

The Effect of Tactile Stimulation on the Purchasing Behaviour of Consumers: An Experimental Study in a Natural Setting

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Numerous researches have shown that touch increases compliance to a request made by the "toucher". Customer's behavior is also affected by tactile stimulation. No previous studies have examined the marketing implications of being touched, when the 'toucher' asks the customer explicitly to buy something. So, an experiment was carried out in which touch was used by a salesman or a saleswoman of spices to incite passersby to taste and to buy his/her products. The results show that this technique increased the rate purchases made by customers.

Touching the arm or shoulder of a person for 1 to 2 seconds when asking for a favor seems trivial. However, this brief nonverbal contact significantly influences compliance. Brockner, Pressman, Cabitt and Moran (1982) showed that a request to return a dime left in a phone booth accompanied by a light touch on the arm increased compliance from 63 % (no-touch control situation) to 96%. Similarly, when asked for a dime, passersby complied in 51% of the cases when touch was used and 29% of the cases when no-contact was made (Kleinke, 1977). In the same way, the percentage of a petition signing increased from 55 % (no touch control condition) to 81 % when a slight touch was made during the request (Willis & Hamm, 1980). Hornik and Ellis (1988) found that touch increased compliance for an interview. In their experiment, these experiments found that touch increased compliance to participate in the interviewing task and decreased respondents' perceived burden. Hornik (1987) observed that touch increased the number of persons responding to a street survey and increased compliance in answering a subsequent questionnaire. Also, when touched, people are more persistent when executing a difficult task consisting of answering a long questionnaire on very provocative subjects (Nannberg & Hansen, 1994).

Helping behavior is also affected by touch. When touched, people were more likely to answer telephones for a charity telethon for crippled children (Goldman, Kiyohara & Pfannensteil, 1985). Guéguen and Fischer-Lokou (2002) found that touch led passersby to accept more favorably to look after a large and very excited dog of a male-confederate for 10 minutes because the confederate claimed to the subjects that he had to go into a pharmacy where animals were prohibited. These experimenters found that 55 % of the subjects agreed with the request whereas 35 % agreed in the no-touch control condition. When no request of help was addressed to the subject, touch had a positive effect on spontaneous helping. Goldman and Fordyce (1983) found that when people were touched by a confederate during an interview, greater helping behavior was observed toward a

confederate who dropped several questionnaires on the ground. In a recent experiment conducted by Guéguen and Fischer-Lokou (2003) a male-confederate solicited a subject whereas he held in one of his hands a portfolio and a package of data-processing diskettes and a plan of the city in the other hand. He asked the subject to help him to found a famous place of the town. After the subject had indicated the direction, the confederate thanked him/her. In half of the cases, he briefly touch the subject on the arm. Then, the confederate took his left ground bag and turned back to the subject to move towards the direction indicated by him/her. As soon as he had made 2 meters, the confederate dropped accidentally the diskettes on the ground. Results showed that in the no-touch control condition, 63 % of the subjects helped the confederate against 90.0 % in the touch condition.

