

THE EFFECT OF MOMENTARY TACTILE CONTACT  
BETWEEN INTERACTING STRANGERS  
ON THE RECIPIENTS' IMPRESSIONS OF PEOPLE AND INSTITUTIONS

by

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Submitted to the Institute for Graduate Studies in  
Social Sciences in Partial Fulfillment of  
the Requirements for the Degree of  
Master of Arts  
in  
Social Psychology

Bogazici University Library



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Boğaziçi University

1984

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## A C K N O W L E D G M E N T S

I wish to acknowledge my sincere gratitude to Dr.Ayhan LeCompte for his most valuable advice and continued guidance without which this study could not have been completed.

I wish to express my sincere appreciation to Dr.Ayhan Koç and Doç.Dr.Muzaffer Bodur for their careful and constructive review of the final manuscript.

I would like to thank my husband Jak Levi, without whose support and understanding it would not have been possible to devote the time and effort required for completing this study.

Finally, I wish to thank Şalom Maya for his help in the computer work and all the data collectors for their participation in this study.

## A B S T R A C T

The purpose of this study is to investigate the effect of momentary tactile contact, between interacting strangers, in a functional/professional situation, on the recipients' affective state and evaluative responses.

The research was conducted in the library and the supermarket on the campus of Bosphorous University. The tactile interaction in the present study occurred when data collectors either touched or did not touch a student while leaving the library/supermarket. At that time the respondent was handed a questionnaire containing items to be rated about the institutions she/he had just left. As this touch is not unduly intimate and does not lend itself to being interpreted as a negative message, it was hypothesized that a momentary touch between interacting strangers would be experienced as a mildly pleasant stimulus, and that it would arouse positive affect. It was also predicted that the positive affect would be generalized to positive evaluations of the associated stimuli, namely, the personnel and the environment.

A 2 (touch-no touch) x 2 (sex of data collector) x 2 (sex of subject) Anova was performed on the data, testing the effects of contact, sex of data collector and sex of subject. The library data revealed no significant effects related to touch. The supermarket data, on the other hand, revealed significant effects for the evaluations of the affective state and for the ratings of the personnel. No significant main effect for touch was revealed. However, the effect of touch was observed in a three way interaction (touch x sex of data collector x sex of subject).

It was found that, in general, female subjects experienced more positive affect, and their evaluations of the supermarket personnel were more positive than that of male subjects'. Female data collectors tended to produce more positive evaluations of the personnel than male data collectors.

The most positive affect was experienced by female subjects interviewed but not touched by female data collectors. Evaluation of the supermarket personnel was most positive when female subjects were interviewed but not contacted by female data collectors.

In the contact condition, the most positive affect experienced was one in which female subjects were touched by male data collectors. The evaluation of the supermarket personnel was most positive, in the contact condition, when

female subjects were touched by male data collectors.

The most negative evaluations, throughout the study have occurred when male subjects were contacted by male data collectors.

This present study on the effect of touch emphasized the importance of the functional perspective, in which a nonverbal behavior is not analysed in isolation, but in accordance with other variables. In this study, the characteristics of the setting in which the touch stimulus occurred proved to be an important determinant of the meaning attribute to touch. The fact that the library data yielded no significant results, whereas the supermarket data revealed significant three way interactions, showed that the effect of touch varied according to the perceived characteristics of these two institutions. The effect of the touch was accentuated by the difference in nature between the two settings, yielding significant results for the supermarket.

## I N T R O D U C T I O N

The purpose of this study is to investigate the effect of an interpersonal touch on the receipient's affective and evaluative reactions.

"We often talk about the way we talk, and we frequently try to see the way we see, but for some reason we have rarely touched on the way we touch" (Morris, 1971).

How do people communicate? By means of language is the immediate answer that comes to mind. Yet, language, or verbal utterances are only one of the many ways to communicate. There also exists a nonverbal dimension through which communication takes place. These two dimensions are usually engaged to form a broader dimension, so-called communication.

The nonverbal dimension of communication, may be briefly listed as including facial expressions, gaze, gestures and bodily movements, posture, bodily contact, proxemics, clothes, physique and other aspects of appearance, and paralanguage (Knapp, 1978). Each of these may be subdivided into a number of further variables, which may serve to repeat



contradict, substitute or complement verbal communication. The nonverbal dimension of communication is important because of the role it plays in the total communication system. The absence of nonverbal signals seem to make the verbal dimension of communication less powerful.

There has been a great deal of research in this area in recent years. However, as a scientific area, the nonverbal dimension of communication is still in its infancy. There is yet much that has to be explored and learned. The important point that needs to be emphasized here is that, the goal of research in this area is not achieving power over one's companions by unraveling the factors effective in their secret thoughts. However, as with all scientific research there is the danger that new knowledge can lead to forms of exploitation of the ignorant by the knowledgeable, but in this case there is perhaps a greater chance that it can instead be the source of increased tolerance. To understand the significance of another man's actions is to gain an insight into his problems; to see what lies behind his conduct is perhaps to forgive it, where previously one would have attacked it.

Findings of nonverbal research are of great theoretical interest to behavioral and social scientists, and have a number of important applications. Systematic research in nonverbal behavior in social interaction can be said to have been analysed from two major perspectives; 1- the channel perspec-

tive in which only a particular nonverbal act is focused and 2- the functional perspective in which a nonverbal behavior is analysed, not in isolation, but in accordance with other variables (Edinger and Patterson, 1983).

Nonverbal signals may be analysed in purely physical terms but their importance is largely in terms of their meaning to the sender and the receiver. The labelling of any particular physical act is dependent on the sender, the receiver and the situation (Argyle, 1975). Nonverbal signals are usually given overly specific psychodynamic meanings. For example, the act of touching an inanimate object can be interpreted, by a clinically-oriented observer, as a signal of a plea for understanding. The approach implies that specific physical acts usually communicate specific intentions. Giving psychodynamic meanings to nonverbal signals amounts to ignoring the influential role of cultural, social, economical and political processes in human behavior (Schefflen, 1972). Thus, it may be concluded that the label given to a particular physical act depends on culture, situation, sender and observer.

#### TOUCHING BEHAVIOR

Touch, a way of communicating nonverbally, is an important stimulus in interpersonal social exchanges. Although a great deal of research has been done in the area of nonverbal behavior, touch is the least investigated domain. As Sunar and

LeCompte (1977) have hypothesized, it may be because of the fact that interpersonal touch has been a tabooed area. This line of reasoning is also implied in the following quotation from Henley: "...touch is a privilege, perhaps one to be sought and shared with those closest to us, but to be carefully guarded from strangers" (Henley, 1977, p.98).

Of all the senses, touch is the earliest to be formed and is the most crucial determinant of the healthy behavioral development of the individual (Montagu, 1971). The effects of early tactile stimulation have been investigated with infant animals in experimental research. Levine (1960) has reported that both painful shocks and gentle handling enhanced the development of normal stress responses in infant animals, and that the absence of such treatment led to behavioral disorders when the animal matured. Investigators have found that early contact and handling were not only beneficial but even essential to the intellectual, emotional and social growth of animals. Denenberg and Rosenberg (1967) have reported that the handling of female rats in infancy affected the activity and weaning weight of their grandchildren.

Studies on the effects of touch on adults have found that adults reacted in many varied ways to being touched. The act of touching elicited positive reactions as well as negative ones. People, when touched, sometimes felt warmth, comfortable, calm or relaxed and other times became uptight,

anxious or uncomfortable, and sometimes got aggressive. The underlying factors which make the act of touch meaningful are manifold depending on part of the body being touched, the intensity, duration and frequency of the touch, the communicators' ages, sexes, stages of relationship and socio economic states, the environment, current cultural dictates, and personal experiences related to touch in growing up (Knapp, 1978).

Although the act of touch in nursing (in hospital contexts) is expected to have a positive meaning, Johnson (1965), who has approached the issue of touch from both theoretical and applied perspectives, argues that the meaning of touch varies to both patient and nurse depending on culture background and maturity.

Touching behavior is generally used to communicate interpersonal attitudes such as closeness, like and dislike, intimacy, sexuality, expressions of emotions etc. Hesling (1974 cited in Knapp, 1978), categorized the various types of touching according to the messages communicated, from very impersonal to very personal as: (1) Functional/professional, (2) Social/polite, (3) Friendship/warmth, (4) Love/intimacy and (5) Sexual arousal. According to Edinger and Patterson (1983), touching behavior in the service of the above categories would simply be named as the intimacy continuum. Liking, love, concern for another person would be on the positive end of this continuum, while intense dislike or hate

would be representative of the negative end of the continuum.

Henley (1977), however, claims that there exists another side to interpersonal relationship which is the element of status, power, dominance and superiority. If Heslin's categorization mentioned above is the horizontal dimension of interpersonal relationship; according to Henley, the vertical dimension is the power, status, dominance relations which are so important yet very much neglected. In Edinburg and Patterson's (1983) terminology, Henley's vertical dimension is parallel to the so called social control function a major determinant of nonverbal exchange.

Patterns of nonverbal involvement, analysed in the functional perspective, in the service of the social control function, have been reviewed by Edinger and Patterson (1983), in the following categories: a) Status, power and dominance, b) persuasion, c) feedback, reinforcement, d) deception and e) impression management.

Results of the studies related to touch in the area of status, power and dominance can be summarized as follows: touch was found to be initiated more by older persons than by younger persons, more by males than by females and more by individuals of higher socio-economic status than by individuals of lower socio-economic status. In addition, people expected to be touched while being advised rather than while giving advice, while being ordered rather than while giving an order and while being persuaded rather than while attempting to

persuade (Edinger and Patterson, 1983).

Unlike other forms of nonverbal behavior such as eye contact or proxemics, which occur in almost all interactions, naturally occurring touch between strangers in casual interactions is rare. This makes touch a difficult behavior to be observed in the laboratory. In most experimental research, touch is an independent variable. This methodological problem may serve as an explanation for why touch is the least investigated domain of nonverbal behavior. As a result of this, most of the researches on touch have either used self-report studies in which subjects are generally asked to recall the extent to which they have touched or have been touched by specific others on various regions of the body, or observational studies, in which the frequency and correlates of touching behavior are coded by observers (Henley and Mayo, 1981).

Most existing research have examined affective or evaluative reactions to brief touch from a stranger. Studies, in the service of the social control function, in the area of impression management, show that moderate levels of touching give rise to favourable impressions while extreme levels of touching cause the formation of negative impressions (Edinger and Patterson, 1983).

As the preceding review has demonstrated, psychological research on touch is still in its infancy. There is yet much

to be learned and explored on touching behavior. The intention and meaning recipients attribute to touch and the way in which their affective and evaluative reactions are effected by this touch seem to be important mediating variables. Considering the ambiguity of touch, the context and the setting in which it occurs may also be important in determining the meaning attributed to touch. The assessment of these variables may clarify many aspects of reactions to touch. Findings of research directed toward measuring those variables thought to mediate reactions to touch, may be generalized to many social interactions in various settings. For example, the result of such research may serve the purpose of improvement and betterment of interview techniques.

Given this point of view, the question "why not investigate touch" should make more sense than the question "why investigate touch".

#### TURKEY AS A VENUE FOR THE PRESENT RESEARCH

There is evidence for believing that Turkish culture is one of high contact rate (Sunar and LeCompte, 1977). Contrasting results of research on touching behavior in Turkey with the results of research conducted in other countries might provide interesting findings. Anecdotal reports suggest American culture to be a noncontact one (Knapp, 1978). Results of studies in Turkey (a high contact culture), might provide interesting contrast with previous research, such as those conducted in

America (a noncontact culture).

There is lack of information on the possible biasing effects in interviewing techniques. If touch among strangers has an effect on the recipient, the interviewers should be well aware of such a fact. The effect of touch on the recipient might be used to bias the interviewee in the desired direction.

Findings of research in the area of touching behavior may be generalized to many social interactions. All professional relationships in the service sector such as doctor - patient, hairdresser-customer, tailor-customer etc, fall into the domain of various social interactions to which findings of research on touching behavior may be generalized.

The presence of a brief touch in social exchanges can have a substantial effect on impressions. A study by Fisher, Rytting and Hesling focused on the effect of an unobtrusive interpersonal touch on the recipient's affective and evaluative reactions (Fisher, Rytting and Heslin, 1976). In this study, subjects were either touched or not touched by a university library clerk while checking out a book. They were then asked to participate in an evaluation of the library's personnel and facilities. The results indicated a significant main effect for touch, showing that subjects who were touched rated the clerk significantly more positively than those who were not touched. In addition a nearly significant touch x sex



of subject interaction showed that the difference was most evident for female subjects. Furthermore, males who were touched evaluated the library environment less positively than no-touch males, whereas females who were touched evaluated the library more positively than no-touch females. These effects occurred regardless of the sex of the toucher or whether or not subjects were aware of the touch.

The present study, similar to the one mentioned above, aims at investigating the effect of on unobtrusive touch (of a very short duration) in a professional/functional situation on the recipients' affective and evaluative reactions.

The expectation was that the presence of an unobtrusive interpersonal touch in social exchanges would have a positive effect on the recipient. The positive effect, was also expected to be generalized to associated stimuli. The study was conducted in Boğaziçi University library and its supermarket. Therefore, the positive effect of touch was expected to be generalized to associated stimuli such as the personnel and environment. It was hypothesized that momentary tactile contact between interacting strangers would produce favourable impressions.

Bearing in mind the cultural differences between America and Turkey, the effect of touch was not expected to be as strong as in the Fisher, Rytting and Heslin's (1976) study. Touch was expected to produce positive impressions on the

recipients. The effect of touch was expected to vary according to the sex of the data collector and the sex of subject. However, no specific directional predictions were made.

If the notion that momentary tactile contact between interacting strangers produces favourable impressions, as presented in the Fisher, Rytting and Heslin's (1976) study, were proven to be tenable, it could be generalized to various social interactions among strangers in similar settings. In a much broader sense, the findings may also be generalized to cultures other than western European.

The operational hypothesis tested in this study is the following. The presence of an unobtrusive interpersonal touch in social exchanges has a positive effect on the recipient's affective and evaluative reactions of people and institutions.

## M E T H O D

The study was conducted in two different settings on the campus of Boğaziçi University, in the library and in the supermarket. This was done due to the expectation that the findings would be similar in these two locations, which would thus serve as a reliability check.

