause regression curves to slope less steeply and make results of statistical analysis less significant. Also, consumers may be more likely to buy clothing using some sources of income than by using others (Hager & Bryant, 1977).

Disposable income—total income after subtraction of federal, state, and local income taxes and social security deductions—may be the
most appropriate measure of income because it is the sum that a consumer unit has available for decision-making purposes in the long or short run. Discretionary income is not an operational concept for examining clothing consumption because it has no consistent definition. Discretionary income is supposed to represent what a consumer unit has available to spend after paying those obligations that it cannot change in the short run—e.g., mortgage payments, certain types of insurance. The problem is that there is no agreement on what constitutes the short run—one year?—nor on what obligations cannot be changed. Some researchers have even subtracted food expenditures in computing disposable income, on the grounds that food expenditures cannot be changed! Norton and Park (1986, p. 75) did not explain why they recommended this measure.

Total expenditures may have to be used instead of income when no measure of income is available. On the grounds of the permanent income hypothesis, it can be argued that total expenditures are an appropriate proxy for income because total expenditures may fluctuate less, year to year, than income and may therefore better represent a family's overall level of consumption.

For analysis of any one commodity such as clothing, use of total expenditures violates the statistical assumption that the independent variable is truly independent of the dependent variable, because expenditures for the commodity are contained within total expenditures. Some researchers claim that clothing is a small enough share of total spending that this is not a problem for clothing (I have used total expenditures myself in some research, when no satisfactory measure of income was available). However, I know of no research on just how large a share of the independent variable the dependent variable can be before the outcome is affected by the violation. Because household textiles constitute one percent or less of total expenditures, use of total expenditures as a proxy for income would probably not be a problem in analysis of household textiles expenditures.

Clothing presents a unique case in that the elasticity of clothing expenditures with respect to disposable income is usually slightly below 1.0, whereas elasticity of clothing expenditures with respect to total expenditures is slightly above 1.0. Therefore the choice of income measure and the amount of error in the variables is likely to affect whether clothing is defined as a "luxury" or a "necessity" in economic terms. Dardis, Derrick, and Lehfeld (1981) found that total expenditures explained a larger share of variation in clothing expenditures than did disposable income, but they did not examine why this occurred. Total expenditures equals disposable income minus saving; understanding the potentially intriguing tradeoff between clothing expenditures, spending for other commodities (such as medical care or automobiles), and saving (or dissaving) awaits better theoretical models and probably better data than are now available.

Nornum's results (1989) strongly suggest that, for periods of less than one year, there is little relationship between clothing expenditures and income. This supports Winakor's conjecture (1969, p. 632) that "periods of measurement shorter than one year would be expected to give biased data on clothing acquisition and discard, because of the importance of weather changes, holidays, and the school year."

Sex and Age of Individuals

The clothing consumption process is largely an individual process rather than a family or household process (in contrast to household textiles consumption) because physical, social, and psychological requirements for clothing differ by age and sex of the person. Other things being equal, females have been found to spend more for clothing than males do at all ages beyond infancy; clothing expenditures are usually lowest for infants, increase rapidly with age to peak in the late teens and early 20s, then decline very slowly from the mid-20s until sometime after age 65, when they begin to drop off more rapidly. In the past, very elderly persons spent about the same amount annually for clothing as was spent for clothing small children. More recently, Nelson (1989) reported that clothing expenditures for infants were higher than for older children up to their teen years. She attributed this to inclusion of disposable diapers in clothing expenditures. This seemingly
anomalous finding highlights the importance of knowing how each variable is defined and measured.

Age and sex of the individual affect clothing expenditures both directly in terms of the person's own characteristics and indirectly in terms of the type of consumer unit to which he or she belongs. Among the direct effects are:

1. **Body size and build.** To some extent, prices of clothing increase as a child grows. Standard sizes of adult clothing are not priced by size, but extra-large sized lines may be priced higher for equivalent qualities. I have observed, in wear studies, that very thin people (who wear out elbows and knees) and very obese people are harder on garments than people of normal weight. In a survey, very heavy women reported having to replace hosiery more frequently than average-sized women did.

2. **Rate of growth.** The rate at which a child outgrows clothing affects the rate of replacement. Particularly for shoes, this can be a major expense.

3. **Physical activity level.** This affects the amount of wear and tear on clothing. It may be sexist to assume that boys are harder on clothing than girls are (this is a potential research topic). At the extreme, very old people with low levels of activity place little physical stress on clothing. Also, limited mobility affects their ability to go out and shop for clothing.

4. **Social activity level.** This includes school, job, and other activities that involve interaction with people. Obviously, social activity increases with the age of a child and contributes to peak spending when people are looking for mates and starting their first fulltime jobs. Reduction in social activity may contribute to declining clothing expenditures in advanced old age, while people moving to retirement communities with high levels of social activity may maintain high clothing expenditures. A woman returning to the work force after her youngest child starts to school may increase her clothing expenditures. These details, however, cannot be explored without appropriate data.

5. **Psychological factors.** The growing person's increasing self-awareness and sexual interest clearly contribute to rising clothing expenditures. Diminishing interest in personal appearance may be a factor in the decline of some older people's clothing expenditures.

6. **Personal tastes.** Fashion influences, associated with social and psychological factors, are particularly strong in teen years. It has been argued that decreasing interest in fashion and conservatism in taste contribute to low clothing expenditures by the elderly. Or is this instead due to failure of the market to provide clothing for their tastes and fitting needs?

Indirect effects of age and sex on the person's clothing expenditures include:

1. **Number, ages, and sexes of other persons in the consumer unit.** Individuals of particular ages are likely to be members of particular types of consumer units. Thus, age of individual interacts with family size, composition, and life cycle stage. For example, persons in the highest-spending age group may be members of families with other children in the same age range, perhaps attending college or high school, all competing for the family clothing dollar; or they may be single consumers with few obligations but relatively low incomes; or they may be half of young couples, maybe with a new baby, new mortgage, and other expenses of setting up a household. A person of 65 may be half of an "empty-nest" couple with paid-off mortgage, good health, and ample income; or a poor widow living alone. Stereotypes of young people as high spenders and older people as low spenders on clothing are wrong or incomplete.

Composition of the consumer unit has two effects. First, there may be economies of scale through handing down or sharing of clothing in the family. Using unpublished data from a survey conducted in 1966 to prepare clothing budgets for low-income families (Winakor et al., 1971), I found that presence of an additional child in a family reduced clothing expenditures of other family members as follows: adult male, 3%; adult female, 6%; boy, 8%; girl, 8%. Furthermore, a child's clothing expenditures were reduced more by the presence of same-sex siblings than by the presence of other-sex
siblings. This observation, plus the larger reductions for children as compared to adults, suggests economies of scale in clothing consumption. Lazaar and Michael (1988, pp. 40-48) obtained similar results in examining the impact of the presence of certain types of other people in the family on the spending of individuals.

However, economies of scale are only part of the issue. Clothing expenditures of each family member will be reduced by the presence of an additional person, other things being equal, because the income of the family must stretch to cover added needs for food, shelter, and medical care, as well as clothing, for the additional person. Qualitative research that preceded our budget research indicated that low-income families had small clothing stocks of low quality, and little to pass along or share. An added person was just one more body to clothe, not an opportunity to share clothing more efficiently.

Douthitt and Fedyk (1988) claimed that they found diseconomies of scale in clothing expenditures, but their results were confused by the fact that their data set categorized purchases of clothing for family members over 13 years of age as adult clothing expenditures. Thus, clothing expenditures seemed to be classified not by role of the person in the family but by market definition.

Children or adults may be members of one-parent or two-parent families. Other members of the family may be small children, with low clothing expenditures, or teens, with high expenditures. From the 1966 survey data, I observed that teen-aged children in particular put downward pressure on parents' clothing expenditures. Douthitt and Fedyk (1988) found that only young children's clothing expenditures depressed parents' clothing expenditures but this probably resulted from the peculiar definition of children's versus adults' clothing expenditures in their data set.

2. Income of the family. Family income depends on number of earners, their occupations and ages. Different occupations have different lifetime earning patterns. Manual laborers and professional workers may earn similar incomes when they are first forming families, but the manual laborer's income may be highest when he or she is young and strong, while the professional person's income may peak shortly before retirement when he or she has had long experience. Small children will generally be in families with relatively low incomes, while middle-aged people may be in families near the top of their incomes. Older children may be earning money of their own, possibly supplementing the family income but often spending much of their earnings for clothing.

3. Other demands on income. As noted, small children tend to be in families with high expenses for household formation and possibly for medical care (e.g., birth expenses). The low clothing expenditures of the elderly have traditionally been attributed partly to high medical expenses. However, older people allocate their incomes differently from younger people in other ways. Bureau of Labor Statistics data tables show that they spend less on home furnishings and give more to charitable causes, relative to their incomes. I know of no recent research testing the hypothesis that medical expenses compete directly with clothing expenditures.

4. Supplementary sources of clothing. Small children get more clothing from supplementary sources than do adults (Britton, 1969). Perhaps the very old get much of their clothing through gifts and other supplementary sources. If gifts come from other consumer units, these expenditures would appear in the expenditures of the other consumer units, not their own. If families are very poor and have to depend upon purchase or donations of second-hand clothing, such clothing is more difficult to locate for some types of persons than for others.

5. Market offerings. Manufacturers and retailers cater to teens and younger adults because, at least in the past, stockturn has been greater for these customers and fewer markdowns have been involved. This may be changing (Pashigian, 1988). Lawsuits challenge the custom of providing free alterations of men's clothing while charging to alter women's clothing. Better sizing of men's clothing may more adequately meet the needs of older men as compared to older women. There may be less difference in fashions for older versus younger
men than for older versus younger women. There is ample opportunity for analytical research on these issues.

The data used for my tentative explorations reported here did not include sufficiently detailed age gradations to examine such details as whether children's clothing expenditures increase smoothly or stepwise with age or the pattern of decline in clothing expenditures of adults from age 24 on. For example, it would be interesting to know if clothing expenditures of men and women follow different patterns between ages 24 and 65, and how these relate to employment status, particularly for women.

Perhaps more meaningful than the different levels of expenditures are the different income (or expenditure) elasticities for clothing expenditures. Historically, females have had higher income (expenditure) elasticities for clothing than males have, and adults have higher elasticities than children do. Using 1984-85 data, Nelson (1989) found that while adult expenditure elasticities were higher than children's, elasticities were about the same for boys and girls; men's elasticities were higher than women's. In the past, at lower incomes women have foregone clothing expenditures in favor of men, and adults for children. At higher incomes, women have spent more of each additional dollar for clothing than men have and adults more than children (Erickson, 1988). Perhaps the pattern among the sexes has changed. Another area warranting exploration was proposed by Britton in a 1968 paper. Her data suggested that clothing expenditures by elderly persons are as sensitive or more sensitive to changes in disposable income as those of younger adults.