Apart from those effects on compliance to a request or on helping behavior, touch also appears as a factor of encouragement of human behavior. For instance, for a teacher, the simple fact of touching twice a student on the arm during an interview following the first evaluation of a course, led the student to improve his/her later performances, superior to those observed in a group control (Steward & Lupfer, 1987). A study conducted by Wheldall, Bevan and Shortall (1986) has shown that touch leads young children to get more involved in a task and to show less disruptive behavior in class. These experimenters asked teachers to touch their pupils as they complimented them on their results or on their behavior in class. Teachers were also instructed not to touch their pupils in other interactions. Observers in the class measured the number of disruptive behaviors shown by the pupils (getting up without permission, thumping a classmate) and the behavior marking the implication of the pupils in their school tasks (taking the adequate material, concentrating). Results showed that in two different classes where such observations were made, a reduction of about 60 % of the disruptive behavior was found following touch, compared with the average of such behavior before the adoption of this tactile encouragement. At the same time, it was found that the number of behaviors marking the implication of the pupils in their school tasks increased about 20 %. These results confirm those obtained by Kazdin and Klock (1973) even in case of particularly difficult (Clements & Tracy, 1977; Van Houten, Nau, Mackenzie-Keating, Sameoto & Colavecchia, 1982). Such positive effects of touch are also found with elderly people within the framework of manual works which are proposed to them (Howard, 1988). The effects of encouragement mediated by tactile contact are also found on health behavior. Jourard and Friedman (1970) have shown that touch leads patients in psychotherapy to speak much longer with their therapist about particularly intimate problems. The effect of encouragement aroused by a brief tactile contact is also observed with a measure of self-disclosure behavior (Pattison, 1973). Finally, the simple touch of a patient by a nurse, the day before a surgical operation, decreases his/her real stress (evaluated by physiological measures: heart rate, blood pressure) and the stress he/she perceives (self-evaluation) and increases the respect of the preoperative recommendations given to the patients (Whitcher & Fisher, 1979). Eaton, Mitchell-Bonair and Friedmann (1986) have even found that when the staff of a service for elderly people accompanied their encouragement to eat with a tactile contact, an increase of the number of calories

and proteins absorbed by the subjects was observed. These positive effects on eating behavior lasted five days after the tactile contact. All the research cited above show that touch has a positive effect on numerous behavior. Consumer behavior is also affected by tactile contact.

Several studies found that a simple touch of a patron by a waiter or waitress in a restaurant or in a bar increased his or her tips (Crusco & Wetzel, 1984; Hornik, 1992b; Lynn, Le & Sherwyn, 1998; Stephen & Zweigenhaft, 1986). Willingness to taste or test products increases when an employee touches shoppers while making the request; touching also increases the selling rate of the product (Smith, Gier & Willis, 1982; Hornik, 1992a). In the same way, a recent study conducted by Kaufman and Mahoney (1999) has shown that if a waitress touched her customers on the shoulder they drink more alcohol than if they were not touched. These later studies are particularly intriguing because no solicitation to buy something or to drink more was actually made by the "toucher". In Smith and al's (1982) and Hornik's (1992a) studies, the tactile contact was made by a demonstrator or an employee who was not the seller. In these experiments no purchasing proposition was put by the "toucher". The customer behavior was just observed after the tactile contact with an employee when he/she entered in the store.

The aim of the experiment presented below was to test the effect of touch when a proposition to buy something is made by the "toucher". This experiment is carried out in a new experimental setting in order to evaluate the power and the generalization of touch on consumer's behavior in another culture. Indeed, most of the research that have tested the effect of tactile contact on consumer's behavior were conducted in USA and have used white people as experimental subjects. According to Hall (1966) white Americans belong to a culture of non-contact and tactile contacts are influenced by culture. This cultural factor was confirmed by Jourard (1966)'s study. This author watched pairs of people engaged in a conversation in coffee shop male and female dyad in San Juan (Puerto Rico), London (Great Britain), Paris (France) and Gainesville (Florida-USA), counting the number of times that one person touched another at one table during a one-hour sitting. The results were, for San Juan, 180, For Paris, 110; for London 0 and for Gainesville, 2. To our knowledge no experiment of the effect of tactile contact on compliance or on consumer's behavior was conducted in Latin America where touch is used frequently in human interaction. Furthermore, some studies were conducted in France and shown that touch exerted a positive effect on compliance. Guéguen (2002) found that females in a street agreed more favorably to respond to a survey when touched by a female-solicitor. Guéguen and Fischer-Lokou (2002) found that touch led passersby to accept more favorably to look after confederate-dog who want to go into a pharmacy where animals were prohibited. Spontaneous altruism is also influenced by tactile contact in France Guéguen and Fischer-Lokou (2003). If these research tend to prove that touch also have an effect on helping behavior, there was no study that had tested the effect of touch on consumer behavior. The experiment presented hereafter, was conducted in order 1) to test the effect of touch in a new consumption context and with a direct solicitation to buy something addressed by a seller 2) to evaluated the generalization of

the positive effect of tactile contact on consumer behavior in a culture where such behavior was not tested before.