### SUBJECTS

191 students (59 females and 132 males) leaving The library and 137 students (71 females and 66 males) leaving the supermarket served as subjects.

A pilot session of the touching condition was carried out in a research methods class, at the end of which ten students (six females and four males) were selected to serve as data collectors.

Data were collected on six consecutive days. Data collectors attempted to interview every person leaving the library/supermarket during a specific time period. However, some subjects refused to fill out the questionnaire (about 45

people). The rate of refusal was higher in the library than it was in the supermarket. Hurrying for a class or having to read some material very urgently were excuses most commonly given so as not to fill out a questionnaire. In addition the last page of the library questionnaire was omitted by some subjects. Compared to the library, the supermarket questionnaires seemed to be filled out by the subjects more willingly and enthusiastically.

#### MEASUREMENT INSTRUMENTS

The presence or absence of a momentary touch was the independent variable while the subject's affective states, their evaluations of the library/supermarket personnel and their evaluations of the library/supermarket environments were the three conceptually related dependent variables of the study. Data on dependent variables were obtained through a questionnaire. The subjects' evaluative reactions were rated on three different sets of seven point graphic rating scales which were: (1) A set of scales to measure subjects' evaluations of their own affective states at that very moment; (2) A set of scales to measure subjects' evaluations of the library/supermarket personnel; (3) A set of scales to measure subjects' evaluations of the library/supermarket environments (Copies of the questionnaires are enclosed in the Appendix B).

Each of the three sets of semantic differential scales

consisted of six evaluative bipolar adjective pairs. Each pair was presented to the respondents at opposite ends of a line divided into seven equal parts. The bipolar adjective pairs were obtained from tables presented in "Cross Cultural Universals of Affective Meaning" by Osgood, May and Miran (1975). This book is a collection of the cross culturally correlated reactions to certain bipolar scales. In this book, findings related to Turkey are taken from Cuceloğlu's (1973) publication. The Turkish versions of the scales utilized in this study were obtained from this publication.

Evaluation of affective state. Six scales were employed in the measure of the affective state, namely good-bad (iyi - kötü), unpleasant-pleasant (nahış-hoş), positive-negative (olumlu-olumsuz), sad-happy (üzgün-sevinçli), beautiful-ugly (güzel-çirkin), comfortable-uncomfortable (rahat-rahatsız). Responses to each of these items were summed to yield a total score of affect.

Evaluation of the library/supermarket personnel. Six scales were employed in the measure of the personnel, namely "bad-good (kötü-iyi), pleasant-unpleasant (hoş-nahış), negative-positive (olumsuz-olumlu), friendly-unfriendly (dostça-dostça olmayan), useful-useless (işe yarar-işe yaramaz), not helpful-helpful (yardımcı olmayan-yardımcı). Responses to each of these items were summed to yield a total score of evaluation of the personnel.

Evaluation of the library/supermarket environment. Six scales were employed in the measure of the environment, namely "bad-good (kötü-iyi), pleasant-unpleasant (hoş-nahoş), negative-positive (olumsuz-olumlu), clean-dirty (temiz-pis), comfortable-uncomfortable (rahat-rahatsız), tasteless - tasteful (zevksiz-zevkli)". Responses to each of these items were summed to yield a total score of evaluation of the environment.

In the pilot study, each set of scales consisted of eight evaluative bipolar adjectives. It was observed that subjects lost interest going through the items and there were complaints about the questionnaire being too long and too time consuming. For this reason, the number of evaluative bipolar adjectives in each set of scales were reduced to six.

The item "positive-negative" (olumlu-olumsuz) in each set of scales and the item "friendly-unfriendly" (dostça - dostça olmayan) in the evaluation of the library/supermarket personnel scales have been obtained from the scales used in Fisher, Rytting and Heslin's study (1976). Factor analysis performed on each set of scales have shown that these items correlate with the others which have been obtained from the semantic differential scales (Osgood, May and Miran, 1975).

To prevent a subject with a positive attitude from simply checking either the right or left-hand side of the scales without concentrating on the items, the negative

adjectives sometimes appeared on the left side of the scale and sometimes on the right. For purposes of simplicity, in coding, all scales were re-arranged such that all the positive adjectives appeared on the left side of the scale and all the negative ones on the right side; thus all scores ranged from one (the most positive rating) to seven (the most negative rating).

The last sections of the library/supermarket questionnaires consisted of some general questions about these settings. This section was included in order to present the library and the supermarket, some general information of how those two settings were evaluated by the students. The study also aimed at contrasting evaluations of the old library with those of the new library. Findings were thought to be of use to the general management of the library. Frequency distributions were employed in grouping the data on this section descriptively.

#### PROCEDURE

Data collectors who were blind to the experimental hypothesis were trained to behave in a standardized manner in both the touch and the non-touch conditions, so as to keep all aspects of their behavior, other than touch, constant. They were also trained to touch in a uniform manner and for the same duration. The standardized touch consisted of the data collector placing the back of her/his hand in the

subject's palm and maintaining this position for about half a second, while handing the subject the questionnaire (see Appendix A).

Unlike Fisher, Rytting and Heslin's (1976) study, subjects were not contacted by library clerks while checking out books. In Purdue University (where this study was originally carried out), students kept their own library cards, so the clerks had excellent opportunities for touching the subjects while handing them back their cards. In Boğaziçi University library, on the other hand, students do not keep their own library cards. Therefore it would be difficult for the clerks to create an occasion for touching the subjects.

The check-out counter in Boğaziçi University library is too high for the clerk to create a natural occasion for touching a student. Therefore the data collectors stood by the exits. Subjects leaving the library/supermarket were asked to participate in an evaluation of the library/supermarket personnel and facilities. They were either touched or not touched by the data collector handing them the questionnaire to be filled out.

Subjects were randomly assigned to the touch and no - touch conditions. The data collectors touched the subjects while handing them the questionnaire only if it had a cross - mark on it, otherwise the questionnaire was simply given to the subject without initiation of touch. In case of failure



to complete a "touch", the data collector reported the failure to the investigator, pointing out the subject with whom the "touch" had failed. A non-crossed questionnaire was crossed by that data collector, in order to have the initially planned number of subjects in the touch condition.

Subjects were instructed to return the completed questionnaires to the investigator rather than the data collectors. Any further behavior of the data collectors other than the standardized manner (for which they were trained) displayed in both the touch and no-touch conditions, could bias the results. The investigator's presence, therefore, was thought to be necessary in order to prevent any further communication between the subjects and the data collector. The subjects were also instructed to direct their questions, if any, to the investigator.

Design. Data was analysed by a number of subprograms from the SPSS manual (Nie et al., 1975). Frequency distributions, breakdowns, correlations were employed in grouping the data descriptively, while analysis of variance, factor analysis and t-tests were used in the analysis of the data.

A 2 (touch-no touch) x 2 (sex of data collector) x 2 (sex of subject) Analysis of Variance design was employed. Seven separate 2x2x2 Anovas (in each set of scales, six for the items and one for the sum) were performed on the data testing the effects of contact, sex of data collector and sex

of subject; aiming at finding out whether there were any significant differences a) in the evaluative ratings of those who have been touched compared to those who have not, b) in subjects' evaluative ratings with a male data collector compared to those with a female data collector, c) in the evaluative ratings of female subjects compared to male subjects. All possible interactions between the dependent variables were also investigated.

Outcomes at .05 level or approaching this level were regarded as significant and data was analysed separately for the library and the supermarket locations. It was assumed that the two locations would constitute an independent replication for any effects that appeared and no differential predictions were made.

## RESULTS

### RESULTS OF THE AFFECTIVE STATE SCALES

#### Analysis of dimensionality of affective state scales.

Factor analysis was employed to reduce the bipolar adjective pairs to basic dimensions. The analysis revealed that, in each of the two settings (the library and the supermarket) all the six items of the affective state scale loaded on a single factor. The factor loadings are presented in Table 1.

TABLE 1- Factor loadings of the six items of the affective state scale

| Items  | Factor 1<br>For the Library | Factor 1<br>For the Supermarket |
|--|-----------------------------|---------------------------------|
| good-bad (iyi-kötü)                          | .77267                      | .78173                          |
| unpleasant-pleasant (nahos-hos)              | .53100                      | .68597                          |
| positive-negative (olumlu-olumsuz)           | .70090                      | .70769                          |
| sad-happy (üzgün-sevinçli)                   | .72753                      | .70004                          |
| beautiful-ugly (güzel-çirkin)                | .47748                      | .35186                          |
| comfortable-uncomfortable (rahat - rahatsız) | .70019                      | .61209                          |

Inspection of Table 1 indicates that the correlation of item "beautiful-ugly" (güzel-çirkin) with the other items is lower in both settings. It may be suggested that the "beautiful-ugly" (güzel-çirkin) scale is a weak indicator of the subjects' evaluations of their own affective states. With item "beautiful-ugly" (güzel-çirkin) having the lowest factor loading, all items correlate with each other, the amount of common variance in the matrix adding up to 52 percent of the total variance in each case (the library and the supermarket). In other words, more than 50 percent of the total variance can be accounted for by a single underlying dimension on which all of the six scales load.

#### Analysis of the affective state scales for the library.

Seven separate 2x2x2 Anovas were performed on affective state ratings testing the effects of contact, sex of data collector (Dsex) and sex of the subject (Ssex).

The Anovas performed on the library data did not reveal any significant results for either item of the affective state scale or for the total score of that set of scales.

Analysis of the affective state scales for the super-market. Inspection of the supermarket data indicated no significance for the sum of the affective state scales, however, some significant interactions were observed with a few items of that set of scales. Results are presented in Table 2.

TABLE 2- Probabilities for each item of the affective state scale for the supermarket

| Source of Variance | Good<br>Bad | Unpleasant<br>Pleasant | Positive<br>Negative | Sad<br>Happy | Beautiful<br>Ugly | Comfortable<br>Uncomfortable | Sum<br>Affect<br>Sta<br>Sca |
|--------------------|-------------|------------------------|----------------------|--------------|-------------------|------------------------------|-----------------------------|
| Contact            |             |                        |                      |              |                   |                              |                             |
| Dsex               |             |                        |                      | .065         | .005              |                              |                             |
| Ssex               | .076        |                        |                      |              |                   |                              |                             |
| ContactxDsex       |             |                        |                      |              | .028              |                              |                             |
| ContactxSsex       |             |                        |                      |              |                   |                              |                             |
| DsexxSsex          | .047        |                        |                      |              | .004              |                              |                             |
| ContactxDsexxSsex  |             |                        |                      |              | .031              |                              |                             |

NOTE: Only probabilities at .05 or approaching .05 (from both directions) are presented in the above table (See Appendix C for the complete Anova table)

Inspection of Table 2 indicates that, item "good-bad" (iyi-kötü) of the affective state scale has shown a nearly significant main effect of sex of subject ( $F = 3.14$ ,  $df = 1,109$ ,  $p < .076$ ) and a significant interaction between sex of data collector and sex of subject ( $F = 3.96$ ,  $df = 1.109$ ,  $p < .047$ ). These results are presented in Table 3 and Figure 1.

TABLE 3- Means for sex of subject x sex of data collector for the scale "good-bad" (iyi-kötü)

|                       |        | Sex of subject |      |      |
|-----------------------|--------|----------------|------|------|
|                       |        | Female         | Male |      |
| Sex of data collector | Female | 2.94           | 2.50 | 2.73 |
|                       | Male   | 2.07           | 3.04 | 2.53 |
|                       |        | 2.52           | 2.75 | 2.63 |

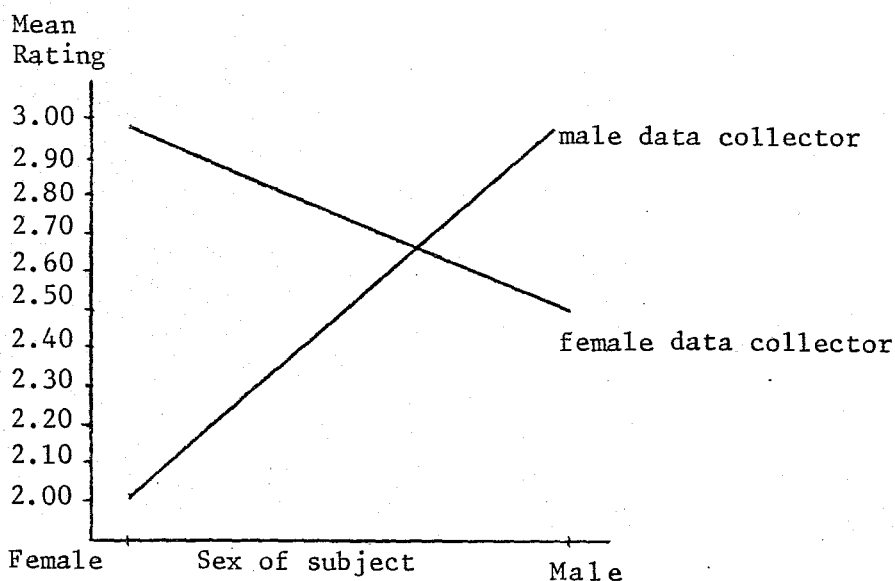


FIGURE 1- Interaction between sex of subject and sex of data collector for the scale "good-bad" (iyi-kötü)

Female subjects' ratings are more positive than males; their ratings of their own affective state is most positive when interviewed by male data collectors. However, male subjects when interviewed by male data collectors tend to rate most negatively. Opposite sex interactions seem to produce more positive ratings than same sex interactions.

The item "beautiful-ugly" (güzel-çirkin) which had the lowest correlation with the other items, showed a significant main effect of sex of data collector ( $F = 8.36$ ,  $df = 1,109$ ,  $p < .005$ ), significant interactions between contact and sex of data collector ( $F = 4.86$ ,  $df = 1,109$ ,  $p < .028$ ) and between sex of data collector and sex of subject ( $F = 8.47$ ,  $df = 1,109$ ,  $p < .004$ ), and significant three way interaction between contact, sex of data collector and sex of subject ( $F = 4.70$ ,  $df = 1,109$ ,  $p < .031$ ). Table 4 and Figure 2 presents the results of the significant interaction between contact and sex of data collector.