**Family Composition, Life Cycle Stage, and Size**

Different variables interact to influence clothing expenditures of individuals. Age and sex are not independent of other variables, yet many research designs assume that they are. Number of persons in a family, their ages and sexes, number of earners, and family structure all influence clothing expenditures of individual members and the family as a whole. The interrelationships among various family characteristics are complex. Economic, sociology, and marketing researchers have used constructs such as *family composition* or *family life cycle stage* to explain expenditure practices and for market segmentation.

*Family life cycle stage and family composition* were reviewed by Wagner and Hanna (1983). Basically, they found little difference among descriptive abilities of a traditional classification of family life cycle stages, an updated classification designed to include a variety of non-traditional family types, and a model that simply classified family members by age and sex. Furthermore, none of these approaches greatly improved the amount of variation in clothing expenditures that was explained by the basic model, which included total consumption expenditures, employment (not specified), education, race, city size, and region of the country. They used 1973 data from the Consumer Expenditure Survey, which provided a sample size of over 10,000 families.

What does family life cycle stage mean? Wagner and Hanna (1983) discussed this issue in their review. One factor is how long ago the family was formed. With divorce and remarriage, and couples living together without marriage, this may be approximated by the age of the female head of the household (Winakor, 1975, p. 19). The length of time since family formation is generally associated with income. Usually families are largest when the head or heads of the household are in early middle age. Income may also be high at this stage, but other expenditures that compete with clothing (such as housing) may also may high at the same stage. The competition among different expenditures for family income may be a reason why family life cycle stage did not help to explain much about clothing expenditures in the Wagner and Hanna research.

More puzzling is the finding that variables representing ages and sexes of family members did not function particularly well either. Clothing, perhaps more than any other major commodity group, is consumed by individuals rather than the family as a whole. Mork (1987), using 1961 data, observed that clothing expenditures were among the most sensitive to family size. Age-sex variables functioned well in describing household textiles expenditures (Winakor, 1975). As
discussed under number, ages, and sexes of other persons in the consumer unit, in analysis of clothing expenditures for specific types of individuals, variables representing age and sex of other family members were very informative.\textsuperscript{5} Lazear and Michael (1988), as noted, reported that presence of specific types of family members impacted the clothing expenditures of others.

I suspect that part of the reason that Wagner and Hanna (1983) found that variables for several age-sex classes were not significant, when basic demographic variables were included in the model, could be a large amount of error in federal consumer survey data for clothing.\textsuperscript{7} Nelson (1989) acknowledged the measurement error for clothing expenditures in her data, but did not comment on how this might affect the results. As noted in the discussion of income, the greater the amount of random error in data, the less likely it is that significant outcomes can be obtained in regression analysis.

\textbf{Social Status}

Social status, (or social class, or socioeconomic status, which may or may not be defined identically) has long been recognized as an important potential determinant of clothing expenditure, because clothing consumption is strongly influenced by social factors. The relationship between social status (the term used here, for simplicity) and clothing expenditures, however, has not been defined except in a general sense, nor has it been quantified. My interpretation of the reasons for this failure include lack of agreement on an exact definition of and a precise way to measure social status, plus the problem that social status is interrelated with several key variables, particularly with income, occupation, and education, which are also correlated among themselves, not necessarily in a linear manner.

Although most models of social status view it as a layer-cake arrangement with six or seven major layers, it is also sometimes modeled as a continuum from highest to lowest status without defined layers. In either case, the distribution of population among the various levels is usually seen as approximately normal, with about two-thirds of the population in the middle ranges. However, there are fewer people at the extreme upper level than at the extreme lower level. The relationship between clothing expenditures and status does not necessarily increase monotonically from lowest to highest status level; that is, expenditures for clothing might be lower, other things being equal, at a very high class level than at the level immediately below. However, families at extremely low and extremely high status levels are seldom interviewed in surveys because they are difficult to contact.

Coleman (1983) reviewed and updated developments in research involving social status, including an explanation of why such research was dormant for a number of years. He focused on prediction for marketing purposes, not on theory development. He mentioned dress and personal appearance as they differentiate among people of different social statuses and referred to the ambiguity of clothing and personal appearance that has confused this picture in recent decades. The universal fashion for blue jeans was cited as a possible reason for the decline since the late 1960s in clothing as a share of total personal consumption expenditures (\textit{Textile and Clothing Industries}, 1983, p. 34). Coleman (1983) also mentioned the blurring of traditional white-collar versus blue-collar dichotomy. This probably results from at least two factors. First, the type of clothing worn for work is no longer a reliable indicator of income level, if it ever was; second, the introduction of automation and robotics to the workplace has reduced the number of "dirty" jobs so that many tasks that once required overalls or coveralls may now be done by people wearing sport shirts or other casual apparel.

Coleman (1983) argued that occupation is more important than income in determining social status. Pioneering work on clothing, social status, and occupation was conducted at Michigan State University (see for example Form & Stone, 1955).\textsuperscript{6} In a scale that Coleman (1983, p. 277) presented for quickly estimating status, occupational level accounts for one-third of the overall point value of the status index. Comparing social status and income, he said that "social class and income are not...very well correlated" (p. 272) and that this correlation has been declining since the 1950s. Among reasons he gave are the association of income with age.
(this pattern, although he did not say so, differs among occupations), varying ages and sexes of household earners, the trend away from the one-earner household headed by a male, and the fact that earners within a household may not pool their incomes. Economists might explain the poor correlation between social status and income by referring to the permanent income hypothesis. Income may fluctuate widely from year to year, while social status and total expenditures remain relatively stable.

Within each status level, there is a standard consumption package, a phenomenon observed by Winakor and Thomas (1978, p. 273). Although families with higher and lower incomes within a given status level spend more or less than the mean for that level, they do not deviate sharply from the "package." Meanwhile, at comparable incomes, consumption patterns differ when social status differs. Schaninger (1981) reported results from a small survey indicating that both income and social class were significant in explaining certain clothing purchases.

Coleman (1983, p. 274) phrased the research question in terms of "how social class affects use of income in the marketplace...." This approach harmonizes with economic theory, which states that income is the chief determinant of expenditures for consumption. Coleman went on to say (p. 275) that "we...have to use other variables—age, perhaps, or sex, family composition, life style, self-image, and social class—to understand why income has sometimes operated rather well as a predictor and other times rather poorly."

Coleman noted that members of lower social status levels tend to reside near their relatives, while members of higher status levels move away from their relatives. Proximity of relatives might influence clothing consumption, particularly with regard to gifts, exchange, or handing down of clothing among relatives. Caplow (1982, p. 388) observed that the nearer the location of the relative, the more likely that he or she would receive a Christmas gift. Britton (1969) reported that gifts of new and used clothing were the two major sources of supplementary clothing for low and low-middle income families. Also, when relatives live nearby, families may socialize mainly with them and may feel less need to impress others through dress.

According to Coleman (1983), established measuring scales are outdated, but he did not come to grips with shortcomings of existing scales—that social class is usually identified with the main earner; non-traditional household types present problems; the difficulty of defining women's contribution to family social status. Other problems not listed include those of race or ethnicity: does a Black, Latin, or Oriental household have comparable social status to a white household, other things being equal? How do researchers equate farm occupations with occupational status scaled mainly on an urban basis? How do they deal with neighborhood status in rural non-farm areas? An approach to neighborhood problems is to use a modified U.S. Census of Housing coding system for housing and neighborhood conditions (Thomas, 1975, p. 201).

Occupation

Occupation is difficult to define and classify for numerical analysis. Kruskal (1981) discusses this problem as well as other interesting questions about the analysis and interpretation of data. The list of possible occupations is almost limitless; occupation is a function both of what the worker does and what kind of commodity the employer produces. Occupations can be coded numerically, at least in principle, if they are rated according to a hierarchy of the esteem in which society holds them. A very large opinion survey would be required to establish such a hierarchy of all major occupations. Even so, occupational ranking may not be related monotonically to clothing expenditures, while it may be too highly correlated with social status for both to function as independent variables in the same equation.

An alternative is to group occupations into a limited number of categories, then code them as dichotomous or dummy variables. Any such grouping is bound to be criticized for lumping together occupations that are unlike in some major respects. If the number of categories is large, the size of the sample must be enormous. Again, if the categories are similar to occupational groupings used in defining social
status levels, occupation and status will not function independently in regression equations.

Most analyses of the effect of occupation on family and individual clothing consumption deal with the occupation of the male head of the household. Problems not addressed include what to do when households have more than one major earner, and when households are headed by females.

The basic question about why occupation affects clothing consumption of individuals and families has seldom been addressed explicitly, aside from the status component of occupation. From my research, I conclude that occupation of the household head is related to clothing consumption of the family in five ways.

1. What clothing is required for the job? Underlying this question are formal dress rules, such as uniforms specified for the position, less formal dress codes established by the employer, and socially-established but unstated dress rules such as those observed by Form and Stone (1955). Special protective clothing may be required. Also relevant are such factors as how hard the work is on the clothing. Abrasion, excessive dirt, and corrosive chemicals may accelerate wear on clothing. For purposes of analysis, Brew, O'Leary, and Dean (1956) classified farmers with city workers that wore similar work clothing. Workers in some occupations must replace clothing frequently in order to be in current fashion, or do not wear any garment more than a few times because they are in the public eye.

2. Does the employer contribute to the cost of clothing for the job and, if so, how much and in what way? Employer provision of clothing, wholly or partly, is a form of non-money income for the employee. It reduces the employee's out-of-pocket expenses for work clothing. Arrangements include providing some or all of the work clothing to the employee without cost, providing a clothing allowance, renting work clothing to the employee (sometimes with laundry or dry cleaning services included), and selling clothing to the worker at a discount or arranging for the employee to buy clothing at a discount.

3. Can the work clothing be worn off the job as well as on? First, is the type of clothing suitable for off-job wear? Second, does the employer permit it? Conventional business suits and dresses can be worn for dress occasions off the job; work shirts and pants can be worn for leisure and work around the home. Special uniforms or protective clothing may be totally unsuited or legally prohibited for off-job wear. Some employers permit workers to keep and wear out clothing that they have provided for workers, after insignia or logos are removed, while others insist that such clothing be returned when it is no longer wearable on the job or when the worker leaves the firm.

4. How do the prestige of the job and its off-duty requirements affect the kind, amount, and cost of clothing that the worker wears off the job? The worker may have to participate in activities that are extensions of his or her occupation, such as public-service activities or business golf games, that require appropriate clothing. Or there may be a more general social expectation attached to the position, obligating the worker to wear certain kinds of clothing when seen off the job.

5. How do the worker's off-work duties and the status attached to the occupation affect the clothing needs of other members of the worker's family? These effects may be direct, as in the case of the spouse who must attend conventions, help entertain the employee's business associates, or participate in appropriate clubs and social activities. Or they may be less direct; the wife and children may be expected to display the husband's pecuniary status in their dress (Veblen, 1899/1934).

Dardis et al. (1981) analyzed data for 1972 and 1973 from the U.S. Bureau of Labor Statistics survey of consumer spending. They found that occupational groups tended to cluster as follows:

- sales workers, salaried managers, clerical workers, and the self-employed had the highest family clothing expenditures.
- salaried professionals and service workers were intermediate.
- operators and unskilled workers were low.
- retired persons, followed by those who were not working, were the lowest spenders.
for clothing for themselves and their families.

