

The Influence of Vocal Intensity and Touch on Compliance Gaining

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ABSTRACT. A bogus postcard technique was used to study the effects of touch and vocal intensity on the compliance of 248 male and female subjects with a simple request. Subjects in three American cities were approached by three female confederates and were asked to mail a postcard. A touch to the forearm accompanied half of the requests, while vocal intensity was varied as either soft, medium, or loud. Comparisons were made for rates of total compliance, initial noncompliance, and subsequent noncompliance. Contrary to expectations, vocal intensity, rather than touch, affected compliance. Results are interpreted in terms of arousal-reduction, involvement, and status-attribution views of the non-verbal communication and compliance-gaining effect.

ONE OF THE MORE POPULAR IDEAS to emerge in recent years from the empirical research on nonverbal communication and social influence is that touch facilitates compliance and prosocial behavior from strangers. This effect tends to be explained psychologically as a product of heightened involvement with or more attraction toward the touch initiator, increased arousal in response to being touched, perceptions of status associated with touch, or simply greater awareness of the need to provide assistance. Whatever the explanation, there appears to be considerable support for a touch and compliance-gaining effect in the United

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States (Patterson, Powell, & Lenihan, 1986). It should be noted, however, that the meaning, usage, and effect of touch varies considerably among cultural groups (Hall, 1966; Shuter, 1977; Watson & Graves, 1966).

Our purpose in this investigation was to extend this line of research in two ways. First, by manipulating levels of vocal intensity, we sought to determine whether the touch-compliance effect occurs under conditions that might attenuate some of the psychological factors noted above (e.g., heightened involvement, more attraction) that seem to produce increased amounts of compliance. A loud tone of voice, when combined with the touch of a stranger, might nullify the positive effect of touch on compliance by either decreasing attraction toward the toucher or making the brief encounter too unpleasant to continue. On the other hand, the positive effect on compliance that may come from a sense of increased involvement or awareness of the need to help, or attributions of status, might depend on a reasonably assertive vocal delivery—something that would be absent if the request were made in a softer-than-normal tone of voice. Second, previous assessments of compliance need to be enlarged. Typically, such assessments have been limited to dichotomous measures of immediate responses, obtained in the presence of the person making the request (e.g., requests to sign a petition, return a dime, do a survey). These procedures do not permit assessments of compliance both during and after the encounter; thus it is impossible to study the effect of touch apart from the influence of the toucher's physical presence. These measures have limited our ability to test fully some of the explanations associated with the link between touch and compliance.

Kleinke's (1977, 1980) early experiments showed that simple manipulations of touch and gaze could significantly increase rates of compliance with requests to return a dime left in a telephone booth. In a replication of the Kleinke experiment (1977) that included gender as an independent variable, Brockner, Pressman, Cabitt, and Moran (1982) also found increased rates of compliance in response to eye contact and touch, with differential rates based on eye contact being greater than those obtained for touch. In similar studies, Willis and Hamm (1980) found that a light touch on the upper arm increased compliance to sign a petition; Smith, Gier, and Willis (1982) noted that touch produced more compliance with a request to sample a new food product in a supermarket along with an increased probability of purchasing the product; and two recent studies (Hornik, 1987; Hornik & Ellis, 1988) observed more compliance to participate in a survey, among adult shoppers at a mall, when subjects received eye contact and touch than when they did not.

Various explanations for why nonverbal behavior influences compliance also have been tested. Patterson, Powell, and Lenihan (1986) found that touch increased compliance with a request to complete a bogus personality test, but that the effect of touch was not caused by increased attraction toward the experimenter who administered the touch. Rather, they concluded that the effect of touch is more likely to be based on the desire to reduce arousal, a sense of heightened

involvement, or attributions of status. In a related study, Buller (1987) found that subjects are more likely to sign a petition when their personal space is violated than when it is not. This was true even for subjects in Buller's study who scored low in a trait that would predispose them to dislike intrusive behavior.