TABLE 4- Means for contact x sex of data collector for the scale "beautiful-ugly" (güzel-çirkin)

| Sex of data collector | Contact |      |      |
|-----------------------|---------|------|------|
|                       | No      | Yes  |      |
|                       |         |      |      |
| Female                | 2.81    | 3.03 | 2.92 |
| Male                  | 3.21    | 3.00 | 3.11 |
|                       | 3.00    | 3.02 | 3.01 |

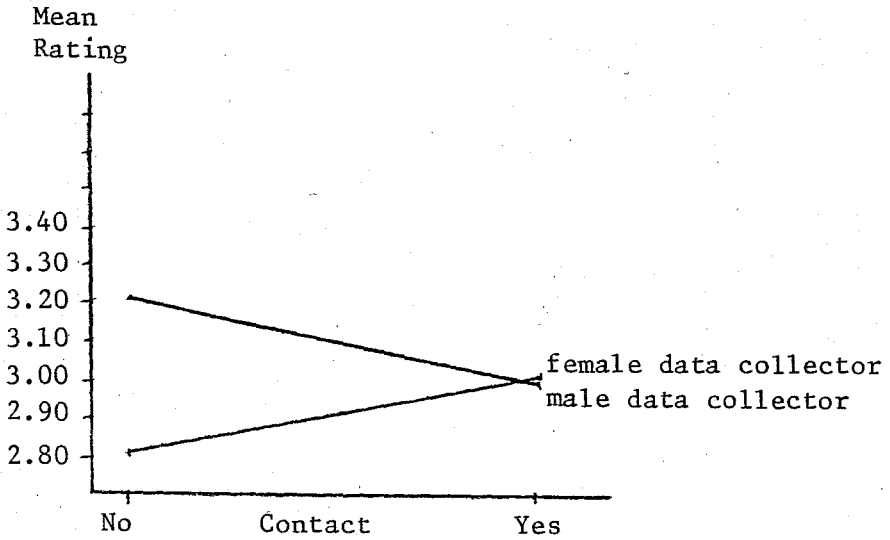


FIGURE 2- Interaction between contact and sex of data collector for the scale "beautiful-ugly" (güzel-çirkin)

Ratings tend to be more positive when data collector is female rather than male. This finding is also true for the almost significant main effect of sex of data collector displayed by the scale "sad-happy" (üzgün-sevinçli) ( $F = 3.38$ ,  $df = 1,109$ ,  $p < .065$ ). There seems to be not much difference in the ratings in the contact condition among female and male data collectors. However, in the no contact condition, female data collectors produce the most positive ratings while male data collectors produce the most negative ones. Subjects' reactions to being touched do not vary according to the sex of the data collector, however, their ratings of their own affective states are most positive when interviewed but not contacted by female data collectors.

The results of the significant interaction between sex



of data collector and sex of subject displayed by the "beautiful-ugly" (güzel-çirkin) scale, are presented in Table 5 and Figure 3.

TABLE 5- Means for sex of subject x sex of data collector for the scale "beautiful-ugly" (güzel-çirkin)

| Sex of data collector | Sex of Subject |      |      |      |
|-----------------------|----------------|------|------|------|
|                       | Female         | Male |      |      |
|                       | Female         | 2.69 |      | 3.17 |
|                       | Male           | 3.31 | 2.88 | 3.11 |
|                       |                | 2.98 | 3.04 |      |

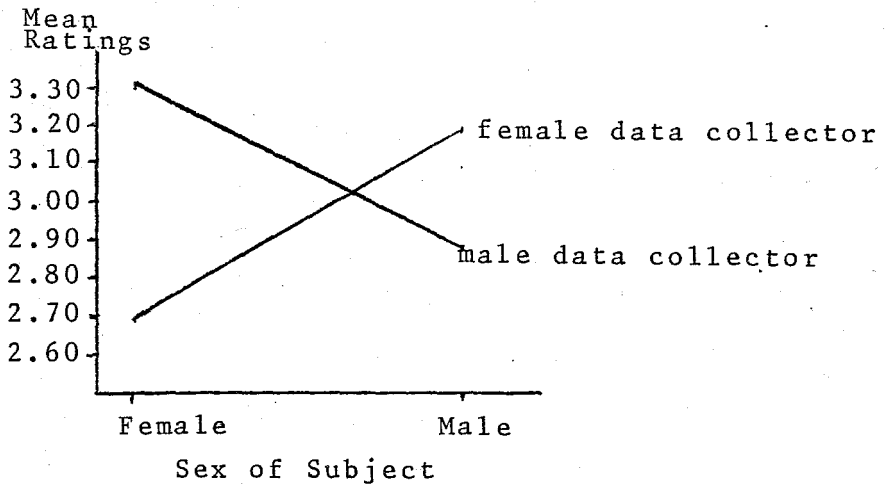


FIGURE 3- Interaction between sex of subject and sex of data collector for the scale "beautiful-ugly" (güzel - çirkin)

Same sex interactions tend to produce more positive

ratings than opposite sex interactions. Ratings are most positive when female subjects are interviewed by female data collectors, and most negative when those subjects are interviewed by male data collectors.

The results of the significant three way interaction between contact, sex of data collector and sex of subject displayed by the "beautiful-ugly" (güzel-çirkin) scale are presented on Table 6 and Figure 4.

TABLE 6- Means for sex of subject x sex of data collector in the no contact and contact conditions for the scale "beautiful-ugly" (güzel-çirkin)

|                       |        | No Contact     |      |      |                       |        | Contact        |      |      |
|-----------------------|--------|----------------|------|------|-----------------------|--------|----------------|------|------|
|                       |        | Sex of Subject |      |      |                       |        | Sex of Subject |      |      |
| Sex of data collector |        | Female         | Male |      | Sex of data collector |        | Female         | Male |      |
|                       | Female | 2.47           | 3.13 | 2.81 |                       | Female | 2.88           | 3.21 | 3.03 |
|                       | Male   | 3.80           | 2.54 | 3.21 |                       | Male   | 2.79           | 3.23 | 3.00 |
|                       |        | 3.13           | 2.86 | 3.00 |                       |        | 2.84           | 3.22 | 3.02 |

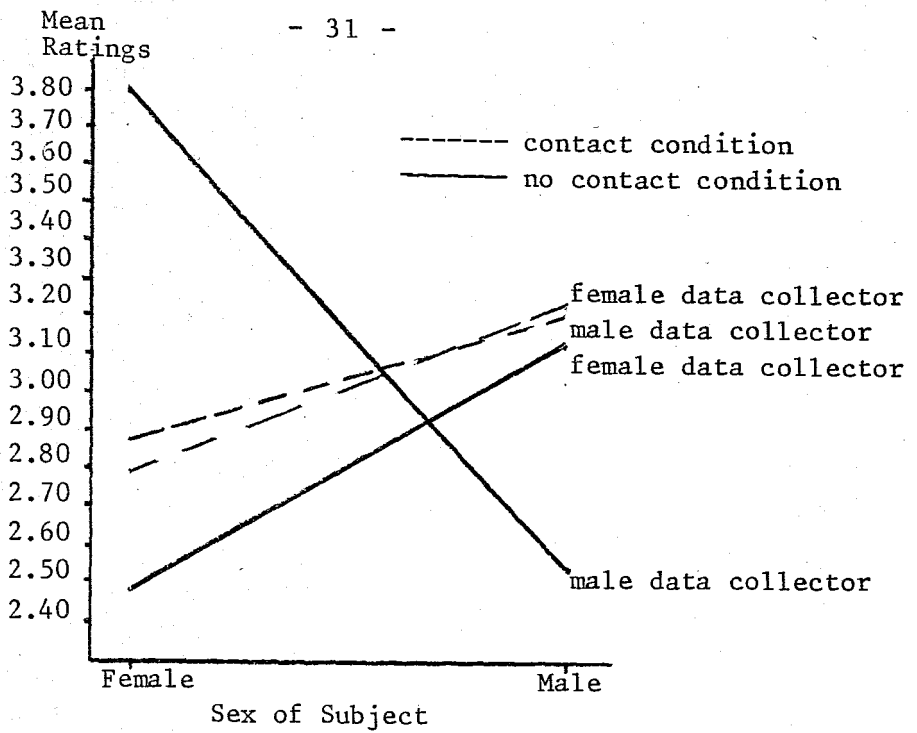


FIGURE 4- Interaction between sex of subject and sex of data collector in the no contact and contact conditions for the scale "beautiful-ugly" (güzel-çirkin)

Ratings are most positive in the no contact condition, when female subjects are interviewed by female data collectors. In the no contact condition, same sex interaction tends to produce more positive ratings than opposite sex interaction, whereas in the contact condition, subjects' ratings are more or less similar regardless of the sex of the data collector.

In general, female subjects' ratings are more positive than those of male subjects'. In one out of the four cases, as can be seen by inspection of Figure 4, a clear cut reversal takes place, such that females are most negative of all cases whereas males are positive, when interviewed but not touched by male data collector.

## RESULTS OF THE PERSONNEL SCALES

### Analysis of dimensionality of the personnel scales.

Factor analysis has shown that, both for the library and for the supermarket, all six scales load on a single factor, implying that they are all indicators of the subjects' evaluations of the library and of the supermarket personnel. Factor loadings are presented in Table 7.

TABLE 7- Factor loadings of the personnel scales

| Items  | Factor 1<br>For the Library | Factor 1<br>For the Supermarket |
|--|-----------------------------|---------------------------------|
| bad-good (kötü-iyi)                                | .74973                      | .64677                          |
| pleasant-unpleasant (hoş-nahoş)                    | .69129                      | .53039                          |
| negative-positive (olumsuz-olumlu)                 | .69943                      | .68534                          |
| friendly-unfriendly (dostça -<br>dostça olmayan)   | .64594                      | .73732                          |
| useful-useless (işe yarar-işe<br>yaramaz)          | .72159                      | .72937                          |
| not helpful-helpful (yardımcı<br>olmayan-yardımcı) | .52194                      | .58793                          |

The factor loadings displayed in Table 7 show that the six scales are polarized in the following manner: In the library, the scales "bad-good" (kötü-iyi) and "useful-useless" (işe yarar-işe yaramaz) have higher factor loadings than the remaining four scales. In the supermarket, the scales "friendly-unfriendly" (dostça-dostça olmayan) and "useful - useless" (işe yarar-işe yaramaz) have the highest factor loadings..

However, both in the library and in the supermarket, all six scales correlate with each other. In the library 54 percent of the total variance can be accounted for by a single underlying dimension on which all scales load. In the supermarket, on the other hand, the amount of common variance in the matrix adds up to 52 percent of the total variance.

Analysis of the personnel scales. Seven separate 2x2x2 Anovas were performed on personnel ratings, testing the effects of contact, sex of the data collector (Dsex), and sex of subject (Ssex). The results are summarized in Tables 8 (for the library) and 9 (for the supermarket).

TABLE 8- Probabilities for each item of the personnel scale for the library

| Source of Variation | Bad Good | Pleasant Unpleasant | Negative Positive | Friendly Unfriendly | Useful Useless | Not Helpful Helpful | Sum of Personnel Scales |
|---------------------|----------|---------------------|-------------------|---------------------|----------------|---------------------|-------------------------|
| act                 |          | .046                |                   |                     |                |                     |                         |
|                     |          | .025                |                   |                     |                |                     |                         |
| actxDsex            |          |                     |                   |                     |                |                     |                         |
| actxSsex            |          |                     |                   |                     |                |                     |                         |
| xSsex               |          | .027                |                   |                     |                |                     |                         |
| actxDsexxSsex       |          |                     |                   |                     |                |                     |                         |

Only probabilities at .05 or approaching .05 (from both directions) are presented in the above table (see Appendix C for the complete Anova table).

TABLE 9- Probabilities for each item of the personnel scale for the supermarket

| Source of Variation | Bad Good | Pleasant Unpleasant | Negative Positive | Friendly Unfriendly | Useful Useless | Not Helpful Helpful | Sum of Personnel Scales |
|---------------------|----------|---------------------|-------------------|---------------------|----------------|---------------------|-------------------------|
| Contact             |          |                     |                   |                     |                | .016                |                         |
| Dsex                |          |                     |                   | .043                |                | .066                | .050                    |
| Ssex                |          | .045                |                   | .013                | .008           | .082                | .010                    |
| ContactxDsex        |          |                     |                   | .018                |                | .076                | .043                    |
| ContactxSsex        |          |                     |                   | .049                | .056           |                     |                         |
| DsexxSsex           |          |                     |                   | .021                | .039           |                     | .076                    |
| ContactxDsexxSsex   |          |                     |                   | .007                | .003           |                     | .063                    |

NOTE: Only probabilities at .05 or approaching .05 (from both directions) are presented in the above table (see Appendix C for the complete ANOVA tables).

Inspection of Tables 8 and 9 show that the sum of the personnel scales for the library has not shown any significant interaction, whereas the sum of the personnel scales for the supermarket has shown significant main effects of sex of data collector ( $F = 3.82$ ,  $df = 1,114$ ,  $p < .05$ ) and of sex of subject ( $F = 6.71$ ,  $df = 1,114$ ,  $p < .01$ ); significant interaction between contact and sex of data collector ( $F = 4.09$ ,  $df = 1,114$ ,  $p < .043$ ); and nearly significant interactions between sex of data collector and sex of subject ( $F = 3.125$ ,  $df = 1,114$ ,  $p < .076$ ) and between contact, sex of data collector and sex of subject ( $F = 3.45$ ,  $df = 1,114$ ,  $p < .063$ ).

Analysis of the personnel scales for the library.

Results of the significant main effects of sex of data collector ( $F = 3.94$ ,  $df = 1,165$ ,  $p < .046$ ) and of sex of subject ( $F = 4.99$ ,  $df = 1,165$ ,  $p < .025$ ), and of the significant interaction between sex of data collector and sex of subject ( $F = 4.86$ ,  $df = 1,165$ ,  $p < .027$ ) displayed by the item "pleasant-unpleasant" (hoş-nahoş) of the personnel scale of the library are presented in Table 10 and Figure 5.

