Tactile Stimulation and Consumer Response

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Tactile behavior is a basic communication form as well as an expression of interpersonal involvement. This article presents three studies offering evidence for the positive role of casual interpersonal touch on consumer behavior. More specifically, it provides initial support for the view that tactile stimulation in various consumer behavior situations enhances the positive feeling for and evaluation of both the external stimuli and the touching source. Further, customers touched by a requester tend to comply more than customers in no-touch conditions. Implications for consumer behavior theory and research are discussed.

The scene was a university library. It could just as easily have been the local supermarket, bank, or restaurant. What happened took half a second, and it was not noticed by the recipients. Remarkably, however, it influenced the recipients' evaluation of the library. Fisher, Rytting and Heslin (1976) investigated the effects of a brief "accidental" touch in a nonintimate context. They had male and female clerks return library cards to some students by placing their hands directly over the students' palms, making physical contact; other students were not touched. Outside the library, students were given an instrument to measure their evaluation of the library. Students who were touched, especially the women, evaluated the library significantly more favorably than those who were not touched.

The study of touch as a nonverbal communication is emerging as an important topic in the social sciences (see Hall and Veccia [1990] and Heslin and Alper [1983] for a review). Some investigators suggest that half or more of the variability of response in interpersonal communication can be attributed to nonverbal factors such as touch (Mehrabian 1981). Surprisingly, research on the role of touch on consumer behavior and its implication for consumer research is extremely rare.

This article describes an initial exploration of this subject in consumer research by first presenting some theoretical considerations linking touch to consumer behavior. Second, the article extends a recent pilot experiment and introduces two studies designed to examine the influence of perfunctory touch in common consumer situations, on consumers' evaluations of the situation, on their attitude toward the toucher, and on their response to a request made by a touching source. Third, by drawing on the research results, theoretical and practical implications for consumer behavior communication and research are made. Finally, further investigations into the role of touch on consumer behavior and new avenues for consumer research are suggested.

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THEORETICAL FRAMEWORK

The available information on the meaning of touch is scarce and ambiguous. The following discussion represents early ground-breaking efforts. "The inherent ambiguity of the message of touch limits the precision with which it can be described, and to date, no comprehensive theory of tactile communication exists" (Major 1981, p. 16). Based on a recent rigorous examination of the literature on touch and behavior, Rose (1990, p. 315) claims that "although touch clearly has important functions it is not clear that it plays any sort of one unique role in interpersonal communication." The ambiguity of touch in interpersonal behavior has also been recognized by Argyle (1988) and Johnson and Edwards (1991).

Traditionally, touch has been seen as synonymous with affection and warmth. Montagu (1971) suggested that touch and love are indivisible; Mehrabian (1981) equated touch with friendship and warmth; Heslin and Alper (1983) associated touch with involvement and gaining attention, while Jones and Yarbrough (1985) made an empirical attempt to study the meaning of touch as reported by recipients. Their results reveal 12 distinct and, they claim, relatively unambiguous meanings such as appreciation, soliciting support, gaining attention, greeting, affection, compliance, sexual interest, aggression, departure, announcing a response, friendship, and hybrid meanings.

Most of the literature on touch is based on the assumption that the individual reaction to touch is formed in childhood. Reite (1990), for example, suggested that the association of touch with stress reduction at an early age may result in a positive reaction to being touched

for most individuals, assuming that the touch and body areas involved are appropriate for the setting.

The behavioral response to touch will depend on the touching situation or context as well as on the sex of the source and/or the recipient. Research has shown that people are more likely to comply with requests from touching than from nontouching solicitors when the solicited response is valid (Willis and Hamm 1980). An examination of the literature makes it apparent that touch has different influences on men and women. Generally, women respond more positively than men to being touched (Stier and Hall 1984). However, it is not clear from previous research whether a casual touch by a male or female stranger also has a stronger positive influence on females and, if so, under what circumstances.

Touch and Buyer Behavior

Shopping is a frequent personal behavior. However, many consumers view shopping as a diversion from daily routines, a means of self-gratification, a source of sensory stimulation, and a way of socializing. It is well established in the literature that shopping is a social experience outside the home that includes social encounters with salespeople. Stone (1954) even argued that consumers form strong personal attachments to store employees as a substitute for social contact. Assael (1987) shows that salespeople's prosocial behavior is an important source of inspiration for consumers' in-store behavior.

A salesperson's influence on the customer comes from many sources of communication, some verbal and many others nonverbal. It is clear, however, that a salesperson's success will depend largely on his/her credibility, friendship, and warmth as perceived by the customer. It is a familiar experience that words do not always convey the truth. It is difficult to obtain internal evidence from the words themselves to indicate whether the salesperson is telling the truth or not. Nonverbal signals, on the other hand, are regarded as less controlled and are commonly perceived by recipients to be more genuine (Rose 1990). In fact, customers depend on nonverbal cues for evidence of truth telling.