Hypothesis

Considering the results of the research presented above, we have hypothesized that the tactile contact made by a seller would enhance the purchasing behavior of the "touchee".

Method

Subjects: Three hundred and thirty-one men and 765 women, estimated to be between 30 and 65 years of age. Insofar, as the experiment were conducted in a natural setting with crowding and because the sample was large no information about the subjects were taken account (income groupings, age...). They were taken at random in a pedestrian street of a famous seaside resort on the west Atlantic coast in France. The difference between the sample of males and females occurred because there were more women than men in the open-air market where the experiment took place. As the participants were choose at random after the passage of 10 passersby in a place, the two samples presented the same disproportion than in the population were the samples were extracted. The experiment took place between 10.00 a.m. and 12.30 a.m. and was held on summer's Saturdays. Subjects were randomly assigned to the control or experimental conditions.

Procedure: The experiment took place in an open-air market and implied a salesman of spices for aperitifs (olives and vegetables steeped in different and varied sauces, dried fruits, ...) who was running a stall in a place with a high flow of passersby. Four sellers (2 men and 2 women) were used as confederates in this experiment. Each of them had tested the two experimental conditions (Touch/No touch).

The salesman(woman)-confederate was standing 2 meters in front of his/her stall in the middle of the passersby flow. He/she was neatly dressed with jeans and a white T-shirt. He/she was holding a small dish with olives steeped in a moderately spiced sauce. The salesman(woman)-confederate solicited the passersby in the street by holding out his/her small dish and by telling them to taste the olives. During this solicitation, the salesman(woman)-confederate touched or did not touch the passerby on the forearm. The touch versus non-touch condition was alternated after the passage of 10 passersby. If the passerby did not want to taste the products, the salesman(woman)-confederate solicited another person. If the passerby agreed to taste them, the salesman(woman)-confederate waited for the person to have an olive then showed his/her stall with a hand-gesture and told the person that he/she had 27 different kinds of sauces. The stall was situated 2 meters away from him/her and 2 young women (20 years-old) acted as sellers there. Two observers were standing close by in a place where they could both perceive the "toucher" and the behavior of the subject. One of them was instructed to note on a sheet if the subject agreed to taste the product presented by the "toucher" and if, yes or no, he/she bought something from the stall. When the person bought some product, another observer went to the stall to measure the amount of the purchase.

Then, this observer returned to his/her place after giving the first observer the amount of the purchase.

Results

Several dependent variables were used in our research. The first concerned the number of persons agreeing to taste depending on whether they had been touched or not. The second concerned the number of persons, among those having agreed to taste, who bought something on the stand. Finally, with these people, the average amount of purchases was estimated. All the values obtained are presented in the table 1, below.

We were not able to take into account the rate of purchase and the average amount of the purchase of the persons who, in control groups or in experimental groups, had not accepted to taste the product. Indeed, out of these subjects (688) only 11 people (8 in touch condition and 3 in no-touch control condition) bought something. So the frequency is not sufficient to establish statistics. It would have been necessary, indeed, to test several thousand subjects to allow us such an evaluation.

A 2 (touch/no touch) x 2 (subject's gender) x 2 (experimenter's gender) log-linear ANOVA was used to analyze the willingness to taste the product. A main effect of touch was observed on product testing ($\chi^2(1, N = 1096) = 12.47, p < .001$). When touched, 43.02% of the subjects accepted to taste the product whereas they were 32.07% in the no-touch control condition. A main effect of the experimenter's gender was found ($\chi^2(1, N = 1096) = 5.78, p < .02$): people agreed more favorably with the male-experimenter request (40.55 %) than with the female-experimenter request (33.52 %). No main effect of the subject's gender was found in the analysis ($\chi^2(1, N = 1096) = 1.93, p > .15$). The