TABLE 10- Means for sex of subject x sex of data collector for the scale "pleasant-unpleasant" (hoş-nahoş)

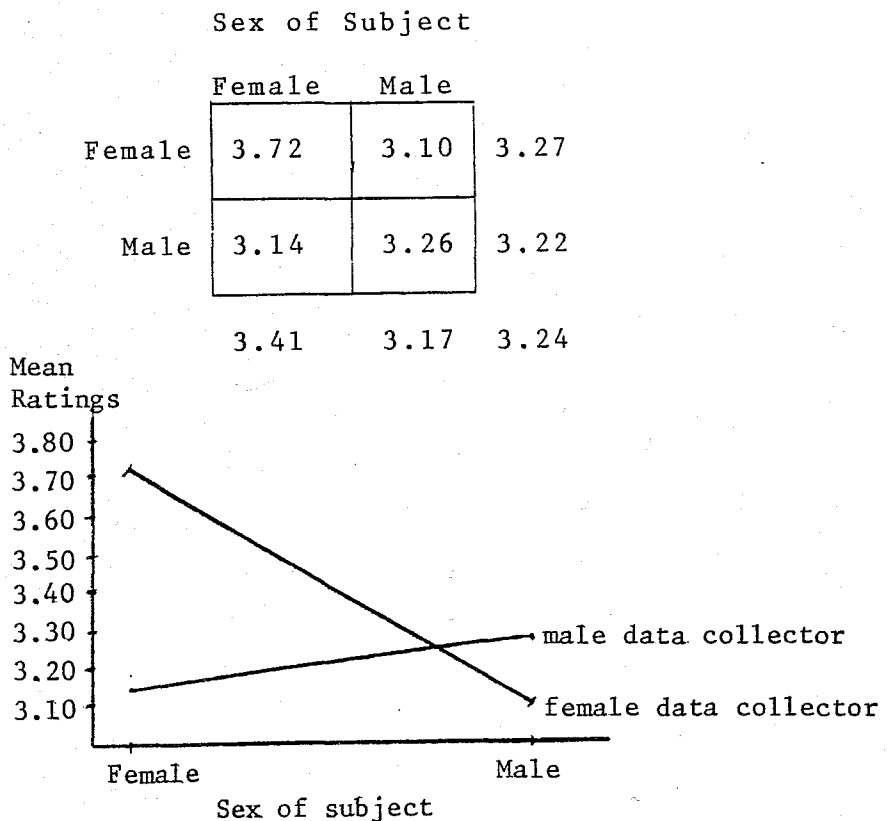


FIGURE 5- Interaction between sex of subject and sex of data collector for the scale "pleasant-unpleasant" (hoş - nahoş)

Ratings are more positive when subjects are interviewed by male data collectors, and male subjects tend to rate more positively than female subjects.

Ratings of the library personnel are most positive when male subjects are interviewed by female data collectors. Opposite sex interactions tend to produce more positive ratings than some sex interactions. Of the same sex interactions, female subject with female data collector is one that produces the most negative ratings of the library personnel.

Analysis of the personnel scales for the supermarket.

Table 11 presents mean scores of sex of data collector and sex of subject of the sum of the personnel scales for the supermarket.

TABLE 11- Mean scores of sex of data collector and sex of subject of sum of personnel scales for the supermarket

| Sex of           |        | Mean Scores |
|------------------|--------|-------------|
| Data Collector { | Female | 16.65       |
|                  | Male   | 17.05       |
| Subject {        | Female | 15.17       |
|                  | Male   | 18.3        |

The means in Table 11 indicate that ratings are more



positive when data collectors are females, and that female subjects tend to rate the supermarket personnel more positively than male subjects. These findings are also confirmed by the scales "friendly-unfriendly" (dostça-dostça olmayan) which has shown significant main effects of sex of data collector ( $F = 4.10$ ,  $df = 1,114$ ,  $p < .043$ ) and of sex of subject ( $F = 6.29$ ,  $df = 1,114$ ,  $p < .013$ ); "useful-useless" (işe yarar-işe yaramaz) which has shown a significant main effect of sex of subject ( $F = 7.30$ ,  $df = 1,114$ ,  $p < .008$ ); and "helpful-not helpful" (yardımcı-yardımcı olmayan) which has shown nearly significant main effects of sex of data collector ( $F = 3.37$ ,  $df = 1,114$ ,  $p < .066$ ) and of sex of subject ( $F = 3.01$ ,  $df = 1,114$ ,  $p < .082$ ).

Results of the significant interaction between contact and sex of data collector ( $F = 4.09$ ,  $df = 1,114$ ,  $p < .043$ ) of the sum of the personnel scales for the supermarket are presented in Table 12 and Figure 6.

TABLE 12- Means for contact x sex of data collector for the sum of the personnel scales

| Sex of data collector | Contact |       |       |
|-----------------------|---------|-------|-------|
|                       | No      | Yes   |       |
|                       |         |       |       |
| Female                | 16      | 17.30 | 16.65 |
| Male                  | 17.34   | 16.74 | 17.05 |
|                       | 16.63   | 17.05 | 16.84 |

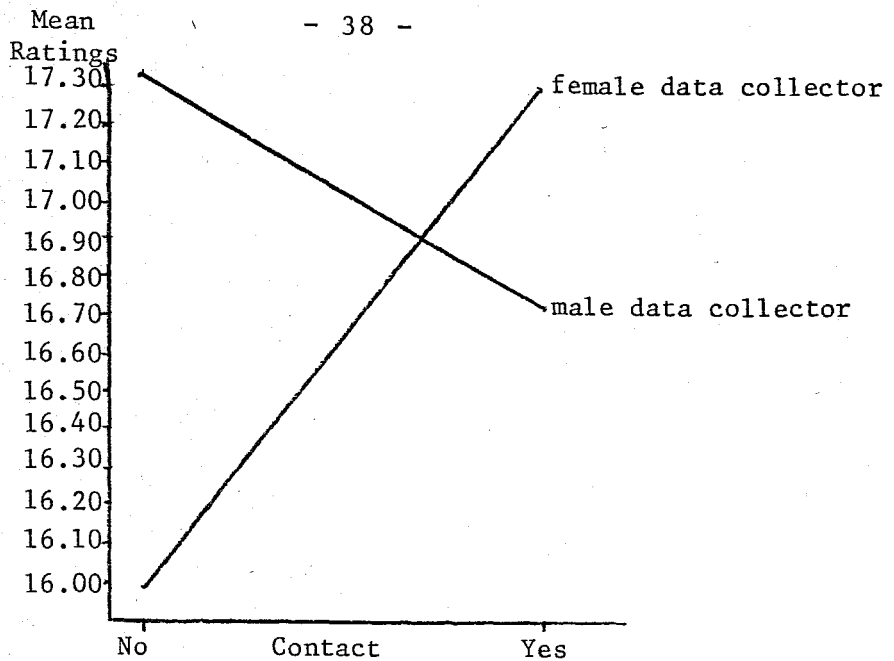


FIGURE 6- Interaction between contact and sex of data collector for the sum of the personnel scales.

Subjects' evaluations of the supermarket personnel are the most positive when interviewed but not contacted by female data collectors, and the most negative when interviewed and not contacted by male data collectors. In the contact condition male experimenters produce more positive ratings than female data collectors, whereas in the no contact condition female data collectors produce more positive ratings than male data collectors.

The finding that when a female data collector interviews but does not contact a female subject, ratings are most positive holds for the scale "helpful-not helpful" (yardımcı-yardımcı olmayan) as well which has shown a nearly significant interaction between contact and sex of data collector. However, the scale "friendly-unfriendly" (dostça -

dostça olmayan) displays contradictory results. The significant interaction between contact and sex of data collector ( $F = 5.67$ ,  $df = 1,114$ ,  $p < .018$ ) shown by the scale "friendly - unfriendly" (dostça-dostça olmayan) indicates the most positive ratings to have occurred when subjects are contacted by male data collectors. This finding is somewhat deleted in the analysis performed on the sum of the personnel scales, since results show that evaluation of the supermarket personnel are the most positive when female subjects are interviewed by female data collectors.

The sum of the personnel scales also showed a trend toward a significant interaction between sex of data collector and sex of subject ( $F = 3.13$ ,  $df = 1,114$ ,  $p < .076$ ). Results of this interaction are presented in Table 13 and Figure 7.

TABLE 13- Means for sex of subject x sex of data collector for the sum of the personnel scales

| Sex of data collector | Sex of Subject |       |       |
|-----------------------|----------------|-------|-------|
|                       | Female         | Male  |       |
|                       |                |       |       |
| Female                | 14.91          | 18.39 | 16.65 |
| Male                  | 16.00          | 18.19 | 17.05 |
|                       | 15.40          | 18.30 | 16.84 |

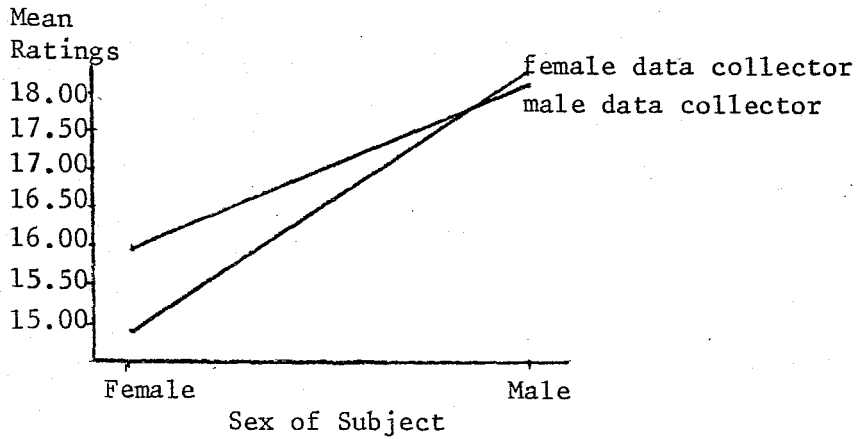


FIGURE 7- Interaction between sex of subject and sex of data collector for the sum of the personnel scales.

Inspection of the results in Table 13 indicate that in general, female subjects' evaluations of the supermarket personnel are more positive than those of the male subjects'; and that female data collectors tend to produce more positive ratings than male data collectors. Evaluation of the personnel is most positive when female subjects are interviewed by female data collectors.

This finding is also true for the scales "friendly - unfriendly" (dostça-dostça olmayan) and "useful-useless" (işe yarar-işe yaramaz) which have shown significant interactions between sex of data collector and sex of subject ( $F = 5.38$ ,  $df = 1,114$ ,  $p < .021$  and  $F = 4.25$ ,  $df = 1,114$ ,  $p < .039$  respectively).

The sum of the personnel scales has shown a nearly significant three way interaction between contact, sex of data collector and sex of subject ( $F = 3.45$ ,  $df = 1,114$ ,  $p < .063$ ). Results are presented in Table 14 and Figure 8.

TABLE 14- Means for contact x sex of data collector x sex of subject for the sum of the personnel scales

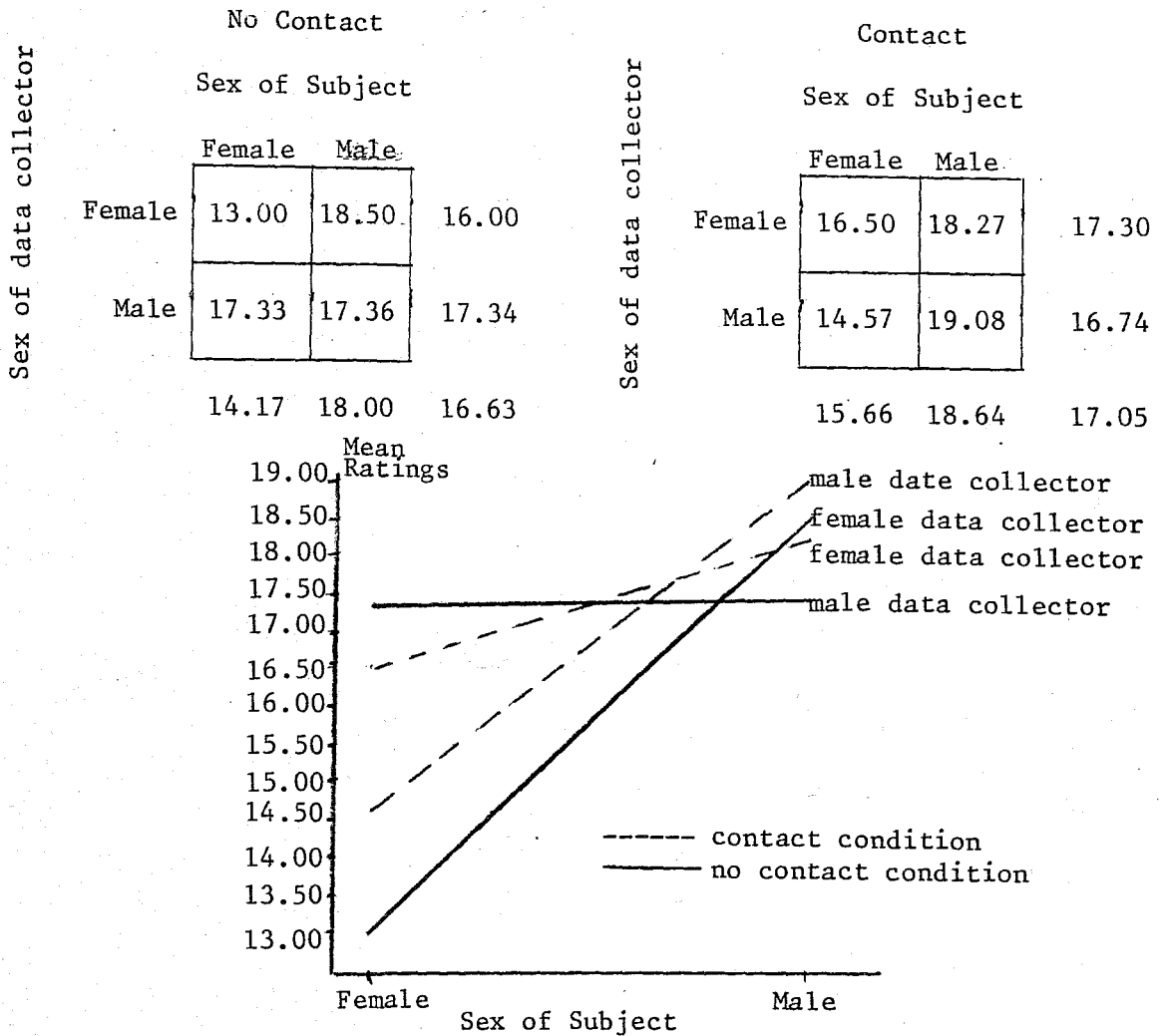


FIGURE 8- Interaction between contact x sex of data collector x sex of subject for the sum of the personnel scales.