Results differed somewhat between 1972 and 1973. Also, use of total consumption expenditures versus disposable income in the equation affected the results. In particular, self-employed persons ranked in the second group rather than in the uppermost group on the basis of disposable income.

Data from the 1972-73 survey, published in table form by the USBLCS, showed that armed forces personnel and their families spent a higher percentage of their total consumption expenditures for clothing (8.2%) than did any other major occupational group. Average for families surveyed was 7.1 percent (U.S. Department of Labor, 1977, p. 25).

Kielly (1970, pp. 73-80) analyzed data for 419 women in low and low-moderate income families. This group included both wives of male heads and women who were single parents. Other things being equal, women who worked fulltime outside the home had larger inventories of certain types of garments, acquired more of some garments, and spent more money for clothing than did women who did not work fulltime. Furthermore, the differences were for garments that would be needed by women who worked in clerical and sales positions. However, if family income exceeded a certain level, the differences between working and non-working women's clothing acquisitions, inventories, and expenditures disappeared. Schaninger (1981) reported that the wife's employment status was related to certain aspects of her dress purchases.

Education

I know of no analytical study of the effect of education on clothing expenditures, although it is frequently used as a demographic variable in equations describing clothing expenditures. As with occupation and social status, if it is family clothing expenditure that one wishes to analyze, whose education is important? If individual clothing expenditure is the dependent variable, this is not an issue.

Human capital provides a theoretical framework for looking at education. A greater amount of education is expected to affect the individual in three ways: it enables him or her to earn a higher wage when working in the market for pay, it makes his or her time spent in household production more valuable, and it opens up the possibilities of more varied activities in leisure time. Thus, in general, more years of education would be associated with earning a higher income and having an occupation of higher social esteem; the individual would therefore be expected to spend more on clothing. However, the more highly educated person might be more efficient in household clothing production and therefore might spend less on clothing than others in highly paid occupations, other things being equal. His or her tastes in leisure might emphasize activities requiring large expenditures that would compete for clothing dollars—e.g., international travel.

Suggestions for Further Research

Some suggestions for further research have been mentioned under discussions of specific variables. There are no quick-and-easy solutions to the puzzle of interrelationships among variables. No computer program can do it—human insight is required. A useful tactic, for large samples, is to sort data into smaller subsamples to be examined and compared. As noted, Coleman (1983) suggested sorting on social class and then examining the effects of income.

The confounding of two or more related variables—e.g., education and occupation—as they affect clothing expenditures might be resolved by sorting the sample on one of the variables and running the same models in each subsample. Suppose the sample were sorted on education (by classes such as elementary education, secondary education, post-secondary education, and graduate or professional degree) and then examined for the effects of occupation and all other major variables. This would greatly reduce problems of multicollinearity as one would not find many medical doctors with only a primary or secondary education. It would also reduce part of the problem of the association of income with education. Sorting data into groups by family size, composition, age of household
head, or life cycle stage and then examining the effects of age on clothing expenditures would help to clarify interactions among these and income. Another type of task is reexamining questions, using recent data, that were raised in much earlier surveys but which were not examined using regression techniques. For example, Erickson (1968) reported that in 1960-61 people of different ages and sexes allocate their clothing dollars differently among outerwear, footwear, underwear, sleepwear, and accessories.

Conclusion

Cross-sectional data gathered in surveys can tell us much about clothing consumption and help to clarify theory. However, in order to interpret results correctly, it is important to understand how the variables are measured and the interconnections among variables involved. Examining the effects of variables individually without recognizing their associations with others leads to conclusions that are at best trivial and, at worst, false. It is also essential to use appropriate models. We should always be wary of research that does not explore and compare different models.

References


Blacksburg: College of Human Resources, Virginia Polytechnic Institute and State University.


Endnotes

1 In this paper, the terms family, household, and consumer unit are used more or less interchangeably, as is the case in much of the literature. However, it is important to know for a given data set the definitions used to establish eligibility for respondents. A household is a group of people who share a dwelling unit; a family is a group of people related by blood or law; a consumer unit is a group of people, related or unrelated, who share a dwelling unit and pool their incomes and expenditures. Consumer units may consist of only one person. See Bryant (1990, pp. 1-7).

2 For lists of some older sources on aspects of this topic, see Winakor (1982, 1987).

3 Winakor (1989) discusses some problems of analysis of time series data.

4 The regression analysis of these data was never published.

5 These findings come from my unpublished analyses of data from large surveys of consumer expenditures conducted in the 1960s and 1970s by the U.S. Department of Labor. The regression models used to obtain these results included, in addition to age and sex of the individual, the number of persons in the consumer unit, its total annual expenditures (or income), and other such variables as were available in the data set.

6 Unpublished regression results using survey data gathered for budget development (Winakor et al., 1971).

7 For a partial discussion of this problem, see U.S. Department of Labor (1990, pp. 5-7).

8 Although her name does not appear as author of publications resulting from this work, Hazel B. Strahan, then Head of the Department of Textiles, Clothing, and Related Art, was instrumental in inaugurating the research.
Research Methods and Statistical Techniques in Articles on Social Psychological Aspects of Clothing, 1970 - 1985

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Wanda A. Sieben, University of Minnesota

During the 1980s college professors who were engaged in the research and teaching of the social psychological aspects of clothing identified the need to develop a theoretical basis for this area. At the 1986 annual conference, the Association of College Professors of Textiles and Clothing (ACPTC) sponsored a discussion on subject matter clarification which stimulated a Theory Development Workshop held in the summer of 1987 (Williams, 1989). Sessions at the 1987 and 1988 ACPTC regional conferences were also instrumental in foregrounding theoretical and methodological issues. The discussion of subject matter concerning the social psychological aspects of clothing culminated in the 1989 ACPTC post conference workshop. This paper was prepared in response to a call announced for that workshop.

A researcher's success in support of a theory or modification of a theory is often contingent on his/her comprehension of, as well as utilization of, appropriate research methods and/or statistical analysis. Therefore, adequate preparation in research methods and statistical techniques is often a prerequisite to becoming a competent researcher. The purpose of this research was to identify the types of research methods and statistical techniques reported in the journals serving as major outlets for published research on the social psychological aspects of clothing from 1970 through 1985 and to delineate patterns in their use.

Major benefits of conducting this research can be realized in each of the following three areas:

(a) making recommendations for course content in graduate level research methods classes; (b) making recommendations for a minimum level of knowledge in statistical techniques; and (c) making recommendations for faculty development areas.

In other disciplines, systematic analyses of published research articles have been conducted for various reasons (Goldsmith, 1983). Goldman (1979) argued that analyses of citations or references of journal articles are often conducted because they are popular indicators of the behaviors of scholars and because they reflect an author's debt to earlier works, constitute a statement as to which of those works are important, and are a means by which authors anchor their work and relate it to earlier research (Goldsmith, 1983). In marketing, for example, content analysis studies have been conducted periodically on such journals as the Harvard Business Review, Journal of Marketing, Journal of Marketing Research, and Journal of Consumer Research (Myers, Massy, & Greyser, 1980). In general, however, studies undertaken in marketing (Clark, 1985; Goldman, 1979), education (Walberg, Rashe, & Mantel, 1977; West, 1978), psychology (Cox, 1977; Howard, Maxwell, Berra, & Stermitzke, 1985), and sociology (Broadus, 1952) have focused on an analysis of the citations and author affiliation.

There also exist some researchers who addressed or attempted to address the trends in use of research methods and statistical techniques in published articles. Higbee, Millard,

Acknowledgment

The authors are grateful for the inspiration of Dr. Gloria Williams at the University of Minnesota during the proposal stage of this research and for the valuable comments of Dr. George Morgan at Colorado State University on an earlier version of the manuscript. Sincere thanks are also extended to two anonymous reviewers and the editors who provided critical and constructive suggestions.
and Folkman (1982) reported that in the Journal of Social Psychology there was an increase in the use of experimental research over correlational research from 1969 to 1979. Edgington (1974) found in the tabulation of statistical procedures used in American Psychological Association (APA) journals that all APA journals showed an upward trend in the use of analysis of variance and, more specifically, the use of complex analysis of variance techniques over the use of simple one-way analysis of variance.

Within the home economics discipline, Goldsmith (1983) conducted an empirical analysis of the Home Economics Research Journal to determine the nature and scope of the journal. Information provided in articles about the authors, funding sources, topics, and citations were analyzed. Goldsmith's research identified clothing and textiles as the most common article subject area. An analysis of most-used journals in the citations of the Home Economics Research Journal also revealed that home economics in general lacks concentration on only a few journals, reflecting a wide variety of reading and research interests.

More directly related to clothing and textiles than Goldsmith's research was a state of the art review of clothing and human behavior (Hutton, 1984). In a review of 300 clothing-related research reports published between 1970 and 1981, Hutton assessed the characteristics of published research reports of clothing as a form of human behavior. She also evaluated the state of research as it has contributed to building theory. A tabulation of different data collection techniques using four categories (paper and pencil, laboratory or natural setting experiment, content analysis of interviews and written responses, and case study/participant observation) indicated that clothing and textiles professionals tended to ask exploratory questions of a correlational nature more often than did researchers of clothing and human behavior from other fields. Reference was also made to the increased use of sophisticated statistical techniques over time. However, a need still exists for an in-depth analysis focusing on research methods and statistical techniques in the social psychological aspects of clothing research.

Method

The Clothing and Textile Arts Indices developed by Hutton (1980; 1985; 1986) were used to identify articles to be included in this review. This particular index was chosen over the other published indices and abstracts on which the index is based because this is the only publicly available index which has a section specifically devoted to the social psychological aspects of clothing research. However, readers need to be aware of potential sampling errors for omitting pertinent articles that could have been located in the original indices. But since such an attempt of reviewing numerous indices and abstracts in developing a reliable sampling list was beyond both the scope of this research and the realm of the authors' expertise, Hutton's index was a very viable solution for the proposed purpose of this research.

First, all of the citations included in the section of "Social Psychological Aspects of Clothing" in the Clothing and Textile Arts Index (1980, pp.2-59; 1985, pp.10-32; 1986, pp.10-18) were recorded using a data base software program on a personal computer. The original published index is organized by key words; therefore, a reference article could be cited more than once under different key words. With the aid of the data base program, articles entered into the computer were sorted by journal, year, volume, number, and author. In the process of sorting, all of the citations which had been entered more than once were deleted. Consequently, the size of the file was reduced to about half of the original and resulted in approximately 1500 separate articles from more than 500 different publication sources.