Although the mechanisms that underscore the relationship between touch and recipients' responses remain unclear, the few explanations available in the literature guide the conceptualizations of the role of touch on buyers' behavior presented here. Our approach is based on the theory of relational communication (Parks 1977) and the nonverbal communication models within the theory. Relational communication analysis begins with the idea that nonverbal communication contains both an appeal or relational component and an interpersonal bond component. The theory stems from the fundamental observation that nonverbal communication, such as touch, during a request encounter will result in more social influence as a result of an increase in attentional arousal and perceived interpersonal intimacy.

Drawing from the theory of relational communication and the empirical literature on the role of touch in interpersonal communication, three general (and interrelated) effects on consumer behavior are suggested. First, in the right context, nonreciprocal touch should make consumers feel more positive about the situation surrounding the touching events. The mechanisms underlying this link were advanced by some investigators (e.g., Patterson, Powell, and Lenihan 1986) who showed that touch enhances one's general positive feelings and mood and increases attentional arousal, which subsequently influences one's evaluation of the external stimuli surrounding the touch situation. Therefore, in the shopping context in which customers seek social support and affection, proper touch will produce overall positive feelings toward the store.

Second, touch can affect the way the toucher is perceived by recipients. Individuals associated with the human potential movement (encounter groups, etc.) have long maintained that touching leads to a person liking the toucher. Limited research suggests that touch plays an important role in shaping the image of the toucher and in enhancing interpersonal involvement. It has been shown, for example, that counselors who touch clients are more positively perceived than those who do not. They are also judged to be more emphatic (Pattison 1973). Others have suggested that touching another person during a social encounter may increase the recipient's feelings of social attachment, intimacy, and, therefore, liking (Mehrabian 1981). More recently, Patterson et al. (1986) have argued that people tend to attribute a multitude of positive characteristics to the toucher and are willing to exercise certain positive behaviors toward that person. The above conceptualization can be used to underscore the role of touch on customers' perceptions of the touching server. Tactile stimulations will produce a feeling of social attachment and personal involvement while also facilitating customers' perceptions of salespeople's trustworthiness and warmth, which will enhance their liking.

Finally, touch may play an important role in persuasion. The limited literature on this topic would suggest that consumers will comply more readily with a request made in conjunction with an interpersonal touch. Kleinke (1977) found that subjects returned a dime left in a phone booth significantly more often to the "telephone caller" who touched them than to the caller who did not. Similarly, Hornik and Ellis (1988) showed that touched individuals were more likely to agree to participate in mall intercept interviews. On the basis of these studies Rose (1990) maintains that the recipient tends to assume that the toucher is in genuine need and that the toucher likes and trusts him. The perception of either a great need or a positive feeling tends to increase compliance.

Perhaps the most basic meaning of touch in the buying setting is that an interpersonal bond is being offered or established by the server. Like other verbal and nonverbal communication, touch seems to strengthen other messages. The assertive component of touch might also influence the recipient. In short, we propose the following mechanism: touch exerts influence on customers' behavior by enhancing liking of the salesperson and by creating higher emotional involvement with the shopping situation. In addition, a touched customer might be more inclined to comply or help the server because touch increases feelings of intimacy and closeness to the touching source.

Summary

The preceding conceptualization and some of the empirical evidence suggest several interesting relationships between tactile stimulation and buyer behavior. Specifically, it is posited that in-store touch will enhance customers' positive attitudes toward the store and the server and encourage shopping behavior.

The studies presented here were designed to assess the effect of touch on consumers' responses in legitimate daily and common purchasing situations: first, on customers' evaluations of a store (the external stimuli); second, on the customers' evaluations of the server (the touching source); and third, on the willingness of the recipient to comply with a request. Actually, the two later investigations were prompted by the results of the first pilot study, which alluded to the potential effects of touch on consumers' behavior.

Most research on the influence of nonverbal communication like touch tends to be laboratory studies in contrived situations. More recently, there has been a growing concern for the fact that laboratory studies and the results they produce may have little to say about how touch actually influences behavior in natural settings. This problem has led researchers to suggest that rigorously designed experiments be carried out in more realistic field settings. (For a comprehensive review on this issue, see Scherer and Ekman [1982].) Therefore, all three studies reported here were conducted in the field in genuine buying or consumption situations. In addition, an attempt was made, wherever possible, to compare the influence of the source on male and female customers using cross-sex and same-sex interactions.