Evaluation of the supermarket personnel is the most positive in the no contact condition when female subjects are interviewed by female data collectors. Female subjects contacted by male data collectors rate the personnel considerably positive too. However, the most positive ratings occur in the no contact condition when female data collectors interview female subjects. This accounts for the facts that female subjects rate more positively than males and that female data collectors produce more positive ratings than male data collectors.

The condition in which male data collector contacts male subjects produces the most negative ratings. When there is no contact, same sex interactions for females tend to produce positive effects; when there is contact, same sex interactions for males tend to produce negative effects.

Based on the above results of the sum of the personnel scales, it may be concluded that; female subjects tend to rate more positively than male subjects, female data collectors produce more positive ratings than male data collectors and that the effect of contact differs with each level of gender of data collector and gender of subject.

## RESULTS OF THE ENVIRONMENT SCALES

### Analysis of dimensionality of the environment scales.

Factor analysis has shown that, both for the library and for

the supermarket, there is a two factor solution. Factor loadings are presented in Table 15.

TABLE 15- Factor loadings of the six items of the environment scales

| Items  | For the Library |          | For the Supermarket |          |
|--|-----------------|----------|---------------------|----------|
|  | Factor 1        | Factor 2 | Factor 1            | Factor 2 |
| bad-good (kötü-iyi)                          | .87422          | .14408   | .85670              | .13835   |
| pleasant-unpleasant (zevkli - zevksiz)       | .58526          | .38795   | .60221              | .22107   |
| negative-positive (olumsuz - olumlu)         | .78033          | .21597   | .65176              | .17336   |
| clean-dirty (temiz-pis)                      | .17662          | .66223   | .16288              | .64096   |
| confortable-uncomfortable (rahat - rahatsız) | .25738          | .82710   | .19929              | .73351   |
| tasteless-tasteful (zevksiz - zevkli)        | .54575          | .37438   | .55704              | .17255   |

Inspection of Table 15 indicates that, both for the library and for the supermarket, scales "bad-good" (kötü-iyi), "pleasant-unpleasant" (hoş-nahoş), "negative-positive" (olumsuz-olumlu) and "tasleless-tasteful" (zevksiz-zevkli) load on Factor 1, while scales "clean-dirty" (temiz-pis) and "comfor-table-uncomfortable" (rahat-rahatsız) load on Factor 2.

In the library, 72 per cent of the total variance can be accounted for by two underlying dimensions on which all scales load. In the supermarket, on the other hand, the amount of common variance in the matrix adds up to 65 percent

of the total variance.

Analysis of the environment scales. Both for the library and for the supermarket, scales "bad-good" (kötü-iyi), "pleasant-unpleasant" (hoş-nahoş), "negative-positive" (olumsuz-olumlu) and "tasteless-tasteful" (zevksiz-zevkli) were summed to yield a measure of environment for one dimension; and scales "clean-dirty" (temiz-pis) and "comfortable - uncomfortable" (rahat-rahatsız) were summed to yield a measure of environment for the other dimension.

4 separate 2x2x2 Anovas were performed on the environment ratings testing the effects of contact, sex of data collector and sex of subject.

Inspection of the environment data indicated no significance in either of the four groups.

#### EFFECTS OF AWARENESS OF THE INDEPENDENT VARIABLE

As data was collected anonymously, it was not possible to debrief the subjects and ask them individually whether they had consciously perceived the touch stimulus. A question was included into the questionnaire to serve this purpose. Subjects were not directly asked whether they had been touched or not. Instead, they were presented some characteristics of the data collector (tone of voice, look, contact, smell) and were asked to rate the degree (very much, little, not at all) to which they were affected by each. Responses to



the characteristic "contact" would serve to determine whether the significant interactions, detected in the supermarket data, between contact, sex of data collector and sex of subject, displayed by the "güzel-çirkin" scale of the affective evaluation and by the sum of the personnel scales, were dependent upon conscious perception of the touch stimulus.

In the library only 28 percent (50 subjects) indicated to have consciously perceived the touch stimulus, while in the supermarket the percentage of those who had perceived the touch was 25 (32 subjects). In fact, of those 32 subjects who had indicated to have perceived the touch, only 15 were actually touched.

To assess the possibility that the responses of subjects who were aware of the touch differed from the responses of these who indicated no such awareness, for 12 of the dependent measures, namely "beautiful-ugly" (güzel-çirkin) scale of the affective evaluation and the sum of the personnel scales, t-tests were run to test the differences between the means of the two groups (the "aware" and the "unaware"). No t-tests were performed on the library data since it yielded no significance at all.

Results of the t-tests performed on the supermarket data indicated that, there was no difference between the means of the "aware" and the "unaware" groups for either of

the dependent measures. Thus, apparently the previously described results displayed by the "beautiful-ugly" (güzel - çirkin) scale of the affective evaluation and by the sum of the personnel scales scales were evidenced regardless of whether or not the touch stimulus was perceived.

#### COMPARISON OF THE TWO SITES

The present study also aimed to find out how the two settings, the library and the supermarket, were evaluated by the subjects; whether they evaluated these settings similarly or whether they perceived some differences. To serve this purpose, t-tests were computed on the sums of the affective scales, the personnel scales and the environment scales of the library and of the supermarket. These results are presented in Table 16.

TABLE 16- Results of the t-tests performed on the sums of affective scales, personnel scales and environment scales

| Source of Variation            | Location    | Mean Scores | Variances | t-Values |
|--------------------------------|-------------|-------------|-----------|----------|
| Sum of affective scales        | Library     | 17.86       | 76.53     | 0.023    |
|                                | Supermarket | 17.67       | 41.60     |          |
| Sum of personnel scales        | Library     | 18.82       | 77.79     | 2.111*   |
|                                | Supermarket | 16.84       | 38.44     |          |
| Sum of environment scales (I)  | Library     | 9.69        | 31.92     | 0.447    |
|                                | Supermarket | 9.96        | 26.63     |          |
| Sum of environment scales (II) | Library     | 4.05        | 8.65      | .838     |
|                                | Supermarket | 4.31        | 7.36      |          |

\*  $p < .05$

Results indicate that both settings were evaluated similarly except for the personnel. There was a difference in the subjects' evaluations of the personnel in the library and in the supermarket. Subjects evaluated the supermarket personnel significantly more positively than they did the library personnel.

#### RATINGS OF THE NEW LIBRARY IN COMPARISON TO THE OLD ONE

The last section of the library questionnaire consisted of questions aiming at determining the subjects' perceptions of the library in general. The subjects, in the first part of the last section, were asked to rate the library according to adjectives such as cleanliness, tidyness etc. Then they were asked whether they had used the old library. In the second part of this section, subjects were presented the same set of adjectives, but this time they were asked to make a comparison among the old and the new libraries. They were expected to rate the new library in comparison with the old one. Results of this section of the questionnaire yielded not only information about how the new library was perceived but also some comparative information of the new library with the old one.

Table 17 presents results of the subjects' general perceptions of the new library.

TABLE 17- Results of the subjects' general perceptions of the new library

| Category Label                  | (No)<br>Absolute Frequency | (PCT)<br>Adjusted Frequency |
|---------------------------------|----------------------------|-----------------------------|
| Very clean (çok temiz)          | 74                         | 40.7                        |
| clean (temiz)                   | 107                        | 58.8                        |
| dirty (pis)                     | 1                          | 0.5                         |
| Very bright (çok aydınlık)      | 32                         | 17.8                        |
| bright (aydınlık)               | 143                        | 79.4                        |
| dark (karanlık)                 | 5                          | 2.8                         |
| Very calm (çok sakin)           | 36                         | 20.0                        |
| calm (sakin)                    | 128                        | 71.1                        |
| noisy (gürültülü)               | 16                         | 8.9                         |
| Very warm (çok sıcak)           | 6                          | 3.4                         |
| warm (sıcak)                    | 76                         | 42.9                        |
| cold (soğuk)                    | 95                         | 53.7                        |
| Very tidy (çok düzenli)         | 28                         | 15.7                        |
| tidy (düzenli)                  | 132                        | 74.2                        |
| untidy (düzensiz)               | 18                         | 10.1                        |
| Working hours (hizmet saatleri) |                            |                             |
| Very convenient (çok elverişli) | 19                         | 10.6                        |
| convenient (elverişli)          | 74                         | 41.1                        |
| inconvenient (elverişsiz)       | 87                         | 48.3                        |

Results have shown that nearly 100 per cent of the subjects indicated the new library to be clean, 97 per cent considered it to be luminious, 91 per cent thought it to be quiet and nearly 90 per cent found it tidy. About 46 per cent of the subjects considered the library to be warm and about 52 per cent approved of its working hours.

Results of the ratings of the new library compared to the old one are presented in Table 18.

TABLE 18- Results of the subjects' general perceptions of the new library compared to the old one

| Category Label                  | New                           |                                | New Compared to Old           |                                |
|---------------------------------|-------------------------------|--------------------------------|-------------------------------|--------------------------------|
|                                 | (No)<br>Absolute<br>Frequency | (PCT)<br>Adjusted<br>Frequency | (No)<br>Absolute<br>Frequency | (PCT)<br>Adjusted<br>Frequency |
| Very clean (çok temiz)          | 31                            | 34.06                          | 16                            | 18.82                          |
| clean (temiz)                   | 60                            | 65.93                          | 66                            | 77.65                          |
| Dirty (pis)                     |                               |                                | 3                             | 3.53                           |
| Very bright (çok aydınlık)      | 11                            | 12.36                          | 29                            | 33.72                          |
| bright (aydınlık)               | 74                            | 83.15                          | 48                            | 55.81                          |
| dark (karanlık)                 | 4                             | 4.49                           | 9                             | 10.46                          |
| Very calm (çok sakin)           | 15                            | 16.85                          | 32                            | 35.96                          |
| calm (sakin)                    | 64                            | 71.91                          | 47                            | 52.81                          |
| noisy (gürültülü)               | 10                            | 11.24                          | 10                            | 11.23                          |
| Very warm (çok sıcak)           | 4                             | 4.60                           | 2                             | 2.22                           |
| warm (sıcak)                    | 28                            | 32.18                          | 12                            | 13.33                          |
| cold (soğuk)                    | 55                            | 63.22                          | 76                            | 84.44                          |
| Very tidy (çok düzenli)         | 11                            | 12.5                           | 11                            | 12.79                          |
| tidy (düzenli)                  | 68                            | 77.27                          | 65                            | 75.58                          |
| untidy (düzensiz)               | 9                             | 10.23                          | 10                            | 11.63                          |
| Working hours (hizmet saatleri) |                               |                                |                               |                                |
| Very convenient (çok elverişli) | 4                             | 4.40                           | 4                             | 4.44                           |
| convenient (elverişli)          | 31                            | 34.07                          | 22                            | 24.44                          |
| inconvenient (elverişsiz)       | 56                            | 61.53                          | 64                            | 71.11                          |

Inspection of Table 18 indicate that, the new library compared to the old one is clean ( $77.65\% > 65.93\%$ ), very luminious ( $33.72\% > 12.36\%$ ) and very quiet ( $35.96\% > 16.85\%$ ). About 84 per cent of the subjects claim the new library to be cold compared to the old one. About 37 per cent of the subject subjects considered the new library to be warm, whereas only about 16 per cent consider the new library, compared to the old one, to be warm. There seems to be not much difference in subjects' perceptions of the tidyness of the old and new libraries. About 77 per cent of the subjects (who have used the old library) consider the new library to be tidy, and about 76 per cent consider the new library, compared to the old one, to be tidy. There is on increase in the percent of the subjects who do not approve of the new library's working hours compared to those of the old one ( $71.11\%$  as opposed to  $61.53\%$ ).

Based on the above results, it may be concluded that, the subjects' perceptions of the new library in terms of the above adjectives are quite positive. For those subjects who were familiar with the old library, the evaluation of the new facility was considered more positive except with regard to warmth and approval of the working hours.

#### SUBJECTS' GENERAL EVALUATIONS OF THE SUPERMARKET

The last section of the supermarket questionnaire consisted of some general questions about the supermarket.

The first 2 sets of the questions in this section were aimed at finding out whether subjects thought it was a good idea to have a supermarket on the campus, and the frequency with which subjects shopped from the supermarket. Results of this section are presented in Table 19.

TABLE 19- Subjects views about the necessity of the supermarket on the campus and their shopping frequencies

| Category Label                           | (No)<br>Absolute Frequency | (PCT)<br>Adjusted Frequency |
|--|----------------------------|-----------------------------|
| A very good idea<br>(Çok iyi bir fikir)  | 76                         | 58.5                        |
| A good idea<br>(İyi bir fikir)           | 49                         | 37.7                        |
| Does not matter<br>(Farketmez)           | 5                          | 3.8                         |
| Not a good idea<br>(iyi bir fikir değil) | -                          | -                           |
| Frequently<br>(Sık sık)                  | 74                         | 56.9                        |
| Sometimes<br>(Bazan)                     | 55                         | 42.3                        |
| Very rare<br>(Çok nadir)                 | 1                          | 0.8                         |

Inspection of Table 19 indicates that 96 per cent of the subjects think it is a good idea to have a supermarket on the campus. 99 per cent of the subjects shop from the supermarket, of which about 57 per cent shop quite frequently while 42 per cent shop occasionally.

In the last set of questions of this section, subjects were asked to rate their perceptions on some general aspects of the supermarket such as its cleanliness, tidyness etc. These results are presented in Table 20.