Table 1. Summary of results for experimental conditions

	Touch	No Touch		
	Males' experimenter	Females' experimenter	Males' experimenter	Females' experimenter
Product tasting rate (in %) ¹				
Male-Subject	41.86 (86)	36.84 (76)	32.50 (80)	25.84 (89)
Female-Subject	47.96 (196)	40.51 (158)	36.28 (215)	30.10 (196)
Purchasing rate (in %)				
Male-Subject	16.87	15.79	10.00	14.61
Female-Subject	18.89	16.45	9.78	8.16
Purchasing amount (in euros) ²				
Male-Subject	3.43 (1.02)	3.17 (0.78)	3.34 (0.57)	3.28 (0.86)
Female-Subject	3.03 (0.83)	3.11 (0.88)	3.16 (0.84)	2.96 (1.06)

1) In brackets : number of subjects in each group

2) In brackets : standard-deviation

log-linear analysis of interaction showed that experimental condition interacted with subject's gender ($\chi^2(4, N = 1096) = 16.93, p < .01$) women-subjects reacted more favorably to tactile contact than men. An interaction effect with the experimental condition and the experimenter's gender was found ($\chi^2(4, N = 1096) = 20.81, p < .001$) touch appeared to be more effective when the "toucher" was a man than a woman. Despite this interaction effect, no interaction between experimenter's gender and subject's gender was found ($\chi^2(4, N = 1096) = 8.16, p > .08$) and the interaction effect between subject's gender, experimenter's gender and the experimental conditions was not significant ($\chi^2(6, N = 1096) = 11.47, p > .07$).

The 2 (touch/no touch) x 2 (subject's gender) x 2 (experimenter's gender) log-linear ANOVA was used to analyze the purchasing behavior of the subject. A main effect of touch was found ($\chi^2(1, N = 1096) = 13.35, p < .001$). When touched, 17.6 % of the subjects purchase something whereas they were 10.0 % in control condition. No main effect of customer's gender was found ($\chi^2(1, N = 1096) = 0.15, p > .30$) and of experimenter's gender ($\chi^2(1, N = 1096) = 0.08, p > .30$). Furthermore, an interaction effect between subject's gender and the experimental conditions was found ($\chi^2(4, N = 1096) = 17.09, p < .005$). Again, women-subjects reacted more favorably to tactile contact than men. An interaction effect between experimenter's gender and experimental conditions was found ($\chi^2(4, N = 1096) = 15.19, p < .01$). Again, compliance with the "toucher" was larger when the experimenter was a man than a woman. Despite the two effects with gender as an independent variable in the analysis, no interaction effect between experimenter's gender and subjects gender was found ($\chi^2(4, N = 1096) = 6.84, p > .10$) and no interaction effect with subject's gender, experimenter's gender and the experimental conditions was found ($\chi^2(6, N = 1096) = 12.08, p > .06$).

The last dependant variable was the purchasing amount of the subject. As the variable was continuous, a 2 (touch/no touch) x 2 (subject's gender) x 2 (experimenter's gender) ANOVA was used to analyze the different selling amounts of the customers. No main effect of the experimental conditions was found ($F(1/148) = 0.02, p > .30$). Subject's gender ($F(1/148) = 2.62, p > .10$) and experimenter's gender ($F(1/148) = 0.24, p > .30$) was not significant. The three two-way interaction and the three-way interaction was not significant.

Discussion

The results obtained in our experiment have shown that touch had a positive effect on customer's behavior when a direct request to buy a product was addressed by the "toucher" to the "touchee". Touch led the subjects to accept more favorably to taste the product. Such results confirmed previous experiences where the effect of touch was tested on customer's behavior (Hornik, 1992x; Smith, Gier & Willis, 1982). Moreover, our findings showed that touch led the subjects to buy more favorably the product tested. Again, these results confirmed previous experiences (Hornik, 1992a; 1992b; Kaufman & Mahoney, 1999; Smith, Gier & Willis, 1982). Furthermore, in these later studies no proposition to buy something were made by the "toucher". So, our experience

shows that when a direct request to buy a product is addressed by the seller, touch has a positive effect on compliance of the customers.