METHODS

Overview

The overall design and most of the basic methods employed were purposely retained in the three studies. Specifically, all experimental groups were touched and compared to (no-touch) control groups. Second, all three studies were conducted in realistic field settings where customers were touched during genuine purchasing situations. These situations were chosen because they facilitated proper experimental manipulations and control over the actions of the experimenters. They also provided good methods for assessing qualitative and quantitative behavioral responses. Third, because of the complexity of the study procedures and the experimental manipulations, particular emphasis was placed on experimenter training and control. To ensure that all experimenters used the same touching method, maintained a normal body posture, and followed the specified sampling procedures and recording methods, each experimenter completed at least one rigorous training session as well as a pretest procedure.

Specifically, before conducting the experiment, experimenters practiced with role-playing subjects. Professional observers recorded their behavior during the practice and pretest sessions to ensure that it would be possible to manipulate the experimental treatments in a consistent manner. These treatments included touching the subject on the arm or shoulder and maintaining a normal approach throughout the interaction. The alternative behavior was a control no-touch condition: experimenters were instructed and trained to maintain normal behavior without touching. Experimenters in both the touch and no-touch conditions were at all times pleasant and friendly to customers. They smiled during each approach and maintained a constant interaction distance. All these types of training procedures and touching manipulations have been shown in previous research to be reliable and effective (e.g., Kleinke 1980; Major, Schmidlin, and Williams 1990; Stier and Hall 1984).

Because of concern for possible distortions in the field, rigorous measures of control were also administered during the experiment. Each experimenter was accompanied by a member of the research team, who supervised and recorded the entire procedure from a distance. It should be noted that, in addition to reporting the experimenter's performance, each observer was asked to report any unusual subject reactions, such as interaction break-offs or evidence of restlessness or discomfort. Also, between-experimenters tests were conducted within each experimental condition to reveal possible experimenter effect beyond the designed manipulation. Those experimenters who felt severely uncomfortable with the methodology were allowed to drop out of the experiments.

The methods and results of the three studies will be presented below, together with a brief discussion of conclusions reached through the analysis of the predicted effects. A total of 206 subjects participated in study 1, and 248 and 217 subjects completed studies 2 and 3, respectively. According to statistical power tables prepared by Cohen (1987), these sample sizes should be adequate to test medium effect sizes (ES) at the .05 level of significance with a power in the range of .90–.95. These conditions also adhere to the standards described by Sawyer and Ball (1981) in their discussion of statistical power in marketing and consumer behavior

research. Obviously, the methods and procedures of all three studies were not identical. The differences are noted below for each study.

STUDY 1

The first study was part of a comprehensive project investigating patterns of shopping-time behavior. An attempt was made to use this opportunity to explore whether touch would significantly affect subjects' shopping times and store evaluations. As noted before, the result of this pilot study prompted us to further investigate possible touch effects on consumer behavior. Our results have been described in detail in a companion note (Hornik 1992). To review briefly, 286 shoppers were approached by three male and three female experimenters as they entered a large bookstore. As a lone shopper entered the store, he/she was greeted by an experimenter who handed him/her a four-page catalog specifying items, prices, discounts, credit, etc. During alternate one-hour periods, the experimenter either touched the subject lightly on the upper arm or did not.

At the end of the shopping trip, all shoppers had to proceed to the cash register to stamp their parking coupon for exit time. The experimental subjects were approached by interviewers, who recorded their shopping time and the amount on the sales slip and asked each shopper to fill out a brief store-evaluation card, which entitled him/her to participate in a drawing.

Three measures were used to evaluate the influence of touch on shoppers' behavior: shopping time, store evaluation, and amount of purchase. Three ANOVAs were performed for each measure to analyze the results of the 2 (touch vs. no touch) × 2 (experimenter's sex) × 2 (subject's sex) factorial design. These analyses revealed a positive main effect caused by touch for all dependent measures. The influence on mean shopping time (22.11 minutes for the touch group and 13.56 minutes for the no-touch group) was significant ($F(1,245) = 8.27, p < .01, r = .18$).[1] Touched shoppers responded more favorably toward the store ($\bar{X} = 3.2$ vs. $\bar{X} = 2.1, F(1,241) = 3.92, p < .05, r = .18$) and purchased more than no-touch subjects ($15.03 vs. $12.23, $F(1,245) = 4.86, p < .05, r = .14$). Analysis by subjects' gender showed that touch was more influential on female shoppers than on male shoppers but affected only one dependent measure—shopping time ($F(1,115) = 3.18, p < .08, r = .16$).[2]

The pilot study results supported the predicted effect of touch not only on shopping time but also on the way consumers evaluated the store, as well as the effect on their purchasing behavior. These results originated the propositions of studies 2 and 3: touch might influence consumers' perceptions of the toucher and facilitate higher compliance, respectively.

STUDY 2

The second study was designed to investigate the influence of touch on customers' evaluations of the toucher during a consumption activity. This was operationalized using a common expression of appreciation to a server—tipping (Lynn and Grassman 1990).