TABLE 20- Results of subjects' perceptions on some general aspects of the supermarket

| Category Label                  | (No)<br>Absolute Frequency | (PCT)<br>Adjusted Frequency |
|---------------------------------|----------------------------|-----------------------------|
| Very necessary (çok gerekli)    | 79                         | 61.2                        |
| necessary (gerekli)             | 50                         | 38.8                        |
| unnecessary (gereksiz)          |                            |                             |
| Very efficient (çok yeterli)    | 11                         | 9.1                         |
| efficient (yeterli)             | 89                         | 73.6                        |
| inefficient (yetersiz)          | 21                         | 17.4                        |
| Very cute (çok sevimli)         | 9                          | 7.9                         |
| cute (sevimli)                  | 94                         | 82.5                        |
| not cute (sevimsiz)             | 11                         | 9.6                         |
| Very tidy (çok düzenli)         | 13                         | 10.8                        |
| tidy (düzenli)                  | 98                         | 81.7                        |
| untidy (düzensiz)               | 9                          | 7.5                         |
| Very clean (çok temiz)          | 16                         | 13.7                        |
| clean (temiz)                   | 91                         | 77.8                        |
| dirty (pis)                     | 10                         | 8.5                         |
| Working hours (hizmet saatleri) |                            |                             |
| Very convenient (çok elverişli) | 31                         | 25.6                        |
| convenient (elverişli)          | 82                         | 67.8                        |
| inconvenient (elverişsiz)       | 8                          | 6.6                         |

Inspection of Table 20 indicates that 100 per cent of the subjects think it is necessary to have this supermarket, about 83 per cent think it is efficient, 90 per cent believe



it is cute and pleasant, about 93 per cent find it tidy, and about 92 per cent think it is clean, while 93 per cent approve of its working hours.

It may be concluded that, in general, the subjects have formed positive impressions of the supermarket's services and of its physical environment. The majority of the subjects find its services quite efficient, and they seem to be pleased with its cleanliness, tidyness and with its working hours.

## DISCUSSION

### SUMMARY OF THE RESULTS

A 2 (touch-no touch) x 2 (sex of data collector) x 2 (sex of subject) Anova design was performed on the data testing the effects of contact, sex of data collector and sex of subject. Results may be summarized as follows: The Anova tests performed on the library data revealed no significance for any of the affective state variables or for the sum of that set of variables. The significant interactions (contact x sex of data collector x sex of subject) displayed by the "beautiful-ugly" (güzel-çirkin) item of the affective state evaluation for the supermarket, on the other hand, indicated that more positive affect was experienced by female subjects who were interviewed but not contacted by female data collectors.

The library data revealed no significance for the sum of the personnel variables, but the item "pleasant-unpleasant" (hoş-nahoş) showed some significant interactions, which indicated that opposite sex interactions produced more positive

ratings than same sex interactions. The personnel variables for the supermarket were revealed to be the most sensitive scales of the dependent measures under study as both the sum of the personnel variables and some individual items of this set of scales showed significant interactions. It was found that, in general, female subjects' evaluations of the supermarket personnel were more positive than those of the male subjects'; female data collectors tended to produce more positive ratings than male data collectors and that evaluation of the personnel was most positive when female subjects were interviewed by male data collectors.

The analysis of variance utilized on the dependent measures revealed no significant effect for the recipients' evaluations of either the library or the supermarket environments.

## CONCLUSIONS

As discussed in the introduction, an explanation for the paucity of good research on touch lies in the methodological difficulties of studying touch in a controlled setting. In laboratory, it is difficult to create casual interactions between strangers in which naturally occurring touch takes place. The present study demonstrates a possible way of bringing the effect of touch under experimental control. Introducing the touch variable in the natural setting does not seem to produce unnatural behavior on the part of the participants.

The present study was conducted in two different settings in Boğazici University, in the library and in the supermarket. It was expected that similar results would be obtained in those two locations and that the results could be generalized to other settings. However, results revealed by the library data and those revealed by the supermarket data were not similar. The library data showed no significant effects whereas the supermarket data, especially the evaluation of the personnel, revealed significant effects. The failure to observe any effects in the library data was at first surprising. The data collectors were the same people in both settings as were the items on the questionnaires. The failure to observe any effects in the library data could be due neither to the data collectors nor to the questionnaires. Concentrating on the nature of those two settings, one realizes that the characteristics of those two institutions are very different.

It was within the interest of this study to find out how the two settings, the library and the supermarket, were evaluated by the subjects; whether subjects evaluated these settings similarly or differently. Results indicated that both settings were evaluated similarly except for the personnel. Subjects evaluated the supermarket personnel significantly more positively than they did the library personnel. It may be suggested that this difference stems from the fact that the supermarket, unlike the library, is a private institution. From a marketing point of view, the difference is that between profit versus non-profit organizations. The emphasis in the

interaction of an organization with its environment, moves from the internal aspects of the organization to the external factors that can demand substantial internal alterations (Duncan, 1975). The fulfillment of such internal alterations in public organizations, due to bureaucratic difficulties, is harder than it is in private organizations. The library's rate of achieving internal changes would always be behind that of the supermarkets. The supermarket's major purpose should be the satisfaction of its customers, as it is in competition with the other two organizations on the university campus in which many of its products are also available. Therefore, its personnel and services should be at a level that satisfies its customers' needs. The library, on the other hand, does not face any competition. It serves for the purpose of satisfying intellectual needs. Whether its personnel and services are satisfactory or not, it is the only place available, on the campus, for the satisfaction of intellectual needs. This characteristic difference between the library and the supermarket may account for the failure to observe any treatment effects in the library data.

The Anova performed on the dependent measures did not reveal any main effect for touch. A possible explanation for failure to observe any main effect for touch may be that the touch employed in this study was so minimal that it could hardly be noticed by the recipients. However, it did appear in a three way interaction (touch x sex of data collector x sex of subject) in the supermarket's "beautiful-ugly" (güzel-

girkin) item of the affective state evaluation, in most items of the personnel evaluation and in the sum of the personnel variables. Another potential explanation for failure to observe any main effect for touch lies in the fact that touch may have had a strong effect, but due to the different reactions of male and female subjects', it was weakened. The strong effect of touch may also have been weakened due to the fact that Turkish culture is one with a high rate of interpersonal contact.

The significant effects for sex of data collector may be explained by the quality of the functional/professional touching situation that was used in the present study. In spite of the asexual nature of the relationship between the data collectors and the students, the effect of touch on the subjects was not limited to that of a touch from an individual whose sexual identity was not particularly relevant. Indeed, the effect of the touch manipulation on the subject varied with each level of gender of data collector and gender of subject.

The trend toward an interaction between touch, sex of data collector and sex of subject suggests that while in the no touch condition, ratings of female subjects interviewed by female data collectors are more positive; in the touch condition, the response to touch by male data collectors is more positive for female subjects. In general (both in the touch and no touch conditions) female subjects' ratings are

more positive than those of male subjects'. And in the no touch conditions, female data collectors produce more positive ratings than male data collectors. Given those two consistent results, the reason for the most positive ratings to have occurred in the interaction of those two conditions become clearer.

The finding that, in the touch condition, the response of female subjects to touch by male data collectors is the most positive, fits well with previous findings that females are touched by significant others more than males, and that within any relationship, females report being touched more than touching (Jourard, 1966 and Henley, 1977). It is suggested that females, who have had more experience as recipients of touch from significant others (Henley and Mayo, 1981), may be more comfortable than males when receiving momentary interpersonal touches from strangers.

Findings show that the condition in which a male data collector contacts male subjects produces the most negative ratings. The explanation of this finding is to be found in Henley's (1977) speculations about the results of her study concerning solidarity and status. She found that people had expectations about touching and being touched by others in particular relationships to them. Secondly, she found that touching was affected by the situational context. The situations in which one person was more likely to touch another were those in which one person had some dominance over the other. In our

society men are regarded as having higher status than women. When a female is contacted by a male, there is no threat to the balance of power, yet when a male contacts a male, the balance is threatened. It may be suggested that, for this reason, most negative ratings have occurred in the conditions in which male subjects were touched by male data collectors..

The evaluation of the affective state scales revealed no effect for the library data, whereas some significant effects were observed in the supermarket data. The following are potential explanations for these findings. Consider the students to be buyers and the supermarket and the library as the market offering goods that are of interest to the students. From a marketing point of view, a buyer goes through a process consisting of need arousal, information search, evaluation behavior, purchase decision and post purchase feelings. At each decision stage, characteristics of the buyer, product, seller and selling situation interact to influence the buying outcome (Kotler, 1980). In this mini model of a market, it is necessary to distinguish the supermarket (a profit-seeking organization which is in competition) from the library (a non-profit organization which does not face competition). The difference is that between a responsive versus a nonresponsive organization (Kotler, 1975). The supermarket, as it faces competition, cannot afford to serve the customer's needs less than optimally. Therefore incoming information is taken seriously and the necessary adjustments in product, services and procedures are made. The library, on the other hand, is



not in a responsive mode for dealing with its constituent public. Being a nonprofit organization and not facing active competition, the library shows the tendency to routinize its operations and seems to maintain traditional policies, procedures and products. The library's insensitivity for the customers' needs and interests may bring about undesirable consequences. Faced with rather poor products and services, the chances are high for the customer to be dissatisfied. This may account for one of the reasons for the students leaving the supermarket to have experienced more positive affect than those leaving the library.

Bearing in mind the difference in nature between the library and the supermarket, the processes a buyer goes through seem to be more typical of a potential buyer from the supermarket rather than of one from the library. The discussion related to the processes of information search, evaluation behavior and purchase decision is meaningful only when the buyer is in a position to choose among a number of alternatives (as the products available both in the supermarket and in other two organizations present on the campus) and not when the buyer is faced with only what is available (as in the library). As for the post purchase feelings, after buying a product, the consumer will experience some level of satisfaction or dissatisfaction. According to the cognitive dissonance theory, the amount of dissatisfaction will be much less than the amount of satisfaction because the consumer will try to reduce the dissonance by imputing higher performance of the

product (Kotler, 1980). The consumer has undergone some expenditure for the purchase of the good and expects immediate reward. For this reason, the post purchase feelings from the supermarket, may be discussed to be more positive compared to those from the library.

It may be suggested that different affects are being experienced by students who are about to visit the library and those who are about to visit the supermarket. Students usually use the library to study or to look up for necessary material for their studies. In other words, unlike the supermarket, visits to the library may be tension laden. The library is most often visited for the fulfillment of responsibilities and thus can be a stressful experience. The supermarket, on the other hand is generally visited for the gratification of some basic needs such as hunger or thirst. It may be argued that the differential psychological states of the students who visit the supermarket and the library may be another reason for the students leaving these locations to have experienced differential affects. Students leaving the supermarket have experienced more positive affect than those leaving the library.

The issue of "responsiveness" discussed above, the post purchase feelings and all the characteristics that interact to influence the buying outcome and the differential psychological states of the students fit in the discussion of the difference in nature between the library and the super-

market and casts more light to the understanding of the reasons for the supermarket data, especially evaluation of the personnel to have revealed significant effects.

In the discussion so far, the characteristic difference between the library and the supermarket has been the focus of interest and the significant effects observed in the supermarket data have been explained in terms of this difference. The aim of this study was not to investigate the effect of two characteristically different institutions on their visitors' evaluative feelings, but was to investigate the effect of a momentary tactile stimulation on the recipients' affective and evaluative reactions. It was hypothesized that, touch would have a positive effect on the recipients and that this effect would be generalized to evaluation of associated stimuli such as evaluation of the personnel and the environment. No main effect of touch was observed. However, this does not imply the rejection of the hypothesis that the presence of an unobtrusive interpersonal touch in social exchanges should have a positive effect on the recipients. Significant three way interactions (touch x sex of data collector x sex of subject) have been observed in the inspection of the supermarket data. As mentioned above, even if, touch had a strong effect, there exists the possibility for it to have been confounded due to different reactions of male and female subjects. Assuming touch, by itself, were a strong enough stimulation to produce positive effects, the expectation for the supermarket and the library data would be to reveal similar results.

However, the fact that the library data revealed no significant effects introduces the difference in nature between the library and the supermarket, such that the former is a public, non-profit institution, whereas the latter is a private, profit seeking organization. Considering this fact, the understanding of the different results revealed by the two sets of data becomes easier. For this reason, one is tempted to conclude that the effect of the minimal touch which could hardly be noticed by the recipients was accentuated by the difference in nature between the two settings and by the psychological state of the individual as related to the supermarket. The fact that the supermarket, a profit-seeking organization, aims at satisfying its customers together with the fact that the individual visiting the supermarket experiences positive affect, accentuated the minimal effect of touch and revealed significant effects for the affective state evaluation and for the evaluation of the supermarket personnel. The effect was not generalized to the evaluation of the supermarket environment.

No effect was observed for the environmental evaluations of either settings. However, the analysis of dimensionality of the environment scales revealed interesting findings. Factor analysis showed that, both for the library and for the supermarket, there was a two factor solution. Items good-bad (iyi-kötü), pleasant -unpleasant (hoş-nahoş), negative-positive (olumsuz-olumlu) and tasteless-tasteful (zevksiz-zevkli) constituted one factor, while scales clean-dirty

(temiz-pis) and comfortable-uncomfortable (rahat-rahatsız) constituted the other. In other words, the library and the supermarket environments were perceived in terms of 2 dimensions. One in which personal characteristics of the environment (such as good bad(iyi-kötü), positive-negative (olumlu-olumsuz) etc) were perceived and the other in which the non-personal characteristics (such as clean-dirty (temiz-pis), comfortable-uncomfortable (rahat-rahatsız)) were perceived.

An important finding of the present study was that the responses of subjects who were consciously aware of being touched did not differ from the responses of those who were not consciously aware of being touched. Thus, whether or not the touch was perceived, the previously described results displayed by the "beautiful-ugly" (güzel-çirkin) scale of the affective evaluation and by the sum of the personnel scales were evidenced. However, there is doubt about the accuracy of report of being touched. About 50 percent of the subjects who have claimed to have been touched, were not really touched. Their verbal report is to be doubted. The possibility of the subjects not to have consciously perceived the touch is more likely to be the case, since, as previously mentioned, the touch employed in this study was a minimal one that could hardly be noticed by the recipients.

## IMPLICATIONS FOR FUTURE RESEARCH

As stated in the introduction, psychological research on touch is still in its infancy. There is a great need for theoretically oriented, well-designed research on touching behavior. Although there are a number of fruitful directions for future research, some are particularly worth-while areas of inquiry. One is research directed toward assessing and measuring those variables thought to mediate reactions to touch. The intention and meaning recipients attribute to touch and the relative status differences recipients perceive between themselves and the toucher seem important mediating variables. The assessment of those variables may greatly clarify gender differences in reactions to touch.

Another good direction for future research on touch would be a systematic investigation of the role of personality factors in touching behavior. So far, most researches in touch have been primarily limited to demographic factors. Henley's (1977) study may be considered as an exception. She found that women with low scores on a measure of dominance reported to be more hesitant to touch another person (even when that person had touched them or the situation seemed to call for them to touch) than women with high scores. This study suggests that certain personality variables may be related to the likelihood of touching others, and perhaps to the meaning attributed to touch. Other personality factors, such as introversion and extroversion may also be expected to relate

to touch. It may be suggested that extraverts touch others more and react more positively to being touched than introverts.