Research in the related area of prosocial behavior is less consistent. Unlike compliance gaining, these studies involved assessments of voluntary (altruistic) behavior by subjects rather than behavior in response to a request. Goldman and Fordyce (1983) observed an interaction between eye contact and touch; subjects were more willing to assist a confederate who used either touch or eye contact than a confederate who used both touch and eye contact. A warm, expressive voice also elicited more help than did a flat, nonexpressive voice. In a subsequent study, touch was found to increase helping behavior, but only for female confederates (Paulsell & Goldman, 1984).

The research generally favors the increased likelihood of compliance in compliance-gaining contexts in which touch, eye contact, or an expressive voice immediately precedes a request. Thus, a main effect for touch on immediate compliance with a simple request might be expected. However, when vocal intensity is added factorially to the design of the study, the situation is less clear. According to the arousal-reduction view, subjects will comply most when touch is combined with increased vocal intensity if that combination produces a state of arousal in them that they choose to reduce by complying with a simple request. On the other hand, if the link to compliance is mediated by some other process (e.g., involvement with the requester, attitude toward the requester), then vocal intensity might counteract the positive effect of touch. In addition, explanations that touch may lead to compliance, in part, because of the increased status associated with touch initiation (Patterson et al., 1986) may depend on whether the touch is administered in a manner that does not mitigate perceptions of status. This view implies that a soft or weak vocal delivery might be sufficient to negate the effect of touch on compliance. In short, the vocal intensity variable has not been examined in previous studies. Therefore, in the present study, we raised the following question: If touch affects compliance with a request, will the effect be mediated by the vocal intensity used to make the request?

Of course, the absence of an interaction effect may produce a main effect for vocal intensity, regardless of whether compliance is affected by touch. Therefore, we asked a second related question: Will compliance with a request be affected by the vocal intensity used to make the request?

We also decided to explore the possibility that any effects on compliance obtained from touch or vocal intensity might be limited to responses that occur in the presence of the person making the request. According to the arousal-reduction view, in particular, much less reason for compliance would exist after the source of arousal is removed. In other words, when subjects are no longer aroused, will they still be motivated to comply with a request as a function of touch or vocal intensity? A yes response would support the view that some other process (e.g.,

attitude toward the requester, perceptions of status, awareness of need for assistance) must be operating to influence any compliance that occurs after the interpersonal encounter. Thus, we asked: Will touch or vocal intensity affect rates of compliance with a request subsequent to the initial encounter?

Finally, much of the research on compliance and prosocial behavior considers the influence of gender. Some of the studies show greater compliance or helping when subjects are approached by women than by men (Hornik, 1987; Hornik & Ellis, 1988; Patterson et al., 1986; Paulsell & Goldman, 1984); other studies show the opposite effect (Buller, 1987). One study found increased compliance among opposite-sex pairs (Brockner et al., 1982); another study found no gender effect (Smith et al., 1982). Given the lack of any consistent set of findings regarding gender, a fourth question is relevant: Will compliance with a request be affected by the gender composition of the interactants?

Method

Sample

The sample consisted of 248 adults (124 men and 124 women) approached by three confederates at major air and rail terminals in Denver, New York City, and Philadelphia. We selected air and rail terminals because of the availability of subjects who could reasonably respond to the postcard procedure described below. Subjects were randomly selected according to gender by approaching the first adult, immediately following a 10-s interval, who entered the confederate's field of vision.

Experimental Design

We used $2 \times 3 \times 2$ factorial design to examine the effects of Touch (subject touched or not touched), Vocal Intensity (either soft, medium, or loud tone of voice), and Gender of Subject (male or female) on the compliance obtained from subjects both during and sometime following a brief encounter in which the subject was asked to mail a postcard. Subjects were approached by one of three female confederates; we did not use any men because we wanted to control for the effect of gender. Our decision to use women rather than men was based, in part, on research suggesting a greater effect for female than for male requesters (Paulsell & Goldman, 1984).