Crusco and Wetzel (1984) studied the effect of touching on the tipping behavior of single customers. This experiment is not only a replication but also a significant extension of their study. First, the current experiment investigated a possible server-customer gender interaction effect. Second, as suggested by others (e.g., Caballero and Pride 1984), this study looked into the possible influence of server attractiveness on customers' behavior. Third, this study focused on the reaction to touch by mixed couples. An attempt was made to compare the results to those of Crusco and Wetzel's (1984) study by focusing on the effect of touch, by a waiter or waitress, on the customer in the presence of a companion of the opposite sex.[3] Fourth, this study contains additional dependent variables to measure the customers' evaluations of the servers.

Experimenters

The experimenters were four part-time waiters and four part-time waitresses employed by a large restaurant. They were selected from a pool of 27 servers on the basis of their physical attractiveness, following a pretest on this factor.

Physical attractiveness has been an important topic of research in the social sciences. There is ample evidence to suggest that an attractive person may be more effective in the interpersonal context of selling than an unattractive one (Caballero and Pride 1984). The results of studies showing that a physically attractive person facilitates behavior and engenders a higher rate of compliance have been interpreted using various theoretical explanations such as social adaptation theory (Kahle and Homer 1985).[4]

A two-stage procedure was used here to select the eight experimenters, four of whom (two waiters and two waitresses) were scored as highly attractive and four of whom (two waiters and two waitresses) were scored low. First, two weeks prior to the study, a group of cus-

[1] The following formula was used, throughout the paper, to calculate the magnitude of all experimental effects (effect size):

$$r = (\text{eta}) = \sqrt{\frac{(F)(df\,\text{effect})}{(F)(df\,\text{effect} + (df\,\text{error})}};$$

Rosenthal and Rosnow (1984, p. 356).

[2] Effect size measure led me to not dismiss this interaction effect as insignificant and unworthy of further attention.

[3] The decision to investigate mixed-couple customers was also prompted by the fact that most customers dining at the restaurant being studied were mixed couples.

[4] A comprehensive review on this topic can be found in Beney (1987); Debono and Teleca (1990).

tomers were asked to rate various attributes of the restaurant, including the physical attractiveness of its servers. The procedure and measure were adopted from Simpson, Lerma, and Gangestad (1990). Specifically, the measure was a seven-point scale, with seven representing high attractiveness. Twelve servers (six male and six female) were selected for the attractiveness treatment.[5] The second stage was a pretest of the experimental conditions. The servers selected as experimenters were those who scored high/low on attractiveness and who also received a high evaluation by the trainers on the way they conducted the experimental manipulations. Experimenters were not informed of the experimental hypotheses. Each was asked to approach approximately the same number of randomly assigned subjects.

Subjects and Design

A total of 248 mixed-couple diners participated in the second experiment. Subjects were assigned randomly to each cell in a 2 (touch vs. no touch) × 2 (server's gender) × 2 (high vs. low on attractiveness server) × 2 (customer's gender) design.

Dependent Measures

Two measures were employed in this study to evaluate the influence of touch on consumers' evaluations and reactions toward the servers. First and most important, an objective measure of customer appreciation of server was obtained. Following Lynn and Grassman's (1990) study confirming the expectation that customers give tips to convey their appreciation and to buy social approval and equitable relationships, tip size as a percentage of the bill was taken as the measure of appreciation.[6]

The second dependent variable was a general evaluation of the server obtained from subject response to a nine-point bipolar semantic differential scale. A similar scale was used for the third dependent variable, which aimed to assess overall attitude toward the restaurant. These last two responses were obtained by interviewers stationed near the restaurant exit as part of a routine survey conducted during the previous weeks. Five pairs, two from the touch and three from the no-touch condition, declined to complete the form. They were therefore used only for the first dependent measure.

Procedure

All experimenters went through thorough training sessions as described previously. The experiments were conducted during evening hours over five weekdays. In half the cases the server touched either the male or female subject on the arm for one second toward the end of the meal while asking if everything was all right.

TABLE 1

MEANS (SD) OF MALE AND FEMALE DINERS' TIPPING AND EVALUATION OF SERVERS AND EVALUATION OF RESTAURANT BY TOUCHING CONDITIONS AND SERVERS' SEX AND ATTRACTIVENESS