Past research has shown that the varying reactions to being touched depended on the nature of the interpersonal contact. In general, touch is considered to be a positive stimulus for the recipient as long as (a) it does not impose a greater level of intimacy than the recipient desires (Argyle and Dean, 1965; Hall, 1963) or (b) it is not perceived as symbolic of the recipient's lower status (Henley, 1977). Following this line of research, it would be interesting to conduct an experiment aiming at establishing a threshold stimulation producing favorable impressions and the extreme tactile stimulation producing unfavorable impressions.

The present study has demonstrated that a momentary touch is considered as a positive stimulus by the recipients. The effect for touch revealed in this study was less strong than that revealed in Fisher, Rytting and Heslin's (1976) study. This finding supports results of previous research that Turkey is a culture with a high rate of contact. Although the same tactile stimulation was applied in both the library and the supermarket, only the supermarket data revealed significant effects related to touch. This finding clarifies the fact that the meaning attributed to touch does not only vary according to the kind, duration and intensity of touch, the communicators' sexes and cultural factors, but it also varies according to the situation and setting in which the touch

occurs. Thus, the replication of this study in some other private and public institutions would be a good direction for future research. Should the studies conducted in other private and public organizations reveal different results, the conclusion that the characteristics of the setting or location is an important variable mediating reactions to touch, may be reached.



## REFERENCES

- Argyle,M.: Bodily communication, London: Methuen, 1975, 56.
- Argyle,M. and Dean,J.: Eye contact, distance and affiliation.  
Sociometry, 1965, 28, 289-304.
- Cüceloğlu,D.: Türkçe Türetme Sistemi Üzerinde Psikolinguistik  
Bir Çalışma. Ankara; 1973.
- Denenberg,V.H. and Rosenberg,K.M.: Nongenetic transformation  
of information. Nature, 1967, 216, 549-550.
- Denenberg,V.H. and Whimbey,A.E.: Behavior of adult rats is  
modified by the experiences their mothers had as  
infants. Science, 1963, 142, 1192-1193.
- Duncan,W.J.: Essentials of Management. Hinsdale Illinois: The  
Dryden Press, 1975.
- Edinger,J.A. and Patterson,M.L.: Nonverbal involvement and  
social control. Psychological Bulletin, 1983, 93,  
30-50.

- Fisher, J.D., Rytting, M. and Heslin, R.: Hands touching hands: Affective and evaluative effects of an interpersonal touch. Sociometry, 1976, 39, 416-421.
- Hall, E.T.: A system for the notation of proxemic behavior. American Anthropologist, 1963, 65, 1003-26.
- Henley, N.M.: Body Politics: Power, sex and nonverbal communication. New Jersey: Prentice Hall, Inc., 1977.
- Henley, N.M. and Mayo, C.: Gender and Nonverbal behavior. New York: Springer-Verlag, 1981.
- Johnson, B.S.: The meaning of touch in nursing. Nursing Outlook, 1965, 13, 59-60.
- Jourard, S.M.: An exploratory study of body-accessibility. British Journal of Social and Clinical Psychology, 1966, 5, 221-231.
- Knapp, M.L.: Nonverbal Communication in human interaction. New York: Holt, Rinehart and Winston, 1978.
- Kotler, P.: Marketing Management. Analysis, Planning and Control. London: Prentice-Hall, Inc., 1980.
- Kotler, P.: Marketing for Nonprofit Organizations. New Jersey: Prentice-Hall, Inc., 1975.
- Levine, S.: Stimulation in infancy, Scientific American, 1960, 202, 80-86.

Montagu, A.: Touching: The Human Significance of the Skin.

New York: Columbia University Press, 1971.

Morris, D.: Intimate Behavior. New York: Random House, 1971.

Nie, N.H., Hull, C.H., Jenkins, J.G., Stenbrenner, K. and Bent,

D.H.: Statistical Package for the Social Sciences. New

York: McGraw Hill, Inc., 1975.

Osgood, C.E., May, W.H. and Miran, M.S.: Cross Cultural Univer-

sals of Affective Meaning. Urbana: Illinois University

Press, 1975.

Schefflen, Body Language and Social Order. New Jersey: Prentice-

Hall, Inc., 1972.

Sunar, D.G. and LeCompte, W.A.: People, places and physical

contact: A study of the distribution of touching

behavior. M.E.T.U. Journal of the Faculty of Archi-

tecture, 1977, 3, 85-99.

## APPENDIX A

### Instructions

"İyi günler; Boğazici Kütüphanesi (Süpermarketi) kendi personel ve servisi hakkında bir araştırma yapıyor. Kütüphaneyi (süpermarketi) temsilen, birkaç dakikanızı vererek bu anketi doldurmanızı rica ederim. Bitirince, anketi şu arkadaşına verirsiniz. Teşekkür ederim."

Sample: Kütüphane/Süpermarketten çıkan (tek başına olmak şartıyla) herkes.

Eğer tanıdık bir kişi ise, anketi diğer data collector vermeli.

Anketlerin üzerinde, dokunulup dokunulmayacağını belirten kodlar olacaktır. Bu kodlara dikkat ederek harekete geçilmesi çok önemlidir (X işareti dokun anlamına geliyor).

Anket doldurmayı reddeden deneklerin anketleri boş olarak anket toplayan kişiye verilmelidir. Anketin başına, doldurmayı reddeden kişinin cinsiyetinin not edilmesi kesinlikle unutulmamalıdır.

Dokunma şekli: Anketi veren kişinin elinin üst kısmı, anketi alan kişinin avucuna değmeli. Ancak bu temas yarım saniye kadar bir süre içinde olmalı.

Anketi veren kişi, mümkün olduğu kadar yüz ifadesini kontrol etmeli, formel bir ifade takınmalı ve araştırma gereği olan temastan başka, denekle herhangi bir şekilde temas kurmaktan kaçınmalıdır.

## APPENDIX B

BOĞAZİÇİ ÜNİVERSİTESİ KÜTÜPHANESİ HAKKINDAKİ BU ANKET 6 BÖLÜMDEN OLUŞMAKTADIR. GEREKLİ BÖLÜMLERİN BAŞINDA, O BÖLÜMLERLE İLGİLİ AÇIKLAMA VERİLMİŞTİR. AÇIKLAMALARIN DİKKATLE OKUNUP UYGUN YERLERİN İŞARETLENMESİ RİCA OLUNUR. TEŞEKKÜR EDERİZ.

- a) Yaşınız : \_\_\_\_\_
- b) Cinsiyetiniz : \_\_\_\_\_
- c) Boğaziçi Üniversitesi'nde kaçınıcı seneniz? : \_\_\_\_\_
- d) Hangi bölümdeyiniz? : \_\_\_\_\_

Aşağıda, II., III. ve IV. bölümlerde bir takım karşıt sıfatlar 1'den 7'ye kadar derecelendirilmiştir. Örneğin, 1'in iyi 7'nin de kötü olduğunu varsayarsak, aradaki sayılar iyiden giderek kötüye varan dereceleri belirtmektedir.

Bu derecelendirmeye göre, şu anda kendinizi nasıl hissettiğinizi en iyi hangi sayı belirtiyorsa, onu daire içine alınız.

|           |   |   |   |   |   |          |
|-----------|---|---|---|---|---|----------|
| a) İYİ    |   |   |   |   |   | KÖTÜ     |
| 1         | 2 | 3 | 4 | 5 | 6 | 7        |
| b) NAHOŞ  |   |   |   |   |   | HOŞ      |
| 1         | 2 | 3 | 4 | 5 | 6 | 7        |
| c) OLUMLU |   |   |   |   |   | OLUMSUZ  |
| 1         | 2 | 3 | 4 | 5 | 6 | 7        |
| d) ÜZGÜN  |   |   |   |   |   | SEVİNÇLİ |
| 1         | 2 | 3 | 4 | 5 | 6 | 7        |
| e) GÜZEL  |   |   |   |   |   | ÇİRKİN   |
| 1         | 2 | 3 | 4 | 5 | 6 | 7        |
| f) RAHAT  |   |   |   |   |   | RAHATSIZ |
| 1         | 2 | 3 | 4 | 5 | 6 | 7        |

I. Kütüphane personeli hakkındaki görüşlerinizi, aşağıdaki derecelendirmede hangi sayı en iyi belirtiyorsa, onu daire içine alınız.

|                        |   |   |   |   |   |                |
|------------------------|---|---|---|---|---|----------------|
| a) KÖTÜ                |   |   |   |   |   | İYİ            |
| 1                      | 2 | 3 | 4 | 5 | 6 | 7              |
| b) HOŞ                 |   |   |   |   |   | NAHOŞ          |
| 1                      | 2 | 3 | 4 | 5 | 6 | 7              |
| c) OLUMSUZ             |   |   |   |   |   | OLUMLU         |
| 1                      | 2 | 3 | 4 | 5 | 6 | 7              |
| d) DOSTÇA              |   |   |   |   |   | DOSTÇA OLMAYAN |
| 1                      | 2 | 3 | 4 | 5 | 6 | 7              |
| e) İŞE YARAR           |   |   |   |   |   | İŞE YARAMAZ    |
| 1                      | 2 | 3 | 4 | 5 | 6 | 7              |
| f) YARDIMCI<br>OLMAYAN |   |   |   |   |   | YARDIMCI       |
| 1                      | 2 | 3 | 4 | 5 | 6 | 7              |

. Genel olarak kütüphane hakkındaki görüşlerinizi, aşağıdaki derecelendirmede hangi sayı en iyi belirtiyorsa, onu daire iç içine alınız.

|             |   |   |   |   |   |          |
|-------------|---|---|---|---|---|----------|
| a) KÖTÜ     |   |   |   |   |   | iyi      |
| 1           | 2 | 3 | 4 | 5 | 6 | 7        |
| b) HOŞ      |   |   |   |   |   | NAHOŞ    |
| 1           | 2 | 3 | 4 | 5 | 6 | 7        |
| c) OLUMSUZ  |   |   |   |   |   | OLUMLU   |
| 1           | 2 | 3 | 4 | 5 | 6 | 7        |
| d) TEMİZ    |   |   |   |   |   | PİS      |
| 1           | 2 | 3 | 4 | 5 | 6 | 7        |
| e) RAHAT    |   |   |   |   |   | RAHATSIZ |
| 1           | 2 | 3 | 4 | 5 | 6 | 7        |
| f) ZEVEKSİZ |   |   |   |   |   | ZEVKLİ   |
| 1           | 2 | 3 | 4 | 5 | 6 | 7        |

V. Anketi veren kişinin aşağıdaki özelliklerinin, sizi ne derecede etkilediğini işaretleyiniz.

|          | <u>Çok</u> | <u>Az</u> | <u>Hiç</u> |
|----------|------------|-----------|------------|
| Ses tonu | —          | —         | —          |
| Bakış    | —          | —         | —          |
| Temas    | —          | —         | —          |
| Koku     | —          | —         | —          |

Sizce Kütüphane:

|                                     |       |                              |       |                               |       |
|-------------------------------------|-------|------------------------------|-------|-------------------------------|-------|
| a) Çok temiz                        | _____ | temiz                        | _____ | pis                           | _____ |
| b) Çok aydınlık                     | _____ | aydınlık                     | _____ | karanlık                      | _____ |
| c) Çok sakin                        | _____ | sakin                        | _____ | gürültülü                     | _____ |
| d) Çok sıcak                        | _____ | sıcak                        | _____ | soğuk                         | _____ |
| e) Çok düzenli                      | _____ | düzenli                      | _____ | düzensiz                      | _____ |
| f) Hizmet saatleri<br>çok elverişli | _____ | hizmet saatleri<br>elverişli | _____ | hizmet saatleri<br>elverişsiz | _____ |

Eski kütüphaneyi kullanmış mıydınız?

Evet \_\_\_\_\_ Hayır \_\_\_\_\_

Evet ise, yeni kütüphane eskisine kıyasla:

|                                     |       |                              |       |                               |       |
|-------------------------------------|-------|------------------------------|-------|-------------------------------|-------|
| a) Çok temiz                        | _____ | temiz                        | _____ | pis                           | _____ |
| b) Çok aydınlık                     | _____ | aydınlık                     | _____ | karanlık                      | _____ |
| c) Çok sakin                        | _____ | sakin                        | _____ | gürültülü                     | _____ |
| d) Çok sıcak                        | _____ | sıcak                        | _____ | soğuk                         | _____ |
| e) Çok düzenli                      | _____ | düzenli                      | _____ | düzensiz                      | _____ |
| f) Hizmet saatleri<br>çok elverişli | _____ | hizmet saatleri<br>elverişli | _____ | hizmet saatleri<br>elverişsiz | _____ |



BOĞAZİÇİ ÜNİVERSİTESİ SÜPERMARKETİ HAKKINDAKİ BU ANKET 6 BÖLÜMDEN OLUŞMAKTADIR. GEREKLİ BÖLÜMLERİN BAŞINDA, O BÖLÜMLERLE İLGİLİ AÇIKLAMA VERİLMİŞTİR. AÇIKLAMALARIN DİKKATLE OKUNUP UYGUN YERLERİN İŞARETLENMESİ RİCA OLUNUR. TEŞEKKÜR EDERİZ.

- I. a) Yaşınız : \_\_\_\_\_
- b) Cinsiyetiniz : \_\_\_\_\_
- c) Boğaziçi Üniversitesi'nde kaçınıcı seneniz? : \_\_\_\_\_
- d) Hangi bölümdesiniz? : \_\_\_\_\_

Aşağıda, II., III. ve IV. bölümlerde bir takım karşıt sıfatlar 1'den 7'ye kadar derecelendirilmiştir. Örneğin 1'in iyi 7'nin de kötü olduğunu varsayarsak, aradaki sayılar iyiden giderek kötüye varan dereceleri belirtmektedir.