Several criteria were developed at this stage in order to reduce the sample size and in order to focus on only major publication outlets for research in the subject matter area. First, articles from either popular magazines or trade/industry journals were excluded. Second, articles which reported on research in the form of an abstract were excluded since the analysis needed detailed information on specific research methods and statistical techniques utilized. Third, it was assumed that journals in which fewer than five articles appeared in the index would not be regarded as major outlets of the
field. Therefore, only journals with more than five articles contained in the indices over the 15-year period were included. It should be noted that this particular criterion was somewhat arbitrary because some prestigious journals that are among the most difficult to gain acceptance might have been eliminated under this criterion. However, the cutoff number of five was adopted not only because the authors attempted to study only the major publication outlets for research in the subject matter area but also because it was imperative that the total number of sample be reduced to a manageable size. Last, articles which this study classified as editorial, literature review, historical overview, theoretical model, and book or research review were not included in the analysis. Using these criteria, the final sample consisted of 318 articles from 21 publication sources. Selected journals included in the sample were divided into three groups: clothing/textiles/home economics related (hereafter, clothing related) publications, psychology/sociology/social psychology related (hereafter, psychology related) publications, and marketing related publications. A list of specific journals included in each group can be found in the Appendix.

Every research method and statistical technique used in these articles was identified and categorized using a coding process developed by the authors. The first author coded all of the articles and the second author coded approximately half of the articles. Interrater reliability was calculated following the formula used by Goodwin and Goodwin (1985): (number of coding agreements)/(number of coding agreements plus number of coding disagreements). Agreement meant that both raters concurred on the classification of a research method or a statistical technique. The inter-rater reliability estimate was 89%.

Each study was categorized as experimental, survey, or other based upon its research method. The experimental category includes true experimental designs (lab and/or field) as well as quasi-experimental designs, such as nonequivalent control group pretest-posttest designs or interrupted time series designs. A study was categorized as using the survey method if a researcher, often utilizing a questionnaire or interview schedule, attempted to measure the variable or variables of interest and to provide a representative description of some known population without involving manipulation of the independent variable or control of all other variables either by randomization or by direct experimental control (Cozby, 1985). Research studies which utilized observation, content analysis, archival data, or any other method which was neither experimental nor survey were classified as other. In other words, the research method coded was directly related to the purpose of the study. For example, in the study of person perception Miller (1982) employed a 2 x 2 x 2 experimental design and used a questionnaire in collecting the data. The data were analyzed using three-way ANOVA. The research method of this study was identified as an experiment rather than a survey.

Statistical techniques were classified into 20 different categories or types of statistics, adopted from Goodwin and Goodwin (1985). As in the original Goodwin and Goodwin's article, these 20 types were then put into four groups by approximate order of the degree of complexity or sophistication (with the exception of the last group), which somewhat arbitrarily correspond to course progression in statistics: basic, intermediate, advanced, and other techniques. The system used by Goodwin and Goodwin was selected as the basis because, as previously explained, there has not been such an analysis in the field of social psychology of clothing in the past and also because their system was more conveniently set up for the type of recommendations the authors of this research were concerned about, namely, graduate education and faculty development, compared to other systems such as discipline-based classification scheme (e.g., agronomy base, biology base, psychology base, etc.). Where more than one statistical technique was employed in a single article, as was the case with 74.7% of the articles sampled, each technique was coded into an appropriate category. As a result, the total number of coded statistical techniques exceeded the total number of articles reviewed.

The first group included statistical techniques which were considered to be at a basic level. These were descriptive statistics (frequencies, percentages, central tendency, and variability),
Pearson product-moment correlation, chi-square, t-test, and one-way ANOVA. A study was considered as using descriptive statistics if it presented any of the statistics in the parentheses above as a final figure to report. However, if descriptive statistics were reported as a means of supplementing a higher level statistic, they were not coded as a separate technique, that is, means and standard deviations reported in conjunction with ANOVA were not coded separately.

The second group or intermediate level of techniques included factorial ANOVA, ANCOVA, planned orthogonal comparisons (e.g., Dunn's test, Fisher's Least Significant Difference Procedure, etc.), post-hoc multiple comparisons (e.g., studentized range statistics, the Newman-Keuls test, Duncan's New Multiple Range test, Tukey's test, Scheffé's test, Dunnett's test), partial correlation, and multiple regression. The third group or advanced level of techniques involved discriminant analysis, factor analysis, cluster analysis, and MANOVA/MANCива.

The fourth group included other correlations, other nonparametric statistical techniques, miscellaneous techniques, tests of reliability, and tests of validity. This group does not necessarily embrace highly sophisticated or advanced statistics; rather it is a group of relatively infrequently used statistical procedures. Correlations other than Pearson correlation were classified as other correlations. Some of the examples are biserial, point-biserial, phi, Spearman's rho, Kendall's tau, and Cramer's phi. The category of other nonparametric statistical techniques denotes such techniques as Wilcoxon's rank-sum test, Wilcoxon's matched-pairs signed-ranks test, the Kruskal-Wallis one-way analysis of variance, Freidman's Rank test, the sign test, and the Mann-Whitney U-test. Any statistics that could not be classified as the above ranging from simple to complex were categorized as miscellaneous. Lastly, following the classification scheme used by Goodwin and Goodwin (1985), various techniques used for measurement-related reliability and validity checking were coded under the classification of "tests of reliability" or "tests of validity" even though the actual statistical procedures used most often involved correlational or percentage techniques. Goodwin and Goodwin indicated that this was done because the constructs of reliability and validity associated statistical techniques are usually taught in measurement courses rather than in statistical courses.

Results and Discussion

Included in Table 1 are the major research methods used by researchers of the social psychological aspects of clothing over the 16-year period. There was a clear tendency toward the

<table>
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<th>Publication site</th>
<th>Experiment</th>
<th>Survey</th>
<th>Other</th>
<th>Total</th>
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</thead>
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<td>Psychology related journals</td>
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<td>34.74</td>
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<td>Marketing related journals</td>
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<td>19</td>
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<tr>
<td>Total</td>
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</table>

dominant use of survey methods in clothing related publications whereas research studies published in psychology related publications used experimental methods more heavily. Research reports regarding the social psychological aspects of clothing published in marketing related journals utilized survey methods even more heavily than the ones published in clothing related journals. All three fields reported other means of research methods in less than 5% of the studies. Chi-square analysis revealed significant differences between the expected frequencies of the research methods and observed frequencies, \( \chi^2(4, N=318)=54.63, p<.01 \).

Examination of the distribution of the selected articles indicated that research on the social psychological aspects of clothing has been reported in a variety of journals (see Appendix). Moreover, the findings also indicated a higher usage of certain methods and statistical techniques according to the background
discipline affiliated with a periodical. This finding is somewhat expected since historically different disciplines stress different research designs, for example, psychology as a discipline emphasizes experimental designs and sociology emphasizes surveys. This may reflect the type and level of graduate education regarding research methods and statistical techniques offered in a particular discipline. Therefore, sensitivity to the intended source of publication in the area is prudent if acceptance by a particular journal is desired.

A close examination of the research methods used in the 14 articles under the column of 'other' in Table 1 indicates that, generally speaking, other research methods such as content analysis, use of archives, or observation have been used increasingly in the social psychological aspects of clothing research. Before 1975 there existed only one observation study reported in psychology related publication sites; there were three more articles in clothing related and psychology related sites before 1980; and, the remaining 10 articles were reported after 1980.

Even though there existed obvious preferences for specific methods depending on the background discipline of the publications, when the research methods were tabulated without being segregated into the different publication sites, experimental and survey methods had approximately equal emphasis (46.86% and 48.74%, respectively). This may be looked upon as indicating that researchers involved in the social psychological aspects of clothing indeed come from several disciplines, rather than concentrating on a specific one.

The use of different research methods in the social psychological aspects of clothing was also analyzed by each year and by four-year intervals to determine whether systematic relationships were evident. The analysis of year-by-year data

| Table 2. Percentage distribution of major research methods used by researchers of social psychological aspects of clothing from 1970 through 1985 |
|-----------------------------------------------|--------|--------|--------|--------|--------|
|                                             | %  N    | %      | %      | %      | %      |
| **Clothing related journals:**              |        |        |        |        |        |
| Experiment                                 | 0.0     | 0      | 33.3   | 4      | 26.8   | 11     | 20.5   | 17     |
| Survey                                     | 100.0   | 9      | 66.6   | 8      | 76.2   | 16     | 70.7   | 29     | 74.7   | 62     |
| Other                                      | 0.0     | 0      | 0.0    | 0      | 14.3   | 3      | 2.4    | 1      | 4.8    | 4      |
| **Psychology related journals:**           |        |        |        |        |        |
| Experiment                                 | 57.1    | 28     | 72.9   | 49     | 58.5   | 31     | 53.8   | 28     | 61.0   | 130    |
| Survey                                     | 40.8    | 20     | 25.4   | 15     | 37.7   | 20     | 36.5   | 19     | 34.7   | 74     |
| Other                                      | 2.0     | 1      | 1.7    | 1      | 3.8    | 2      | 9.6    | 5      | 4.2    | 9      |
| **Marketing related journals:**            |        |        |        |        |        |
| Experiment                                 | 0.0     | 0      | 25.0   | 2      | 0.0    | 0      | 0.0    | 0      | 9.1    | 2      |
| Survey                                     | 100.0   | 9      | 75.0   | 6      | 100.0  | 2      | 66.7   | 2      | 86.4   | 19     |
| Other                                      | 0.0     | 0      | 0.0    | 0      | 0.0    | 0      | 33.3   | 1      | 4.5    | 1      |
| **Total:**                                 |        |        |        |        |        |
| Experiment                                 | 41.8    | 28     | 62.0   | 49     | 43.4   | 33     | 40.6   | 39     | 46.9   | 149    |
| Survey                                     | 56.7    | 38     | 36.7   | 29     | 50.0   | 38     | 52.1   | 50     | 48.7   | 155    |
| Other                                      | 1.5     | 1      | 1.3    | 1      | 6.6    | 5      | 7.3    | 7      | 4.4    | 14     |

Note. Sum of percentages may not equal 100 due to rounding.
did not yield significant statistical results, partially due to small sample sizes in each cell, which are therefore not reported here. Table 2 shows the percentage distribution of the research methods when the data were analyzed by four-year intervals. Four separate chi-square tests (one test per clothing related, psychology related, marketing related, and total) were conducted between the three types of research methods (i.e., experiment, survey, and other) and the four-year time intervals.

Even though there were no significant findings, it should be noted that the use of the experimental method in research papers on the social psychological aspects of clothing published in clothing related publications has generally increased. Survey methods were used in 100% of the sample included in the analysis from 1970 through 1973, compared to the period after 1974, which showed approximately 70% of the studies using survey methods. From 1978 through 1981, the use of experimental methods declined, but the use of methods in the "other" category increased. Examples of the research methods included in this category are content analysis and observational studies.

Since Higbee, Millard, and Folkman (1982) reported an increased use of experimental research from 1969 to 1979, the articles included in the current study for nearly the same time period (1970-1979) were analyzed to determine whether this trend would be observed when the analysis of the Journal of Social Psychology was limited to a review of research on the social psychological aspects of clothing. Observations indicated that experimental methods were used

Table 3.
Frequencies of major statistical techniques reported in all articles on the social psychological aspects of clothing during the period from 1970 through 1985

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<td>76</td>
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Note. No. of statistical techniques means the sum of the number of different statistical techniques which were reported in each article.