	Tipping		Evaluation of server[b]		Evaluation of restaurant[c]	
Experimenters[a]	Male	Female	Male	Female	Male	Female
Male (HA):						
Touch	16.35	17.96	3.27	3.49	2.78	2.98
	(6.49)	(8.23)	(1.21)	(1.27)	(1.07)	(1.12)
No touch	14.41	14.51	2.42	2.48	2.13	2.17
	(5.13)	(6.12)	(.86)	(.85)	(.79)	(.81)
Male (LA):						
Touch	16.04	16.21	2.88	2.94	2.55	2.73
	(6.20)	(8.11)	(1.03)	(1.14)	(.91)	(1.03)
No touch	14.07	14.12	1.83	1.93	2.07	2.11
	(4.78)	(5.84)	(.77)	(.80)	(.77)	(.79)
Female (HA):						
Touch	16.92	19.82	3.31	3.53	2.81	3.04
	(6.70)	(8.61)	(1.09)	(1.38)	(1.06)	(1.09)
No touch	14.67	15.25	2.54	2.57	2.46	2.31
	(5.27)	(6.37)	(.89)	(.97)	(.95)	(.88)
Female (LA):						
Touch	16.63	16.39	2.79	2.69	2.60	2.72
	(6.71)	(8.29)	(.90)	(1.02)	(.92)	(.96)
No touch	14.52	14.27	1.82	1.95	2.11	2.14
	(4.87)	(5.97)	(.76)	(.81)	(.77)	(.78)
Total:						
Touch	16.51	18.84	3.07	3.25	2.69	2.84
	(6.49)	(8.21)	(1.08)	(1.13)	(1.03)	(1.10)
No touch	14.49	14.51	2.20	2.27	2.14	2.21
	(5.17)	(6.18)	(.91)	(.82)	(.84)	(.82)

[a]HA = high attractive, LA = low attractive.
[b]Extremely good (+4), neutral (0), extremely poor (−4).
[c]Superior restaurant (+4), neutral (0), inferior restaurant (−4).

Results of Study 2

Table 1 contains the means for all experimental cells, while Table 2 reports all significant results obtained by the ANOVA for each of the three dependent measures.

Rate of Tipping. The highest average tip (19.82 percent) was obtained from the female diners in the touched condition served by an attractive waitress. The lowest average tip (14.07 percent) was from male diners in the no-touch condition served by a waiter rated low on attractiveness. This figure was close to the average normal tip of 13.8 percent for mixed pairs in this restaurant. The mean scores also show that touched male diners tipped on the average 2 percent more than no-touch males, whereas the mean differences between touched and no-touch females is much higher—over 4 percent.

[5]The experimenters selected received a high interjudge reliability score. The correlation coefficient obtained for ratings by males vs. by females on all 12 was .87.

[6]Although the person touched was recorded, obviously, no data could be obtained on who actually made the tip decision.

TABLE 2

SUMMARY OF ANOVAS FOR RESPONSE MEASURES: STUDY 2

		Percent tipping		Evaluation of server		Evaluation of restaurant	
Source	*df*	SS	*F*	SS	*F*	SS	*F*
Touch (T)	1	8.7	6.4**	9.8	7.6**	6.1	4.3*
Server gender (S)	1	2.1	1.4	2.8	1.9	1.2	.6
Customer gender (C)	1	3.2	4.0*	2.6	2.1	.9	.4
Server attractiveness (A)	1	2.9	3.7*	2.4	1.9	.3	.5
T × C	1	6.3	4.1*	7.4	4.4*	4.7	3.3+
T × A	1	3.4	2.1	5.0	4.1*	2.8	1.9
T × C × A	2	5.8	3.4+	4.2	2.4	2.2	2.3

NOTE.—SS = sum of squares.
+$p < .1$.
*$p < .05$.
**$p < .01$.

The ANOVAs reveal a significant main effect for touching on tipping ($F(1,214) = 6.4$, $p < .01$, $r = .17$). In addition, customer's gender and server's physical attractiveness are also statistically significant ($F(1,214) = 4.0$, $p < .05$, $r = .14$; $F(1,214) = 3.7$, $p < .05$, $r = .13$, respectively). The only main effect not found to significantly influence customer tipping was the server's gender. Table 2 also shows that, among the interactions, the following were found significant on tipping: touch by customer gender ($F(1,98) = 4.1$, $p < .05$, $r = .20$) and the three-way interaction of touch by customer's gender and server's attractiveness ($F(2,98) = 3.4$, $p < .01$, $r = .25$). No other significant interaction effects were revealed in the data for the tipping measure.

Independent *F*-tests show that servers who touched the female diner of the pair received more appreciation than those touching the male diner. This result is especially apparent when the touching server is an attractive waitress ($F(1,58) = 3.91$, $p < .05$, $r = .25$).

Evaluation of the Server. In accordance with the study predictions, the mean scores shown in Table 1 clearly reveal that touch produced higher evaluation scores of servers by both male and female diners. The highest average score was obtained from female customers touched by an attractive waitress (3.53). The lowest average score (1.82) was obtained from male subjects served, but not touched, by unattractive female servers.

The ANOVAs shown in Table 2 yielded a main effect for touch ($F(1,211) = 7.6$, $p < .01$, $r = .19$), with servers in the high attractiveness conditions obtaining the highest evaluations. As with the tipping measure, the servers' gender did not produce significant differences in the way they were evaluated. Two significant interaction results were obtained from the data: first, touch by customer gender and second, touch by server's attractiveness ($F(1,92) = 4.4$, $p < .05$, $r = .21$; $F(1,92) = 4.1$, $p < .05$, $r = .21$, respectively). A separate *F*-test showed that servers who touched the female customer received significantly higher evaluation scores than those touching the male diner ($F(1,113) = 5.15$, $p < .01$, $r = .21$).