Bu derecelendirmeye göre, şu anda kendinizi nasıl hissettiğinizi en iyi hangi sayı belirtiyorsa, onu daire içine alınız.

|           |   |   |   |   |   |          |
|-----------|---|---|---|---|---|----------|
| a) İYİ    |   |   |   |   |   | KÖTÜ     |
| 1         | 2 | 3 | 4 | 5 | 6 | 7        |
| b) NAHOŞ  |   |   |   |   |   | HOŞ      |
| 1         | 2 | 3 | 4 | 5 | 6 | 7        |
| c) OLUMLU |   |   |   |   |   | OLUMSUZ  |
| 1         | 2 | 3 | 4 | 5 | 6 | 7        |
| d) ÜZGÜN  |   |   |   |   |   | SEVİNÇLİ |
| 1         | 2 | 3 | 4 | 5 | 6 | 7        |
| e) GÜZEL  |   |   |   |   |   | ÇİRKİN   |
| 1         | 2 | 3 | 4 | 5 | 6 | 7        |
| f) RAHAT  |   |   |   |   |   | RAHATSIZ |
| 1         | 2 | 3 | 4 | 5 | 6 | 7        |

I. Süpermarket personeli hakkındaki görüşlerinizi, aşağıdaki derecelendirmede hangi sayı en iyi belirtiyorsa, onu daire içine alınız.

|                     |   |   |   |   |   |                |
|---------------------|---|---|---|---|---|----------------|
| a) KÖTÜ             |   |   |   |   |   | İYİ            |
| 1                   | 2 | 3 | 4 | 5 | 6 | 7              |
| b) HOŞ              |   |   |   |   |   | NAHOŞ          |
| 1                   | 2 | 3 | 4 | 5 | 6 | 7              |
| c) OLUMSUZ          |   |   |   |   |   | OLUMLU         |
| 1                   | 2 | 3 | 4 | 5 | 6 | 7              |
| d) DOSTÇA           |   |   |   |   |   | DOSTÇA OLMAYAN |
| 1                   | 2 | 3 | 4 | 5 | 6 | 7              |
| e) İŞE YARAR        |   |   |   |   |   | İŞE YARAMAZ    |
| 1                   | 2 | 3 | 4 | 5 | 6 | 7              |
| f) YARDIMCI OLMAYAN |   |   |   |   |   | YARDIMCI       |
| 1                   | 2 | 3 | 4 | 5 | 6 | 7              |

IV. Genel olarak süpermarket hakkındaki görüşlerinizi, aşağıdaki derecelendirmede hangi sayı en iyi belirtiyorsa, onu daire içine alınız.

|             |   |   |   |   |   |          |
|-------------|---|---|---|---|---|----------|
| a) KÖTÜ     |   |   |   |   |   | İYİ      |
| 1           | 2 | 3 | 4 | 5 | 6 | 7        |
| b) HOŞ      |   |   |   |   |   | NAHOŞ    |
| 1           | 2 | 3 | 4 | 5 | 6 | 7        |
| c) OLUMSUZ  |   |   |   |   |   | OLUMLU   |
| 1           | 2 | 3 | 4 | 5 | 6 | 7        |
| d) TEMİZ    |   |   |   |   |   | PİS      |
| 1           | 2 | 3 | 4 | 5 | 6 | 7        |
| e) RAHAT    |   |   |   |   |   | RAHATSIZ |
| 1           | 2 | 3 | 4 | 5 | 6 | 7        |
| f) ZEVEKSİZ |   |   |   |   |   | ZEVKLİ   |
| 1           | 2 | 3 | 4 | 5 | 6 | 7        |

V. Anketi veren kişinin aşağıdaki özelliklerinin, sizi ne derecede etkilediğini işaretleyiniz.

|          | <u>Çok</u> | <u>Az</u> | <u>Hiç</u> |
|----------|------------|-----------|------------|
| Ses tonu | —          | —         | —          |
| Bakış    | —          | —         | —          |
| Temas    | —          | —         | —          |
| Koku     | —          | —         | —          |

.. Aşağıdaki cümlelerden hangisi üniversitemizde bu süpermarke-  
tin açılmasıyla ilgili düşüncelerinizi yansıtıyor?

- a) Çok iyi bir fikir
- b) İyi bir fikir
- c) Farketmez
- d) İyi bir fikir değil
- e) Kötü bir fikir

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Bu süpermarketten:

- a) Sık sık alış-veriş ederim
- b) Bazan alış-veriş ederim
- c) Çok nadir alış-veriş ederim

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Sizce bu süpermarket:

- |                                     |       |                              |       |                               |       |
|-------------------------------------|-------|------------------------------|-------|-------------------------------|-------|
| a) Çok gerekli                      | _____ | gerekli                      | _____ | gereksiz                      | _____ |
| b) Çok yeterli                      | _____ | yeterli                      | _____ | yetersiz                      | _____ |
| c) Çok sevimli                      | _____ | sevimli                      | _____ | sevimsiz                      | _____ |
| d) Çok düzenli                      | _____ | düzenli                      | _____ | düzensiz                      | _____ |
| e) Çok temiz                        | _____ | temiz                        | _____ | pis                           | _____ |
| f) Hizmet saatleri<br>çok elverişli | _____ | hizmet saatleri<br>elverişli | _____ | hizmet saatleri<br>elverişsiz | _____ |

TABLE 1- Three way ANOVA of contact, sex of data collector, sex of subject on the item "good-bad" of the affective state scales for the supermarket

| Source of Variation         | Sum of Squares | DF  | Mean Square | F      |
|-----------------------------|----------------|-----|-------------|--------|
| Main Effects                | 8.074          | 3   | 2.691       | 1.209  |
| Contact                     | 1.946          | 1   | 1.946       | .874   |
| Sex of data collector(DSEX) | 4.800          | 1   | 4.800       | 2.156  |
| Sex of subject(SSEX)        | 6.987          | 1   | 6.987       | 3.138  |
| 2 way Interactions          | 15.326         | 3   | 5.109       | 2.295  |
| Contact x Dsex              | .139           | 1   | .139        | .068   |
| Contact x Ssex              | 4.088          | 1   | 4.088       | 1.836  |
| Dsex x Ssex                 | 8.808          | 1   | .129        | 3.956* |
| 3 way Interactions          | .129           | 1   | .129        | .058   |
| Contact x Dsex x Ssex       | .129           | 1   | 3.504       | .058   |
| Error                       | 242.667        | 109 | 2.303       |        |

\*  $p < .05$

TABLE 2- Three way ANOVA of contact, sex of data collector sex of subject on the item "beautiful-ugly" of the affective state scales for the supermarket

| Source of Variation         | Sum of Squares | DF  | Mean Square | F      |
|-----------------------------|----------------|-----|-------------|--------|
| Main Effects                | 14.098         | 3   | 4.699       | 2.946  |
| Contact                     | 1.377          | 1   | 1.377       | .863   |
| Sex of data collector(DSEX) | 13.333         | 1   | 13.333      | 8.357* |
| Sex of subject(SSEX)        | 3.355          | 1   | 3.355       | 2.103  |
| 2 way Interactions          | 17.773         | 3   | 5.924       | 3.713  |
| Contact x Dsex              | 7.758          | 1   | 7.758       | 4.862* |
| Contact x Ssex              | .41            | 1   | .411        | .257   |
| Dsex x Ssex                 | 13.514         | 1   | 13.514      | 8.470* |
| 3 way Interactions          | 7.496          | 1   | 7.496       | 4.699  |
| Contact x Dsex x Ssex       | 7.496          | 1   | 7.496       | 4.699* |
| Error                       | 173.90         | 109 | 1.595       |        |

\*  $p < .05$

TABLE 3- Three way ANOVA of contact, sex of data collector, sex of subject on the item "pleasant-unpleasant" of the personnel scales for the supermarket

| Source of Variation         | Sum of Squares | DF  | Mean Square | F      |
|-----------------------------|----------------|-----|-------------|--------|
| Main Effects                | 10.040         | 3   | 3.347       | 1.715  |
| Contact                     | .327           | 1   | .327        | .168   |
| Sex of data collector(DSEX) | .133           | 1   | .133        | .068   |
| Sex of subject(SSEX)        | 7.822          | 1   | 7.822       | 4.008* |
| 2 way Interactions          | 4.455          | 3   | 1.485       | .761   |
| Contact x Dsex              | .000           | 1   | .000        | .000   |
| Contact x Ssex              | 2.069          | 1   | 2.069       | 1.060  |
| Dsex x Ssex                 | 2.267          | 1   | 2.267       | 1.162  |
| 3 way Interactions          | .079           | 1   | .079        | .041   |
| Contact x Dsex x Ssex       | .079           | 1   | .079        | .041   |
| Error                       | 11.403         | 114 | 1.952       |        |

\*  $p < .05$

TABLE 4- Three way ANOVA of contact, sex of data collector sex of subject on the item

| Source of Variation         | Sum of Squares | DF  | Mean Square | F     |
|-----------------------------|----------------|-----|-------------|-------|
| Main Effects                | 16.866         | 3   | 5.622       | 2.390 |
| Contact                     | 3.759          | 1   | 3.759       | 1.598 |
| Sex of data collector(DSEX) | 9.633          | 1   | 9.633       | 4.095 |
| Sex of subject(SSEX)        | 14.789         | 1   | 4.789       | 6.286 |
| 2 way Interactions          | 17.916         | 3   | 5.972       | 2.538 |
| Contact x Dsex              | 13.340         | 1   | 13.340      | 5.670 |
| Contact x Ssex              | 9.069          | 1   | 9.069       | 3.850 |
| Dsex x Ssex                 | 12.667         | 1   | 12.667      | 5.384 |
| 3 way Interactions          | 17.565         | 1   | 17.565      | 7.466 |
| Contact x Dsex x Ssex       | 17.565         | 1   | 17.565      | 7.466 |
| Error                       | 268.210        | 114 | 2.353       |       |

\*  $p < .05$

TABLE 5- Three way ANOVA of contact, sex of data collector, sex of subject on the item "useful-useless" of the personnel scales for the supermarket

| Source of Variation         | Sum of Squares | DF  | Mean Square | F      |
|-----------------------------|----------------|-----|-------------|--------|
| Main Effects                | 15.943         | 3   | 5.314       | 2.458  |
| Contact                     | 3.636          | 1   | 3.636       | 1.682  |
| Sex of data collector(DSEX) | 4.800          | 1   | 4.800       | 2.200  |
| Sex of subject(SSEX)        | 15.783         | 1   | 15.783      | 7.299* |
| 2 way Interactions          | 11.891         | 3   | 3.964       | 1.833  |
| Contact x Dsex              | 6.025          | 1   | 6.025       | 2.786* |
| Contact x Ssex              | 7.891          | 1   | 7.891       | 3.649* |
| Dsex x Ssex                 | 9.182          | 1   | 9.182       | 4.246* |
| 3 way Interactions          | 19.955         | 1   | 9.955       | 9.228  |
| Contact x Dsex x Ssex       | 19.955         | 1   | 9.955       | 9.228* |
| Error                       | 245.506        | 114 | 2.162       |        |

\*  $p < .05$

TABLE 6- Three way ANOVA of contact, sex of data collector sex of subject on the item "nothelpful-helpful) of the personnel scales for the supermarket

| Source of Variation         | Sum of Squares | DF  | Mean Square | F      |
|-----------------------------|----------------|-----|-------------|--------|
| Main Effects                | 12.384         | 3   | 4.128       | 2.127  |
| Contact                     | 11.349         | 1   | 11.349      | 5.848* |
| Sex of data collector(DSEX) | 6.533          | 1   | 6.533       | 3.367  |
| Sex of subject(SSEX)        | 5.834          | 1   | 5.834       | 3.006  |
| 2 way Interactions          | 6.383          | 3   | 2.128       | 1.096  |
| Contact x Dsex              | 6.086          | 1   | 6.086       | 3.136  |
| Contact x Ssex              | .517           | 1   | .517        | .267   |
| Dsex x Ssex                 | 1.240          | 1   | 1.240       | .639   |
| 3 way Interactions          | .162           | 1   | .162        | .084   |
| Contact x Dsex x Ssex       | .162           | 1   | .162        | .084   |
| Error                       | 221.227        | 114 | 1.941       |        |

\*  $p < .05$

TABLE 7- Three way ANOVA of contact, sex of data collector, sex of subject on the sum of the personnel scales for the supermarket

| Source of Variation         | Sum of Squares | DF  | Mean Square | F      |
|-----------------------------|----------------|-----|-------------|--------|
| Main Effects                | 265.924        | 3   | 88.641      | 2.404  |
| Contact                     | 100.227        | 1   | 100.227     | 2.719  |
| Sex of data collector(DSEX) | 140.833        | 1   | 140.833     | 3.820* |
| Sex of subject(SSEX)        | 247.500        | 1   | 247.500     | 6.713* |
| 2 way Interactions          | 177.484        | 3   | 59.161      | 1.605  |
| Contact x Dsex              | 150.629        | 1   | 150.629     | 4.086* |
| Contact x Ssex              | 57.018         | 1   | 57.018      | 1.547  |
| Dsex x Ssex                 | 115.200        | 1   | 115.200     | 3.125  |
| 3 way Interactions          | 127.119        | 1   | 127.119     | 3.448  |
| Contact x Dsex x Ssex       | 127.119        | 1   | 127.119     | 3.448  |
| Error                       | 4.262.831      | 114 | 36.867      |        |

\*  $p < .05$

TABLE 8- Three way ANOVA of contact, sex of data collector sex of subject on the item "pleasant-unpleasant" of the personnel scales for the library

| Source of Variation         | Sum of Squares | DF  | Mean Square | F      |
|-----------------------------|----------------|-----|-------------|--------|
| Main Effects                | 10.763         | 3   | 3.588       | 1.921  |
| Contact                     | 2.123          | 1   | 2.123       | 1.137  |
| Sex of data collector(DSEX) | 7.367          | 1   | 7.367       | 3.944* |
| Sex of subject(SSEX)        | 9.326          | 1   | 9.326       | 4.993* |
| 2 way Interactions          | 9.114          | 3   | 3.038       | 1.627  |
| Contact x Dsex              | 2.779          | 1   | 2.779       | 1.488  |
| Contact x Ssex              | 2.771          | 1   | 2.771       | 1.483  |
| Dsex x Ssex                 | 9.072          | 1   | 9.072       | 4.857* |
| 3 way Interactions          | 4.073          | 1   | 4.073       | 2.180  |
| Contact x Dsex x Ssex       | 4.073          | 1   | 4.073       | 2.180  |
| Error                       | 308.189        | 165 | 1.859       | .888   |

\*  $p < .05$