190
Table 4. Percentage distribution of major statistical techniques reported in social psychological aspects of clothing articles from 1970 through 1985: Clothing Related Publication Sites

<table>
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<td>41</td>
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<td>Mean/article</td>
<td>2.00</td>
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<td>3.33</td>
<td>2.56</td>
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<td>Total Basic Techniques</td>
<td>66.7%</td>
<td>48.8%</td>
<td>61.4%</td>
<td>36.2%</td>
<td>48.3%</td>
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<td>Total Intermediate Techniques</td>
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<tr>
<td>Total Advanced Techniques</td>
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</tr>
<tr>
<td>Total Other Techniques</td>
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<td>32.6</td>
<td>12.9</td>
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Note. No. of statistical techniques means the sum of the number of different statistical techniques which were reported in each article. Sum of percentages may not equal 100 due to rounding.

Table 5. Percentage distribution of major statistical techniques reported in social psychological aspects of clothing articles from 1970 through 1985: Psychology Related Publication Sites

<table>
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</thead>
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<tr>
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<td>59</td>
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<td>52</td>
<td>212</td>
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<td>No. of statistical techniques</td>
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<tr>
<td>Mean/article</td>
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<td>2.15</td>
<td>2.34</td>
<td>2.83</td>
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<tr>
<td>Total Basic Techniques</td>
<td>67.2%</td>
<td>56.7%</td>
<td>42.0%</td>
<td>42.9%</td>
<td>51.3%</td>
</tr>
<tr>
<td>Total Intermediate Techniques</td>
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<td>24.4</td>
<td>31.5</td>
<td>27.9</td>
<td>25.5</td>
</tr>
<tr>
<td>Total Advanced Techniques</td>
<td>0.9</td>
<td>4.7</td>
<td>10.5</td>
<td>11.6</td>
<td>7.3</td>
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<tr>
<td>Total Other Techniques</td>
<td>15.0</td>
<td>14.2</td>
<td>16.1</td>
<td>17.7</td>
<td>15.8</td>
</tr>
</tbody>
</table>

Note. No. of statistical techniques means the sum of the number of different statistical techniques which were reported in each article. Sum of percentages may not equal 100 due to rounding.

Table 6. Percentage distribution of major statistical techniques reported in social psychological aspects of clothing articles from 1970 through 1985: Marketing Related Publication Sites

<table>
<thead>
<tr>
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<td>9</td>
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<td>No. of statistical techniques</td>
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<td>Mean/article</td>
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<tr>
<td>Total Basic Techniques</td>
<td>56.5%</td>
<td>53.8%</td>
<td>27.3%</td>
<td>33.3%</td>
<td>47.8%</td>
</tr>
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<td>Total Intermediate Techniques</td>
<td>17.4</td>
<td>7.7</td>
<td>9.1</td>
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<td>13.0</td>
</tr>
<tr>
<td>Total Advanced Techniques</td>
<td>13.0</td>
<td>27.0</td>
<td>36.4</td>
<td>33.3</td>
<td>24.6</td>
</tr>
<tr>
<td>Total Other Techniques</td>
<td>13.0</td>
<td>11.5</td>
<td>27.3</td>
<td>11.1</td>
<td>14.3</td>
</tr>
</tbody>
</table>

Note. No. of statistical techniques means the sum of the number of different statistical techniques which were reported in each article. Sum of percentages may not equal 100 due to rounding.
at a rather steady rate, whereas surveys, which were not used from 1970 through 1975, started to emerge since 1976.

After the exclusion of two studies which did not report any use of statistical techniques, a total of 316 studies were tabulated in terms of 20 different statistical techniques (refer to Table 3 for classification system). Then, the data were examined by aggregating the number of statistical techniques in all publications by each year (Table 3). Generally speaking, the published articles on the social psychological aspects of clothing showed an increase in the use of the statistical techniques from 1970 through 1985, except from 1976 through 1978 where there was a temporary decrease. Table 3 also demonstrates that the use of basic level statistical techniques has decreased rather constantly (from 10 basic techniques out of 14 total number of statistical techniques [71.4%] in 1970 to 25 basic techniques out of 57 total number of statistical techniques [43.9%] in 1985) and that the uses of intermediate and advanced level statistical techniques showed relatively steady increase.

Tables 4, 5, and 6 indicate that research papers published in psychology related publications had the lowest mean number of statistical techniques per article (mean = 2.38), those published in marketing related publications had the highest (mean = 3.29), and those in clothing related publications fell into the middle position (mean = 2.84). The tables also demonstrate that in all three publication sites the use of basic level statistical techniques has decreased and the uses of intermediate and advanced level statistical techniques have increased.

In general, the usage pattern of statistical techniques over the 16-year period differed among the three publication sites. Clothing related publication sites have shown an increase in the mean number of statistical techniques per article (from 2.00 in 1970-1973 to 3.58 and 3.33 in 1974-1977 and 1978-1981, respectively) and, then, somewhat of a decrease (2.96 in 1982-1985). Psychology related publication sites showed a rather steady increase in the mean number of statistical techniques per article during the 16-year period, except for a slight decrease during the period from 1974 through 1977. The means for marketing related publication sites should be interpreted with caution because the last two time intervals had only two articles included in the sample.

![Figure 1. Average number of statistical techniques per article](image)

Several observations are of importance. When the data were aggregated over all publications, results suggest that the use of basic level statistical techniques has declined in all disciplines over time whereas the use of intermediate level and especially advanced level techniques has increased (Figure 1). In addition, the mean number of total statistical techniques used in articles has increased over the 16-year period from 2.24 statistical techniques per article in the first four-year period, 1970-1973, to 2.48 in 1974-1978, 2.70 in 1978-1981, and 2.75 in the last four-year period, 1982-1985. Since the late 1970s the use of sophisticated statistical techniques has increased in all three sites. Compared to the other two publication sites the research papers published in marketing related journals not only used the highest mean number of statistical techniques per article, but they also increasingly used advanced statistical techniques. The higher use of advanced statistical techniques in marketing related publications may be associated with the topics or issues studied as well as the types of
Conclusions and Implications

Made explicit in this review were the type and frequency of specific research methods and statistical techniques reported in the literature reviewed. Three primary implications were evident. First, the study provided clear implications for course content in graduate level research methods classes. Future professionals engaged in both education and research need to be familiar, if not comfortable, with the range of research methods in use. A basic knowledge of these methods and techniques is necessary for understanding and comprehending the literature (Goodwin & Goodwin, 1985).

Furthermore, this basic knowledge is a prerequisite to the development of a research design and the selection of appropriate data analysis procedures. In other words, in the process of planning and conducting research, a researcher should never find himself or herself compromising the scope of research due to his or her limited competence with certain research methods. One should always start with the formulation of a research question and then be able to seek the theoretically most desirable and feasible context within which that research question may be addressed, including a determination of the research method, data collection procedure, and statistical analysis of the data.

Adequate preparation in the use of research methods especially suitable to a specific discipline is frequently achieved through research methods courses in individual departments. This review indicated that an understanding of survey methods, experimental methods, and other methods including content analysis, participant observation, and archives is necessary for professionals concerned with the social psychological aspects of clothing. In addition, the shifts observed in the uses of research methods manifest a perilous presumption that a particular mode of research will be so prevalent and adequate that there is no reason for one to be aware of or familiar with other modes of research. One should always be alert to the fact that the more cognizant researchers are continuously experimenting with different and new modes of research to uncover the truth and also that different journals are willing to open up opportunities for the ingenious works of those more creative and explorative individuals. In other words, researchers and educators as well as future professionals should recognize that continuous growth is necessary and that the present base of knowledge is never adequate.

Secondly, the study provided clear implications for a minimum level of knowledge in statistical techniques. Needless to say, behind this particular implication stand similar views which have been discussed in relation to the first implication. Unlike research methods courses, training in statistical techniques is usually obtained from courses taken outside clothing and textiles department, for example in statistics, sociology, psychology, or education departments. The results of this review imply that an ability to understand the use of advanced techniques (e.g., multivariate statistical procedures which can accommodate repeated measures) is necessary. Appropriate preparation for a master's degree includes a minimum of at least one statistics course at the intermediate level and preferably an additional advanced level course as well. At the doctoral level, it is indispensable that students have a clear understanding of various statistical techniques including advanced level courses. Although a student's immediate necessities, such as the conduct of the doctoral dissertation, may not require proficiency with those statistics, it would be the faculty advisor's responsibility to ensure that the candidate has mastery over all three levels of statistical techniques. In addition, it would be wise for a prospective author to be aware of the levels and types of statistical techniques presented in particular journals before submitting articles to those journals. Lastly, the study also rendered an implication for faculty development. This implication is rather obvious when one of the previously acknowledged viewpoints is recalled. That is, growth must occur and what constitutes adequate knowledge in research methods and statistical techniques will not remain constant. Researchers and educators must be willing to invest in the continuous education of their research skills by diligent exposing themselves to recent developments in methodology and
statistical techniques, by attending special workshops or conferences, and by becoming involved in scholarly dialogues.

Beyond these three implications, the authors would also like to call the reader's attention to the impact of the types of research methods and statistical procedures on the development of theory in the social psychological aspects of clothing. First of all, researchers who are involved in the social psychological aspects of clothing should realize that more balanced distribution among different research methods would make greater contributions toward the body of knowledge in this field. In other words, as Huck, Cormier, and Bounds (1974) asserted, it is rather desirable to employ a variety of research designs and observational techniques in investigating a single behavioral phenomenon, in this case, the social psychological aspects of clothing. Huck et al. (1974) stressed that investigation of any one behavioral phenomenon should include a variety of research strategies with many combinations of the levels for each factor: type of research design (i.e., descriptive vs. experiment), form of data (i.e., quantitative vs. qualitative), and location of data collection (i.e., laboratory vs. field). The rationale for this argument is simply that no one design, methodology, or approach is too good or too powerful to be the only solution of the investigative process.

Yet, survey research methods have been used predominantly in studies of the social psychological aspects of clothing published in the clothing related publication sites, which are mostly reported by researchers in the traditional clothing and textiles discipline. Moreover, research instruments or stimuli used in the survey research were seldom used in more than one study. The Clothing Interest measure, which was originally developed by Creekmor (1971) and further validated by Gurel and Gurel (1979), was one exception (see Lapitsky & Smith, 1981; Miller, Feinberg, Davis, & Rowold, 1982; Perry, Schutz, & Ruck, 1983; Rowold, 1984). In many cases the validity and reliability of the instrument were not always established or reported. However, as Touliatos and Compton (1983) have bluntly put it, a final consideration of researchers and the bottom line in all investigations is the reliability and validity of the results produced by a study. If these issues are not properly treated, the contribution that the research may yield to the body of knowledge in that discipline is significantly diminished.

Another issue is raised concerning how some statistical analysis has been reported. For example, we all have learned that when most of the advanced statistical techniques are used, certain assumptions must be met for the use of the technique to be valid. To satisfy these assumptions the data must be tested to assure that the technique in question is appropriate for the condition of the given data set. In the reported research there were often no statements made indicating to the reader that the data met all the qualifying prerequisites for the use of an advanced statistical technique. Therefore, it is suggested that before hurling ourselves into the discussions of what we all are dying to remark on, namely, those "statistically significant results," authors should be more careful to address whether an adequate prelude to that analysis has been properly conducted and what implications that prelude might have on the analytical procedure.