Evaluation of Restaurant. Mean restaurant evaluation scores and ANOVA results are also shown in Tables 1 and 2. The mean scores show an obvious improvement in restaurant evaluation by both male and female customers who were touched by servers. As in the previous two cases the highest mean evaluation was obtained from female diners touched and served by an attractive waitress (3.04). The lowest score was obtained for male customers served by a nontouching and less attractive waiter (2.07).

The ANOVA results reveal a significant main effect for touching on restaurant evaluations ($F(1,211) = 4.3$, $p < .05$, $r = .14$). Notable among the interactions is the significant ($F(1,92) = 3.3$, $p < .1$, $r = .19$) influence of touch by customer gender. However, neither the gender of the touched diner nor the gender or attractiveness of the touching server seem to affect the way customers evaluated the restaurant. A comparison of the evaluations between the no-touch experimental subjects and prestudy diners revealed that averages of restaurant ratings were very close.

Overall, the results of study 2 reveal that a casual touch by a waiter or waitress might be an important positive factor in the way mixed-couple diners will tip and evaluate the server and might also enhance the way the couples evaluate the restaurant.

It should also be noted that in order to check for possible unusual behavior of experimenters and subjects, two estimates were obtained. First, the written and oral notes of the observers on experimenters' and subjects' conduct were analyzed. Second, postexperimental sessions with experimenters on their own and others' behavior during the experiments were also recorded. No evidence was found that the effects could

be attributed to rival explanations that were not included in the experimental manipulations.

STUDY 3

The third experiment intended to evaluate whether touch facilitates higher customer compliance to a marketing request. Specifically, the study was designed to test shoppers' reactions to a product demonstrator who touched them while asking them to sample and buy the new product. As in the previous two studies, the third experiment was conducted in a field setting, which provided more genuine consumer responses as dependent measures.

Stimulus and Procedure

Lone adult shoppers in a supermarket were approached by four trained female demonstrators who were unaware of the study's objectives.[7] The demonstrators (experimenters) were selected from a pool of part-time employees who performed best in the training sessions. They were dressed in company uniforms bearing the company's name and logo, which were also displayed on the exhibition counter.

The demonstrators, positioned in a location within the supermarket frequently used for new product demonstrations and sampling, intercepted shoppers as they passed the exhibition counter and asked them to taste a new snack. During the alternate one-hour periods, the demonstrators either touched the subjects lightly on the upper arm while making the request or did not touch them. They were asked to approach an equal number of male and female shoppers in each experimental condition. Whether the shopper agreed or declined to taste the product, s/he was given a discount coupon to be redeemed at the cash counter and was shown the location of the product. No further interaction between the subject and the demonstrator took place.

An observer recorded the subjects' gender, the touch condition, approximate ages, and whether they tasted the product or rejected the offer. As in the two previous studies, observers who were fully aware of the study objectives were asked to report the demonstrators' conduct as well as any unexpected behavior on the part of the shoppers.

Results of Study 3

Observers' reports and study results were first analyzed to check for possible rival explanations and between-demonstrators effect on the dependent variables. Specifically, the professional observers' written and oral reports were thoroughly discussed to reveal any possible rival explanation. This analysis showed that the touch manipulation seemed to be the only independent factor in this study. Also, experimental results by demonstrators did not show significant differences between demonstrators and group results. Thus, homogeneity of experimenters and procedure was assumed.

TABLE 3

SHOPPERS' RATE OF COMPLIANCE TO A TASTING AND PURCHASING REQUEST, BY TOUCH CONDITIONS AND SUBJECTS' GENDER

Subjects	Touch	No touch	z-Value[a]	P
Tasted:				
Male (n = 106)	45/58 = 77.6	29/48 = 60.4	1.92	.03
Female (n = 111)	54/59 = 91.5	36/52 = 69.2	3.03	.001
Total	99/117 = 84.6	65/100 = 65.0	3.37	.0001
Purchased:				
Male	33/58 = 56.9	19/48 = 39.6	1.81	.03
Female	42/59 = 71.2	24/52 = 46.2	2.76	.003
Total	75/117 = 64.1	43/100 = 43.0	3.17	.001

[a]All significance tests based on normal approximation to z and one-tailed distributions:

$$z = \frac{P_1 - P_2}{\sqrt{\bar{P}(1 - \bar{P})(1/n_1 + 1/n_2)}}.$$

To evaluate compliance, two dependent variables were used.[8] The first was the subjects' willingness to taste the product, as obtained from observers' records. The second was the subjects' actual purchasing behavior, using redeemed coupons as the purchasing measure.