Procedure

Before the experiment, three women graduate students were trained to function as the confederates. They practiced administering a light, flat-handed touch to the forearm of volunteers, using a standard request, and adjusting their vocal intensity

according to the three conditions of soft, medium, and loud. The standard request delivered to each subject was: "Excuse me (slight pause). I'm running late. Would you please mail this for me?" The postcard, which was used to code experimental conditions, was addressed to the same recipient (one of the confederates) and contained the message "I'm OK" with an initialed signature. The message and initials were written with one of 12 colored markers to visually code the specific combination of variables represented in the encounter; thus, each of the 12 cells in the design of the study was color-coded for subsequent data analysis.

One confederate was in her 20s, one in her 30s, and one in her 40s. Each wore a business suit and attempted to give the impression of being in a hurry. They attempted to standardize their performances, which included brief eye contact with each subject as the request was made. Levels of vocal intensity were pretested with a small group of volunteers (rated subjectively as soft, medium, and loud) and eventually set at 60 dB for the soft voice, 70 dB for the medium voice, and 80 dB for the loud voice. A sound meter was used to pretest and practice vocal-intensity levels at each decibel level until the confederates were comfortable and natural sounding in their performances.

We used a bogus postcard technique to measure initial and subsequent compliance. Initial compliance was measured by the number of postcards accepted. Subsequent compliance (compliance following the encounter) was measured by the number of postcards mailed to the confederate.

Results

The first question asked whether vocal intensity would mediate any effect obtained from touch on compliance. We used chi-square analysis to examine the interaction between touch and vocal intensity for total compliance, initial noncompliance, and subsequent noncompliance. The findings indicated no significant interactions for total compliance, $\chi^2(2, N = 158) = .21, p = .89$; initial noncompliance, $\chi^2(2, N = 55) = 3.58, p = .168$; or subsequent noncompliance, $\chi^2(2, N = 35) = .11, p = .94$. In addition, touch had no overall effect on rates of compliance obtained from subjects, $\chi^2(2, N = 248) = .19, p = .91$.

With respect to our second question, the data indicated a main effect for levels of vocal intensity on compliance, $\chi^2(4, N = 248) = 18.04, p = .001$. Tests for goodness of fit revealed that, although no effect was found for total compliance, $\chi^2(2, N = 158) = 2.52, p = .285$, vocal intensity affected rates of both initial noncompliance, $\chi^2(2, N = 55) = 7.03, p = .03$, and subsequent noncompliance, $\chi^2(2, N = 35) = 8.95, p = .01$. For rates of initial noncompliance, pairwise comparisons showed less noncompliance in response to the medium vocal-intensity condition than in response to the loud vocal-intensity condition, $\chi^2(2, N = 36) = 7.11, p = .008$. A comparison between the medium and soft conditions suggested more noncompliance for the latter than for the former, although the difference was not statistically significant at the .05 level, $\chi^2(2, N = 29) = 2.79,$

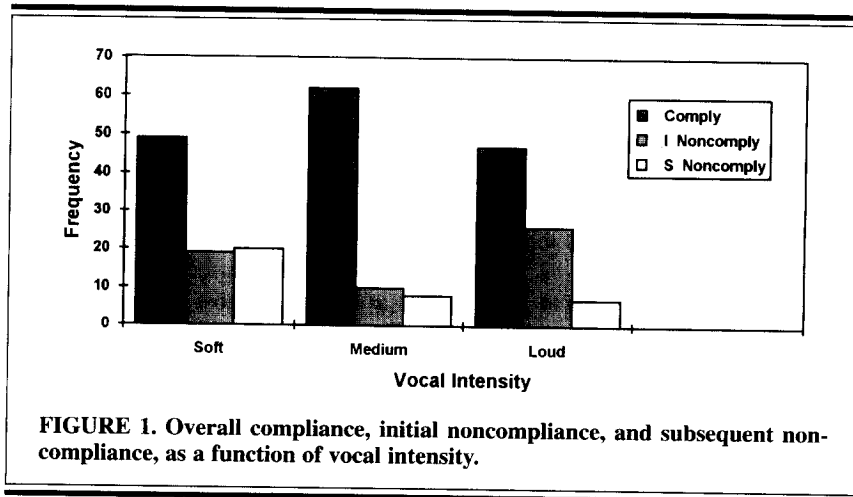
$p = .095$. There was no difference between the loud and soft conditions, $\chi^2(2, N = 45) = 1.09, p = .297$. Analysis of the subsequent noncompliance group indicated that more subjects failed to comply with the request from the soft voice than from either the medium-intensity voice, $\chi^2(2, N = 28) = 5.15, p = .02$ or the loud-intensity voice, $\chi^2(2, N = 27) = 16.26, p = .01$. Rates of subsequent noncompliance did not differ between the medium and loud vocal-intensity conditions, $\chi^2(2, N = 15) = .07, p = .796$.