In addition, many times in the literature reviewed it was difficult to decipher particular statistical techniques used in an analysis. For example, although this kind of problem has tapered off in recent studies, sometimes the statement was made that statistical significance was found or a hypothesis was supported without citing the statistical procedure. This made it difficult for readers to understand the reported results. Therefore, again, it is our suggestion that, first of all, authors should pay more attention to the details of what is being reported and how precisely a particular statistical procedure has been described. A problem of this sort can also be improved by more attentive and judicious reviewers or editors of the journals.

Research methods and statistical techniques are critical in the development of theory explaining the role of clothing in human behavior. Neither advanced techniques of statistical analysis nor any other particular type of statistical analysis is necessary for a study to be valid. Rather, as Reinharz (1979) emphasized, what is crucial is the need for social researchers to identify their values and biases and for
experience to become foundation of research. Considering the diverse backgrounds of the researchers involved in the social psychological aspects of clothing, both an interpretative mode of inquiry, loosely referred as the qualitative approach, and a critical science are surely worthy of adoption in future research.

References


Endnotes

1 Critical science is an alternative metascientific approach to creating knowledge based on assumptions about reality and human nature different from those underlying positivistic and interpretive inquiry (Williams, 1991). As Williams recapitulated, critical theory is built on the idea of social change for the better, on the connections between theory and practice, on the relations of knowledge claims to the satisfaction of human interactions and desires, and on improving human life, not merely describing it. See Comstock (1982), Fay (1987), and Guess (1981) for more.

Appendix

A complete list of articles used in this paper can be obtained from the first author. The following is a list of journals included in each publication site:

**Clothing Related Publications**
Canadian Home Economics Research Journal
Clothing and Textiles Research Journal
Home Economics Research Journal
Illinois Teacher of Home Economics
Journal of Consumer Studies and Home Economics
Journal of Home Economics

**Psychology Related Publications**
Adolescence
Developmental Psychology
Journal of Applied Psychology
Journal of Counseling Psychology
Journal of Personality and Social Psychology
Journal of Psychology
Journal of Social Psychology
Perceptual and Motor Skills
Personality and Social Psychology Bulletin
Psychological Reports
Sex Roles
Social Behavior and Personality

**Marketing Related Publications**
Advances in Consumer Research
Journal of Marketing Research
Journal of Retailing
New Directions in Methodological Approaches and Analyses

Leslie Davis Burns and Sharron J. Lennon
Oregon State University and Ohio State University

In identifying new directions in methodological approaches and analyses associated with social science aspects of dress, the authors of these papers provide insight and challenges to researchers who work in this area. This summary chapter will focus on common themes evident throughout this volume with particular emphasis on the papers in this section. We will attempt to draw conclusions and provide researchers with directions for future research with regards to methodological approaches, analyses, and refinements. We will also illustrate conclusions by using examples from current research in the field.

Boynton-Arthur and Loker acknowledge, and Kang-Park and Sieben document, that researchers studying social aspects of dress have relied primarily on the collection and analysis of quantitative data. Whereas quantitative data can be collected using a number of research methods, the most common approach taken in published articles in clothing related journals from 1970 through 1985 is survey methodology. In addition, Kang-Park and Sieben note the steady increase of the use of advanced statistical techniques by researchers over a period of fifteen years and conclude that graduate education, especially that at the doctoral level, should include a broad array of advanced statistics courses and a variety of research methods courses.

Although it is unrealistic to presume graduate students will become proficient in a wide variety of methods and techniques, proficiency in a selected few and exposure to others should be expected. In addition, researchers should not be satisfied with proficiency in the status quo. Today's researcher in the social aspects of dress must recognize the extent to which the field, and research knowledge in general, is in constant flux. For example, what may have been adequate graduate preparation in 1980 may be sadly outdated today. Thus it becomes necessary to recognize the importance of and welcome continual growth and change in a variety of types of data collection and innovative analysis techniques.

The collection and analysis of quantitative data as the predominant method used by researchers is most likely a function of the training received in research methods and statistics by many researchers in the field, the research questions studied, and the prevalence of relatively easy-to-use statistical software programs available on mainframe and personal computers. For certain research questions the collection and analysis of quantitative data through experiments or surveys may result in the most useful information to the researcher. However, issues of questionable external validity (Boynton-Arthur; Burns & Lennon) and measurement reliability (Burns & Lennon; Kang-Park & Sieben; Loker) pose potential limitations to the studies using these methods. Researchers are urged by Kang-Park and Sieben to clearly document the reliability and validity of their measurement instruments in their manuscripts. Indeed, limitations of quantitative techniques, the extent to which the data violate assumptions of statistical procedures, and the potential effect of these limitations on the results of the research must be addressed by researchers. When such limitations are not addressed, the integrity of the research may be questioned. In addition, researchers must use statistical techniques appropriately and interpret the results of these techniques in a suitable manner being careful not to "over interpret" or "over conclude" from the results.

Winakor calls attention to the inappropriate use and interpretation of demographic and socioeconomic variables used in Engel curves. She notes the need for researchers to understand and take into consideration interrelationships among variables commonly used in studying the relationship between expenditures on clothing and income. As Winakor states, "examining the effects of variables individually without recognizing their associations with others leads to conclusions
that are at best trivial and, at worst, false." Although Winakor was commenting on the use and interpretation of specific types of variables in a particular situation, her observation is one which might be made regarding quantitative techniques in general. For example, proponents of qualitative techniques may argue that the cultural context within which behavior occurs is an important variable which is often ignored (Boynton-Arthur; Loker), particularly in laboratory experiments, and which must be acknowledged when drawing conclusions and implications from such research. The importance of context as a variable affecting the social aspects of dress has been addressed elsewhere by scholars in our field (Damhorst, 1984-85; Kaiser, 1983-84; 1990; 1991; this volume).

In recent years many researchers, frustrated with inherent limitations imposed by the collection and analysis of quantitative data, have begun utilizing alternative methods for studying social science aspects of dress. In fact, Kang-Park and Sieben document a slight increase in the "other" category (including observation, content analysis, archival document analysis or any other method which was neither experimental nor survey) of research methods used by researchers in this area from 1970-1985. Although the most common recommendation by several authors in this volume has been for researchers to utilize methods for the collection and interpretation of qualitative data, other authors have introduced alternative methods and techniques, resulting in both qualitative and quantitative data, and challenged researchers to explore the use of these methods and techniques to investigate a broad range of research questions related to social aspects of dress.

Authors provide evidence for the use of these alternative methods and techniques for specific research questions. For example, the study of appearances in the comic strips, children's cartoons, television situation comedies, movies, and MTV videos offer indirect ways for researchers to infer information regarding the social aspects of dress in current and recent past U. S. culture (Lennon & Burns). Several examples of such research exists in our field (e.g., Damhorst, 1991; Kaiser, 1991; Lennon, 1990; 1991; Paoletti, 1985). Appearance information in literature can also be studied in analyses of characterizations (Lennon & Burns); however, no published research in our field of this type exists although it can be found in literary criticism (Collins, 1978; Hilfer, 1982; Joyner, 1983; Potvin, 1987).

Additional methods promoted by authors include the use of projective open-ended measurement instruments when the goal of the research is to examine individuals' perceptions of others (Burns & Lennon) and the use of ethnographic methods when the goal of the research is to better understand the symbolic, ideological and cultural use of dress and adornment (Boynton-Arthur). Other suggested interpretative strategies (Brannon; Cerny) including ethnographic techniques in conjunction with a semiotic perspective (Cerny) appear in a previous section of this volume.

Some perceived advantages to ethnographic methods (or qualitative methods in general) include a focus on action and behaviors, serendipity, and an affinity for investigating ideological constructs such as attitudes, values, and beliefs regarding gender (Boynton-Arthur). However, while it is true that much of the quantitative person perception studies in the social aspects of dress have focused on impressions and attitudes, it is also true that there is a large body of published research in the field which has focused on behavioral responses as a function of dress (e.g., Davis & Lennon, 1983; Hensley, 1981; Kaiser, Rudy, & Byfield, 1985; Lennon & Davis, 1989b). The value of these studies from a methodological perspective is that they allow researchers to measure what people really do rather than what people say they will do.

Serendipity is probably more likely to occur in conjunction with qualitative research than with quantitative research. Although it is true that quantitative (positivist, rationalist) researchers typically propose to study a relationship they expect to find, it is also true that serendipity can be a benefit of quantitative experimental research. For example, in a "serendipitous finding" of an experiment designed to study the dynamics of interpersonal attraction, Elaine Hatfield discovered that physical attractiveness was the best predictor of whether computer
selected dating partners liked each other. Although at the time, fellow psychologists called the results "theoretically uninteresting", Hatfield wrote up the results and an entire body of literature devoted to a greater understanding of physical attractiveness was launched (Hatfield & Sprecher, 1986).

Boynton-Arthur has also noted that ideological constructs such as gender are best studied qualitatively, because ideology flourishes beneath the conscious level. We would suggest that, more importantly, such concepts would be best studied unobtrusively, e.g., using projective techniques, observation, and/or media analysis, regardless of whether qualitative or quantitative data is collected. Indeed, it is possible that some types of qualitative data collection techniques might be inappropriate. For example, a researcher might interview subjects in order to investigate beliefs and attitudes toward gender. However, it is conceivable that (a) subjects might report the most socially desirable answer, (b) they might not be able to accurately report their attitudes and beliefs, or (c) they might not even be conscious of their attitudes and beliefs. It is also possible that gender could be investigated unobtrusively and analyzed quantitatively via a laboratory or field experiment in which behavior is measured, or through a content analysis of some type of media which is assumed to reflect social values and beliefs with regards to gender.

In an effort to encourage researchers to explore the utilization of qualitative data collection techniques, the authors only allude to the difficulties inherent in these data collection techniques specifically with regards to the assessment of the validity and reliability of qualitative data. Although Boynton-Arthur notes problems with reliability and validity of ethnographic research methods and lists the difficulties which address these problems, little attention is given to the time-consuming nature of data collection or the difficulty faced by ethnographers in collecting data which is as valid and reliable as possible. Similarly, Loker briefly discusses verification methods used during data collection and interpretation, but fails to emphasize the training needed to appropriately carry out these methods. For example, the recent popularity of focus group research may be due to the erroneous assumptions that focus groups are inexpensive, easy to plan and conduct, and that anyone can facilitate focus groups and interpret participants' responses. However, before researchers attempt new data collection methods, a full understanding of the method should be attained, including methods for acquiring valid and reliable data and for the documentation of these characteristics.