The touch manipulations combined with subject's sex resulted in a 2 (touch vs. no touch) × 2 (subject's gender) design. Table 3 contains the number of male and female shoppers who complied and who failed to comply with the tasting and purchasing requests in relation to the touch condition.

A standard test for significance of differences in proportions was employed, using the normal approximation to the appropriate z transforms (Guilford and Fruchter 1973). Statistical significance was calculated on a one-tail basis, since the theoretical base for the study specified the direction for anticipated differences. A review of Table 3 leads to the following conclusions.

Taste Request. The overall percentage of touched subjects who complied with the taste request was 84.6 percent, whereas only 65 percent of the no-touch (control) shoppers agreed to the taste appeal by demonstrators. The difference between the two is significant ($z = 3.37, p < .0001$). The rate of product sampling shows considerable variation between treatments, ranging

[7]No male demonstrators were available. We considered using male students instead but decided to use only the experienced female demonstrators, in order to maintain a genuine shopping situation.

[8]A third dependent variable had been initially designed for this study—store evaluation. It had to be dropped, however, at the last minute, due to a misunderstanding between the store manager and chain headquarters.

from a high of 91.5 percent for touched female shoppers to a low of 60.4 percent for no-touch male shoppers.

Table 3 reveals significant differences between the touch conditions for both male and female shoppers ($p = .02$ and $p = .001$, respectively). The rates of compliance between male and female shoppers were also compared. While no significant differences were obtained for gender effects in the no-touch condition on the taste measure ($z = .92$, $p > .1$), significant differences were revealed between touched male and female shoppers ($z = 2.13$, $p < .01$).

Purchase Request. As predicted, the number of overall coupons redeemed by the treatment (touched) group was significantly greater than for the control (no-touch) group ($p < .001$). Significant differences were also found between the touch and no-touch conditions for both male and female shoppers. The highest purchasing group was touched female (71.2 percent), while the lowest was no-touch male (39.6 percent). Finally, touch was more influential on female shoppers than male shoppers ($z = 1.63$, $p = .05$), while no significant differences were revealed between the two sexes in the control group ($p > .1$).

A chi-square analysis was also performed on the data. The results confirmed those in Table 3. Specifically, the taste and purchase rates in the different experimental conditions were compared with the compliance rates in the control (no-touch) conditions. As anticipated, the taste and purchase rates for the treatment groups were significantly greater than for the control groups ($\chi^2(2) = 25.38$, $p < .01$; and $\chi^2(2) = 21.78$, $p < .01$, respectively).

The data of the third experiment were in accord with the study's predictions: touched customers complied more with the experimenters' requests than did no-touch customers. These results were especially apparent for touched female shoppers.

LIMITATIONS

As with any controlled studies, the current experiments necessarily imply some compromise of external validity for the sake of increased measurement control. Therefore, the mode of stimuli, the type of respondents, experimenters, and instruments might have affected the magnitude or even the directions of the reported results. Hence, the possibility always exists that different consumer settings, different experimenters, or different measurement techniques could have resulted in somewhat different findings. Replications to assess these and other questions concerning validity must await further research. For example, study 2 showed the role of server attractiveness on recipients' responses. Thus, one cannot completely rule out the influence of this factor on the findings in studies 1 and 3. Future researchers, utilizing touch as an independent variable, would be advised to control for the attractiveness of the touching source during experimental manipulations.

Although the practice sessions, as well as the observers' reports, indicate that the treatments were administered in an unbiased fashion, future research might attempt to impose a stricter test for possible bias. For example, researchers may incorporate expectancy control groups in which experimenters are given different explanations of the experiments (Rosenthal and Rosnow 1984).

CONCLUSIONS

Subject to these limitations, the results of the three studies are encouraging. They constitute a contribution to the growing empirical evidence in the social sciences of the positive influence of interpersonal casual touch on recipient response. Touch connotes many meanings such as closeness, warmth, being cared for, contact, and affection—for the most part comforting feelings. This connection with closeness—the establishment of social attachment—has been popularized by one major corporation with the slogan "Reach out—reach out and touch someone."

The results of the studies presented here offer empirical support for the relationship of touch and three general dependent variables that are of considerable interest to consumer researchers. They demonstrate that touch has a positive influence on consumers' evaluations of the external stimuli surrounding the touching situation, that it contributes to the customers' positive regard for the server, and that it facilitates buyers' compliance with a request. As such, the meaning of the results is clear: a consumer's response can be influenced by touch.