However, contrary to the study conducted by Hornik (1992a) in a store, we did not find a positive effect of touch on amount of purchases. Still, the limited choice of the products proposed and the way of conditioning and selling them (1.49 euros for 100 grams) may explain these results. Moreover, as we can see in table 1, standard deviations attest that there is a strong homogeneity of the consumers' behavior towards these products. This type of product does not constitute a basic product for which one goes to an open market. The purchase of such products was not anticipated and then may explain the homogeneity between the different groups of customers.

Two gender-effects was found in this experiment. Women-subjects reacted more favorably to tactile contact than men. These findings are congruent with some previous studies on touch (Fisher, Rytting & Heslin, 1976, Whitcher & Fisher, 1977). Some studies have found that women touched more than men (Henley, 1977; Major, 1981). Perhaps, the familiarity of tactile contact among women led them to react more favorably to touch and, in return, to accept more favorably the request of the confederate. As well, subjects complied more favorably to touch when tactile contact was used by a male-confederate. Research have found that in relation with stranger, males initiate touch more frequently than females (Henley, 1973; Stier & Hall, 1984). Again, because males use more favorably tactile contact in their interaction with a stranger this lead the subject to react more positively to touch. Employing an unusual behavior in social interaction could lead some subjects to react more negatively to the confederate and then to refuse to comply to the request. In this experiment, because initiation of touch toward a stranger is a typical male-behavior, this could led some subjects to react more negatively to a tactile contact that came from a female.

In a general way, touch had a positive effect on sales. This effect has some cultural importance because the effect of touch on consumer's behavior had not been tested before in France. All of the previous studies presented above have been carried out in United States. Some studies conducted in France show that touch has a positive effect on helping behavior (Guéguen, 2002; Guéguen and Fischer-Lokou, 2002). Furthermore the experiment presented here is the first study that had tested the effect of touch on consumer's behavior in another culture than North-American culture. According to Hall (1966) and Andersen (1988), American people belong to a culture where tactile contact between people are unusual whereas tactile contact is more commonly used in social interaction between French people (Field, 1999; Jourard, 1966). Despite the differences in the use of tactile contact in social interaction, the compliance effect of touch seems to be equivalent in both cultures. Furthermore, despite these convergent results, we can not concluded that touch could have a positive effect in each culture. Shuter (1976) in a research conducted in Costa Rica, Panama and Colombia, found substantial differences in the use of contact tactile in social interaction. Yet, these three countries are considered as contact's culture (Hall, 1966). In some case, perhaps, touch

could have a reverse effect. Jourard (1966) found no touch when observing people in Great-Britain interacting during one-hour. Why Great-Britain people do not use tactile contact in their social interaction ? What would appended if a stranger touched someone in this country when formulating a request ? Thus, further research might be needed to make sure that the effect of touch can be generalized to other cultures. Moreover, cross-cultural experiments are necessary to appreciate the power of touch on compliance to a request or on consumer's behavior. To date, these cross-cultural studies do not exist in the literature.

Obviously, with such results we evaluate, the application that the professionals of marketing and the salesmen can find by using this technique of tactile contact more often. Here, we have found that touch influenced consumers' behavior in an open environment, where a strong social proximity and numerous tactile contacts were likely to occur because of the high density of population of the market where the experiment took place. Yet, we can observe that a brief tactile contact, plays an important part on the customers behavior. Indeed, we still have to test other commercial situations in which the tactile contact could be used to influence consumer's behavior: sale from door-to-door, commercial negotiation, ... Besides, it would also be necessary to estimate the long-term effects of tactile contact or the effects of repetition of such contact in a situation of interaction between a seller and his/her customers. Some studies have shown that when the employees touched the customers, it implied a more positive perception of their competence (Wycoff & Holey, 1990) or a better appreciation of the shop (Hornik, 1992a). Thus we may conclude that the positive evaluations lead to affect positively the probability that the customer will come back to the shop or the restaurant which impressed him/her "so favorably".

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