Although there may be increased interest among researchers in qualitative research (Loker), training in qualitative methods in textiles and clothing graduate programs has been limited primarily to the teaching of document/artifact research as a basis for studying historic textiles and costume. For appropriate collection and interpretation of qualitative data, students and educators must be trained in the appropriate research methods. Given the interdisciplinary potential of our field (Paloletti, 1991) and its advantages (Welters, 1991), we do a disservice to our graduate students by not requiring qualitative research methods as well as quantitative research methods.

It is a mistake to think that any particular type of research is so important that one need not be concerned with alternative types (Kang-Park & Sieben). In fact, several authors discuss the usefulness of triangulation of methods. For example, starting with the research question, "Who buys cotton sweaters?", Loker describes several approaches to data collection and interpretation including a combination of qualitative and quantitative techniques; and Burns and Lennon focus on content analysis (quantification) of written statements (qualitative data) regarding perceptions of individuals. Indeed, one advantage of working in an interdisciplinary field is that we are exposed to many methods of research in our journals and at our professional meetings. Together with Loker and Brannon we suggest multiple methods and multiple approaches to study the social aspects of dress. For example, Damhorst (1984-85) employed a projective technique to elicit open-ended responses based on dress cues which were then quantified and statistically analyzed. In our own research (Lennon & Davis, 1989b) we have combined a content analysis of open-ended responses and a content analysis of field observations with a field experiment to probe the effects of dress variations on customer service.
Kaiser and her colleagues (Kaiser, Rudy, & Byfield, 1985) combined interviews with observation to investigate the role of clothing in the social construction of gender. There are many other examples in our own literature of research which has combined methods and approaches (e.g., Damhorst, 1991; Davis, 1990; Kaiser, 1991; Lennon, 1991). It seems clear that there is no absolute correct or best way to study the social aspects of dress. However, techniques can be improved upon and refined. For example, there is reason to believe that the impressions formed as a function of appearance may vary according to the type of dependent measure used (Lennon & Davis, 1989a). Thus how we collect our data can affect our results as much as what data we choose to collect. We challenge researchers in the field to be open to change and to continually refine the methods and techniques used in their research.

References


Charting our Directions: Patterns for the Future

Shannon J. Lennon
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The study of the social science of dress\(^1\) is almost 50 years old. Much has been accomplished during those 50 years; we have established a body of literature within a number of publication outlets including the *Clothing and Textiles Research Journal*. In general, our research has become more sophisticated\(^2\) both methodologically and statistically, more complex\(^3\), and more interesting over the past 50 years. We have amassed a large body of research knowledge and, as a field, we can be very proud of this achievement. But this also means it is time to reflect upon the contributions made to the field and to society by our individual research efforts. The ideas in this paper come from our combined experiences conducting, reviewing, and editing research; teaching research methods; and working with graduate students.

In this paper we will present our roadmap for the future of research in the social science of dress. On a broad level we have identified trends which are likely to impact all research in our field. In the future, researchers who study social aspects of dress will need to (a) be open to multiple epistemologies, (b) articulate the contribution and significance of their research, and (c) demonstrate social responsibility in their research. From a more narrow social cognitive perspective we have also identified trends. Researchers who study dress and human behavior from a social cognitive perspective need to (a) move beyond showing that manipulations of dress affect behavior, (b) consider the use of methods other than survey and experimental, (c) pay more attention to issues of external validity, (d) consider contextual variables, (e) use more open-ended measures, and (f) use more multi-part studies.

**Multiple Epistemologies**

For a time, except for scholars studying past or non-U.S. cultural groups, *research* in our field meant empirical quantitative research. For many of us, graduate school courses in research methods only focused on empirical methods. Graduate students who are taught only one method will therefore have only one epistemology. This is a definite disadvantage to both graduate students and our future research. Fortunately, there is evidence in this volume and elsewhere (e.g., Hamilton, 1990; Hamilton & Hamilton, 1989; Littrell, 1980; Popelka, Fanslow, & Littrell, 1992; Sibley, Jakes, & Swinker, 1992) of the extent to which the study of social aspects of dress is informed by a broader perspective which includes interpretive analyses. It is our position that empirical and interpretive research can work well in tandem or partnership to help us better understand what *is*. While there are many types of empirical research and interpretive methods, each type has its own inherent limitations and advantages. By combining methods in a study or using different methods in programmatic research, we can minimize the limitations and exploit the benefits of each method. See Evelyn Brannon's discussion of the use of multiple methods in this volume. Phenomena in the study of social aspects of dress are complex. One epistemology, one way of knowing, can elucidate one facet of a phenomenon, but multiple epistemologies guiding multiple perspectives are much more likely to capture the essence of a phenomenon.

**Contribution and Significance**

Beyond producing research which is well-planned, analyzed appropriately, and is well-written, researchers today must be accountable for studying important questions. In addition, researchers must be able to articulate the significance of the research and explain the contribution it makes to the field. Reviewers often question the value of a particular piece of research and comment that authors need to
justify the extent to which their research advances the field. It is the responsibility of authors to clarify the extent to which their research efforts "fit in" and contribute to the larger picture. Assuming that all of us focus our research on what we believe to be significant issues, we need to be prepared to make a case for that significance.

The significance of our research can lie in the fact that it contributes to the solution of problems, advances theory, or informs decisions. These are all important outcomes of research, some of which the researcher must draw out for the reader. It is also important for an author to show connections between the current, past, and potential future research. Sometimes research simply helps us better understand puzzling behavior. For example, in an observational study of factors affecting customer service (Lennon & Davis, 1989c), we expected customer appearance to affect customer service. In the stores in which we observed, it did not. By later analyzing the store type, we realized that customers received good service in specialty stores and in commissioned departments of department stores. In another phase of the research a field experiment was conducted which confirmed the importance of salesperson incentives and customer appearance on customer service.

It is also important for authors of research to outline for us something we do not already know in their implications section. For example, research might be conducted to study style preferences and find that two groups differed in their preferences. However, to simply offer as an implication that retailers need to know their target customers’ preferences and need to target their advertising toward that customer group does not tell us anything we did not know before reading the research. It would be easy, for example, in a study of apparel advertising to state that the research implies that marketers need to be cognizant of the research results as they plan their strategies. We would certainly hope that marketers could use the research results, but it would be more appropriate to articulate strategies in the implications section. A good rule of thumb might be to ask if the implications could have been written before the research was conducted. If so, they are probably not truly implications of the research.

**Social Responsibility**

As researchers we need to examine the hidden assumptions in our research and consider the extent to which our research is ethnocentric or serves to reinforce stereotypes. For example, some of the early anthropological literature was ethnocentric and heavily value laden (e.g., Westermarck, 1921). Indeed, it is difficult to keep ethnocentric values from intruding, for example, when examining bride-burning practices in India. In fact, the very words used to describe such practices may reflect ethnocentrism. Therefore, it is important to evaluate the extent to which our social science research promotes ethnocentricity and to consider its effect.

As Jean Hamilton (1991) has pointed out, ethnocentrism can be adaptive and maladaptive. The adaptive side to ethnocentricity is that it promotes in-group pride because it motivates in-group members to achieve and maintain a positive self-image (Tajfel, 1981; Tajfel & Turner, 1979). Therefore, ethnocentrism can be good for the pride of in-group members, who could in reality be members of any cultural group. In 1947 Clark and Clark published the now well-known research which studied young children's preferences for black or white dolls. The authors found that approximately 60 or more percent of black children thought that the white doll was the nice doll, had a nice color, and preferred to play with the white doll. This study demonstrates in-group derogation, the reverse of ethnocentrism, and has been found for other minority or subordinate groups (e.g., Milner, 1975; Giles & Powesland, 1976). Since then many studies have found that groups who once practiced self-derogation do so no longer (Hraba & Grant, 1970; Berry, Kalin, & Taylor, 1977; Vaughan, 1978; Giles & Powesland, 1976). In other words, their ethnocentrism has been restored. This is important because at least one replication of the doll study (Ward & Braun, 1972) shows that black children who prefer black dolls have higher self-esteem than those who prefer white dolls. These examples illustrate the extent to which it might be socially responsible to promote ethnocentrism in research which studies cultural groups, U.S. sub-cultures, and consumer
cultures and their distinctive appearances. In effect, this is what Rita Freedman (1988) is doing in her work with women, many of whom are not large sized, with body image disorders. She helps them build self-esteem by becoming more accepting of their appearances, rather than by trying to change their appearances to match society's standards.

Our appearance research can easily perpetuate ethnic, social class, or other appearance related stereotypes. For example, assume that we want to study the effects of appearance on accuracy of eye-witness accounts of a crime. If in this study we used pictures of black males as the hypothetical "criminals" to serve as our stimulus materials, we would be communicating a negative racial stereotype to our subjects. We need to be aware of these possibilities and be careful to develop socially responsible stimulus materials. By developing stimuli which are easily identified using popular stereotypes we are actually reinforcing those stereotypes. One study investigating judgments about large sized individuals experimentally manipulated "large sized" by stating that the stimulus person weighed 350 pounds. Fortunately, this research was generated from another field, but what is the point of such an extreme manipulation other than to create a manipulation that will "work"? A more subtle and realistic manipulation would have been more informative and may have served to define boundary conditions of the phenomenon.

We can also structure and reinforce appearance stereotypes through our dependent measures. First of all, by providing stereotypic category exemplars we are suggesting descriptors to subjects which they might not have generated on their own, but due to the provision of the categories, cannot get "out of their minds." See Davis and Lennon (1988) and Lennon and Davis (1989b) for discussions of this point. In this manner we are actually helping our subjects make stereotypic judgments. Even more pernicious, we may have suggested categories that our subjects would never have used, but now will use to categorize persons similar in appearance to the stimulus person. In this case we might be responsible for the diffusion of a stereotype. To actually measure stereotypic thinking, it is advisable to use open-ended measures so that subjects can describe their own thoughts and perceptions in their own words.

Because of the nature of our work with cultural categories, it is natural for us to investigate stereotypes of women, ethnic groups, and sexual assault victims. Instruments specifically developed to measure these stereotypes need to be used with care; e.g., Attitudes toward women (Spence, Helmreich, & Stapp, 1973), Quantitative measure of ethnic stereotypes (McCauley & Stitt, 1978), and Rape myth acceptance scale (Burt, 1980). When subjects complete such instruments, the content of the scale items may be stored in memory to be retrieved at a later time. For example, a person who has recently participated in research about rape myth acceptance might remember the content of the myth if called for jury duty in a sexual assault trial, but not remember that it was a myth. Therefore, when using these instruments it becomes especially crucial to debrief the subjects (i.e., explain the nature of the research and any manipulations). Although most of us debrief our subjects, we do not always report it in our work; we need to do so.

Social Cognition and Dress

For those of use who investigate dress from a social cognitive perspective, we believe it is time for us to move beyond demonstrating that yet another appearance manipulation affects impressions and behaviors. These types of studies usually report how variations in appearance affect judgments and then continue to discuss what those judgments mean. The problem is that those judgments, in and of themselves, might not mean anything of significance. Tomorrow the judgments might be different than they are today and in a different context they will most surely be different. Many of these appearance manipulation studies seem to simply use appearance cues that are effective in influencing some judiciously chosen dependent variables.