The data revealed some interesting interactions, especially between touch and customer's gender (studies 2 and 3). These interactions indicate that differences in compliance rates are linked to the sex of the customer. Although significant server-gender effects (in studies 1 and 2) are not large, systematic differences as a function of server attractiveness were revealed in study 2, particularly for female customers. The issue of differences in reaction to touch by the recipient's gender is not conclusive. As in other studies (e.g., Stier and Hall 1984), part of the current research (studies 2 and 3) provides evidence that touch has more of an effect on female recipients. However, the first study failed to provide conclusive results on this point, raising the question of whether and under what conditions the gender of the recipient might produce a different response to touch.

Comparing the findings among the three current experiments with other studies (e.g., Johnson and Edwards 1991) suggests the tentative explanation that, when the response immediately follows the touch, female recipients tend to respond more than males. The more the expected response is delayed, the less apparent is the effect on females and the greater the similarity of their behavior to that of male recipients. It is proposed that

these gender differences in reactions to touch possibly reflect a tendency among women to seek more affection, warmth, and interpersonal intimacy in their social relationships than do men (Hall and Veccia 1990). Also, women tend to be more submissive than men (Rose 1990). It is possible, therefore, that immediate reaction to touch is one way for women to express their appreciation for any signs of affection and interpersonal intimacy and is an expression of their behavioral submissiveness. These suggestions, however, deserve further scrutiny in research on the effects of touch.

There is more to touch than "meets the hands." Because of the ambiguity of touch and the variety of cognitive responses to touch discussed in the literature, it cannot be claimed that the three studies reported here confirm all the underlying mechanisms offered in the theoretical sections. Further investigations should include more direct assessments and measurements of variables suggested to mediate consumers' reactions to touch. For example, how does touch, in a shopping setting, facilitates positive moods, increase attentional arousal, and enhance the feelings that an interpersonal bond was offered or established? Attempting to link all these mediators to different consumers' responses are questions for future research.

Because persuasion can be enhanced by deliberate touch, its use is of ethical as well as practical concern. Although it is a common practice in marketing to manipulate consumers to secure compliance, the ethics of the method is of paramount importance—particularly in terms of unethical applications of certain modes of touch. The issue is one of degree. Therefore, only reasonable tactile stimulation of consumers should be used and/or one should rely on other less sensitive persuasion techniques.

Future Research

Besides addressing the methodological issues discussed in the limitations section, future research should explore several areas of interest to the field of consumer research. Nonverbal communication is ubiquitous. It is used simultaneously with much of the verbal communication through body language, gestures, facial expressions, and physical touch. Like other nonverbal behavior, touching may support or contradict communication by others. A serviceperson may explain to customers that they do not need to worry about their dryer, and his or her touch may add confirmation, but it may contradict the verbalization if the serviceperson appears restless, still, or abrupt. Thus, the study of nonverbal components of behavior appears to offer a rich field for researchers interested in identifying the ways in which nonverbal communications, like touch, complement and structure the verbal interaction process in different consumption situations. The results should provide new ways to increase the understanding and effectiveness of various interpersonal communications.

Tactile stimulation in interpersonal transactions and service delivery has been virtually ignored by consumer behavior researchers. Future research might take a step toward integrating research on touch with the long tradition of research on consumer satisfaction (e.g., Oliver and Swan 1989). Similarly, greater attention should be directed to investigating possible cognitive and emotional reactions of consumers to touch and to the toucher.

More research is needed into contextual factors pertaining to touch in consumer behavior. Given the inherent ambiguity of touch, the context in which it occurs may be an important determinant of consumers' reactions. Future research should reflect situations that are encountered frequently in consumer behavior, like physical surroundings (at home, in a bank, in a bar), social surroundings (presence of other people), and antecedent states (mood).

The effect of server attractiveness was studied here in the one case where data could be obtained. It is clear that research on touch and consumer behavior requires greater familiarity with the attractiveness factor as well as other moderating variables that might exert influence on recipients' responses to touch. These might include such variables as race, age, and the social status of the interactants.

Some research on touch demonstrates that people who touch are seen as warm and caring by observers. For example, Kleinke, Meeker, and La Fong (1974) exposed college students to videotapes of couples who either touched or did not touch during the taped interaction. Touching couples were seen as significantly closer, more attentive to each other, and more relaxed than nontouching couples. It might be interesting to investigate the meaning consumers extract from observing other people touching, for example, in various television commercials. Also, it might be worthwhile to expand study 2 to include measures that will investigate the influence of touch on the individual's reactions while observing his/her spouse being touched.

Finally, it is suggested that the research paradigms employed in the present studies be extended beyond the subject of tactile communication to apply to the wide variety of nonverbal communication modes.

In conclusion, we believe that the role of touch in consumer behavior is more important than the present state of the art in consumer research would seem to indicate. There is even some evidence to suggest that it may be more important than verbal communication (Stewart, Hecker, and Graham 1987). It is certainly not less important. Therefore, further testing should be undertaken in order to provide a more comprehensive theoretical foundation and practical guidance in diverse consumer behavior situations.

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