It will always be possible to design manipulations which will be "strong enough to work." Experimental manipulations are powerful in terms of the amount of variance they account for in the dependent variable because they allow
the researcher to create variance. On the other hand, when similar variables are measured in more realistic situations, variables representing the same abstract concept may not be so powerful. Experimental manipulations are valuable especially because they allow us to assign causality to some extent and formulate models of behavior. However, they are often unrealistic and are always bereft of context if not experimentally provided. Therefore, as we move beyond the first stages of social cognition research related to dress (Damhorst, 1991), it is desirable for our research to do more than find yet another manipulation of appearance which affects impressions, judgments, attributions, or behaviors.

It is also possible to study people and their appearances through non-experimental and non-survey methods. The use of alternative methods might serve to provide a new perspective to our literature which is now primarily informed by survey research or laboratory and field experiments. In an earlier chapter we discussed several methods for measuring social perception. Content analyses of existing forms of communication might be especially useful for studying perceptions of appearances in media such as television programs, movies, children's stories, comic strips, catalogs, family and yearbook photos, and television, newspaper, and magazine advertisements. Typically content analyses are performed by a few coders who reliably code content into meaningful categories. Beyond content analysis, there are other useful ways to study appearances in the media. For example, Susan Kaiser took a person perception approach when she studied appearances and gender in children's television cartoon characters (Kaiser, 1991). In this research a group of subjects evaluated a series of cartoons, not as a content analysis, but as a type of cartoon character perception. By studying appearances in the media we can measure the extent to which media gatekeepers perceive and stereotype appearances.

Our research can also be criticized for its lack of external validity. External validity of research is the extent to which research results can be generalized to other situations, times, and people. Research is more generalizable when the sample has been randomly selected from the population under study. However, this rarely happens in field and laboratory experiments. In order to increase generalizability, Kerlinger (1965, p. 303) suggests replicating experiments. Scherer and Ekman (1985, p. 25-26) also suggest replications using students and at least one group of non-student adults as a means of increasing generalizability. It would be a simple matter for appearance researchers to replicate research using more than one group of students. It would be only a bit more difficult to find a group of non-student adults to participate in our research. The increased external validity would be well worth the effort. We need to improve our research in this way.

Another way to increase external validity which, although relevant to appearance research, is seldom used, is stimulus sampling (Fontenelle, Phillips, & Lane, 1985). Stimulus sampling occurs when more than one instance of each appearance manipulation is used. For example, if we wanted to vary garment fashionability (fashionable, unfashionable) we might use three fashionable garments and three unfashionable garments. If clothing stimuli are to be presented on human models, then we need to use more than one model since any effect could be caused by the clothing manipulation, or the interaction between the clothing manipulation and the model wearing the clothing. For example, we know that a model's age and body type affect judgments of her garment's fashionability (Lennon & Clayton, 1992). The use of stimulus sampling statistically introduces more error into the research and usually makes the denominator of the F ratio larger than if only one manipulation were used. Although using stimulus sampling makes it "more difficult" to achieve a significant effect, we can be more confident that any significant effects are due, in fact, to the clothing variable. It is likely that anomalous findings are more a function of the fact that stimulus sampling was not used in the research than that the research hypotheses were erroneous.

Another recommendation we have for researchers investigating appearance manipulations is to use between subjects designs when conducting experimental research. In a between subjects design each subject evaluates only one appearance manipulation.
The problem with this situation is that when using this design with several independent variables, it is necessary to have a large subject population. In recruiting subjects, it can be very costly to provide incentives for the large number of people needed for a complex between subjects design. However, the important advantage of this design is that it permits random assignment to treatments. Random assignment is critical for internal validity and control (Campbell & Stanley, 1963, p. 23; Kerlinger, 1965, p. 291-292; Kidder & Judd, 1986, p. 144) which is very important in experimental research. Some randomization is possible with mixed designs, randomized block designs, and Latin Square designs; however, none is possible when using within subject designs. For this reason, unless the research focuses on investigating changes in an individual's judgments or behavior, we recommend the use of the between subjects design with large numbers of subjects.

Experimental dress research conducted from the cognitive perspective can be validly criticized for its unrealistic nature. One of the reasons experimental research has such high internal validity is precisely because it strips away any and all possible variables other than the independent variable which could possibly affect the dependent variable. Therefore, experimental laboratory research is usually bereft of context, while field experiments are much more realistic. The time has come for us to ground our laboratory experiments in a context (e.g., Damhorst, 1984-85; Rees, Williams, & Giles, 1974). See Susan Kaiser's discussion of the importance of studying contextual factors in this volume.

Nearly all of our research studying dress variables, both survey and experimental, has used close-ended measures. Our research (Lennon & Davis, 1989a) shows that when provided with Likert type scales subjects will use them with relatively equal frequencies. However, when given the opportunity to use open-ended measures, subjects' responses are often very different than when using the closed-ended measures in terms of the categories used. By using closed-ended measures we are suggesting characteristics to subjects that they might not have generated on their own and which, in a more realistic situation, might be unimportant to them.

Sometimes demonstration studies, studies which use closed-ended measures, and studies with little external validity can make an important impact by being published together. We do not often see in our literature research in which several studies are reported in one article, although it is fairly common in the social cognition literature (e.g., Rosch, Mervis, Gray, Johnson, & Boyes-Braem, 1976; Neuberg & Fiske, 1987). Certainly, it is natural for us to try to maximize the number of publications we can extract from each research project. However, we can partition our research into such insufficient pieces that the resultant manuscripts are trivial and meaningless. If a combination of those pieces are submitted as one manuscript with Study 1, Study 2, and Study 3, for example, they may represent an important piece of work whereas separately they may be only marginally publishable or even unpublishable. In other words, the significance of the research might come from the combined results, rather than from the separate results when combined. Consider, for example, a researcher interested in special market segments, such as pregnant women. Appropriate research might include (a) a survey of pregnant women's attitudes toward shopping and patronage behavior, (b) a mall intercept study of pregnant women to study actual shopping and actual patronage behavior, (c) an impression formation study in which raters visit and rate maternity stores, (d) interviews with retailers of maternity wear to get their ideas about their customers and their stores, or (e) a content analysis of magazine advertisements for maternity wear. All of these types of studies would provide information regarding maternity wear customers and the stores in which they shop. Taken individually, these studies might not have the critical mass necessary to be publishable. Yet combined in groups of two or three, they might make important contributions to the literature. In addition, there is a movement in higher education to focus on quality and impact of research programs, rather than quantity of research, in promotion and tenure decisions. Because of this we encourage researchers to conduct, write and publish meaningful and significant research.
Conclusions

We belong to a field with an unquestionably fascinating subject matter. Our research has progressed in the past 50 years and needs to continue to do so. Broad issues facing us in the social science of dress include the need to adopt multiple epistemologies, to show the significance of our research, and to be socially responsible researchers. Dress and human behavior researchers operating within a social cognitive perspective also must be flexible and open to change. Specific issues facing us include the need to (a) move beyond studies showing that appearance affects behaviors, (b) use non-experimental methods more often, (c) take steps to assure external validity, (d) use more between subjects designs, (e) ground experimental research in a context, (f) use more open-ended measures, and (g) consider the use of multi-part studies. As we address these challenges we are confident the path of research in next 50 years will lead us to a greater understanding of the social science of dress.

References


Endnotes

1 In general, in this paper dress is used in the sense of Roach and Musa (1980). However, sometimes appearance is used when, because of the context, dress might be interpreted to mean a woman's garment. Clothing is used occasionally to mean a generic garment or garments.

2 Compared to some of the very early research in the field, today's research is often more organized and planned and uses more sophisticated and elegant designs. However, some of the pioneering work done by Anna Mary Creekmore and her students and colleagues was very elegant. Certainly there is more computer software available to researchers today to make statistical analyses possible that had to be computed manually until about 25 years ago. Furthermore, new and sophisticated statistical procedures are developed (practically) daily which solve many problems with data sets; e.g., heteroscedasticity.

3 More complexity in research is not necessarily better. It is easy to envision empirical research which has so many independent and dependent variables that their effects and interactions are not interpretable.
Appendix I: Registered Participants

Sociological and Psychological Aspects of Dress

ACPTC Post-Conference Workshop

October 28-29, 1989

Carolyn Balkwell
Dorothy Behling
Brenda Brandt
Evelyn Brannon
Hilda Buckley
Carolyn Callis
Joyce M. Camacho
Catherine Cerny
Mary E. Cotton
Jane S. Craig
Anna M. Creekmore
Mary Lynn Damhorst
Leslie L. Davis
Marilyn DeLong
Lois E. Dickey
Joanne B. Eicher
Betty L. Feather
Judith Flynn
Shirley E. Friend
Yasuharu Fujiwara
Susan Geringer
Kay S. Grise
Virginia Gunn
Jean Hamilton
Barbara Harger
Ruth Hawthorne
Francesann Heisey
Sandra S. Hutton
Kim K. P. Johnson
Susan Kaiser
Jikyeong Kang-Park

Diane S. Knoll
Michelle B. Kunz
Yoon-Hee Kwon
Jane A. Lamb
Myung Sook Lee
Sharron J. Lennon
Charlene Lind
Mary Littrell
Suzanne Loker
Marcia Malmfeldt
Michelle Morganosky
Richard Nagasawa
Billie Oakland
Nancy J. Owens
Mary Ellen Roach-Higgins
Margaret Rucker
Susan Shimoff
Wanda A. Sieben
M. Sue Stanley
Ann E. Stemm
Pamela Stoesse1
Lucille Terry
Carolyn Thomas-Flowers
Phyllis Torlora
Phyllis Touchie-Specht
David J. Trayte
Jeline H. Ware
Gloria Williams
Geitel Winakor
Jane E. Workman
Appendix II: Workshop Program

Sociological and Psychological Aspects of Dress

ACPTC Post-Conference Workshop

October 28-29, 1989

Saturday, October 28

1:00-2:45 CULTURAL CONTEXT


2:45-3:00 SNACK BREAK

3:00-5:00 SPECIFIC THEORY APPLICATIONS

Catherine A. Cerny, *Semiotics: A Perspective on Dress and Identity.*

Evelyn L. Brannon, *Affect Versus Cognition: What Do Consumers Know and How Do They Know It?*


Jane M. Lamb, *Physical Disability as an Aspect of Appearance.*

5:00-5:15 BREAK

5:15-6:30 THEORY DEVELOPMENT

SUNDAY, OCTOBER 29

8:45-9:00  EYE-OPENER BUFFET BREAKFAST

9:00-10:15 QUALITATIVE METHODS

Linda L. Boynton, *Ethnography and Grounded Theory in Clothing and Textiles Research*.¹

Suzanne Loker, *Using the Qualitative Research Process*.


10:15-10:45 NEW APPLICATIONS


10:45-11:00 BREAK

11:00-12:30 REFINING QUANTITATIVE APPROACHES

Geitel Winakor, *Analysis of Clothing Data in Social Science Research: Some Suggestions*.


¹ Linda Boynton did not attend and deliver her paper at the workshop. However, Susan Kaiser presented some information from that paper at the workshop.