Regarding the gender of subjects, no effects were obtained for rates of compliance, $\chi^2(2, N = 248) = 2.32, p = .314$. In addition, gender did not interact with vocal intensity to affect rates of total compliance, $\chi^2(2, N = 158) = .11, p = .946$; initial noncompliance, $\chi^2(2, N = 55) = .87, p = .649$; or subsequent noncompliance, $\chi^2(2, N = 35) = .14, p = .933$. There was no interaction between gender and touch for total compliance.

To examine more fully the apparent relationship between compliance and vocal intensity, we treated the trichotomized compliance variable as a continuous measure (reflecting degrees of total compliance) and submitted it to analysis of variance procedures. This resulted in a main effect for levels of vocal intensity, $F(2, 245) = 5.07, p = .007$. Subsequent Newman-Keuls multiple comparisons showed more compliance in the medium vocal-intensity condition ($M = 1.65, SD = .69$) than in either the soft condition ($M = 1.34, SD = .81$) or the loud condition ($M = 1.26, SD = .92$).

Discussion

A widely held belief associated with nonverbal behavior and social influence is that even a light touch on the arm can be sufficiently persuasive to induce a



stranger to comply with a request or volunteer to offer needed assistance. In fact, most of the available research appears to support this touch-compliance link (Burgoon, Buller, & Woodall, 1989). Expecting to determine only if vocal intensity mediated the apparent influence of touch, we found instead a main effect for levels of vocal intensity. What might account for this unexpected result?

A number of factors should be noted regarding the methods used in this study. First, the hectic and noisy environment of an airport may have somehow lessened the otherwise-salient nature of personal touch. The need to gain the attention of subjects rushing from one place to another may have interfered with the potent or unexpected nature that characterizes touch episodes between strangers. These conditions could have reduced the levels of arousal required to produce an effect, assuming of course the efficacy of the arousal-reduction view (Patterson et al., 1986). A second potential factor involves the brevity of the interaction that occurred between confederates and subjects. Perhaps the encounter was simply not long enough for the use of touch to produce the heightened sense of involvement needed to make a difference. On the other hand, this argument is weakened somewhat by the effects obtained for the vocal-intensity conditions. One final consideration is how the nonverbal performance of the confederates may have combined with environmental factors to influence rates of compliance. Perhaps manipulations of eye contact (e.g., Brockner et al., 1982) or types of touch (Paulsell & Goldman, 1984) may be needed in certain contexts to isolate fully the effects of touch on compliance. Despite the unique circumstances operating in our bogus postcard technique, the conditions often cited as likely to increase compliance and helping (e.g., making a legitimate and clear request) appeared to be present (Burgoon et al., 1989), yet no effect was found.

Given the consequences of vocal intensity in this study, it is reasonably clear that speech volume can function as an important determinant of compliance. The present data show that when compliance is operationalized in a continuous rather than a dichotomized manner, a curvilinear relationship appears to be present between vocal intensity and compliance. This relationship suggests the relative effectiveness of a moderate tone of voice (70 dB) over a soft tone (60 dB) or a loud tone (80 dB), with no differences between the soft or loud voices. We emphasize, however, that our inability to monitor the influence of vocal affect on vocal-intensity conditions suggests a need to study the effect of vocal intensity in a more controlled setting. We also recommend that compliance be measured in a way that more accurately represents a continuous conceptualization (Patterson et al., 1986) so that the conditions under which a curvilinear relationship between vocal intensity and compliance exist can be studied.

Our analysis of initial and subsequent rates of noncompliance yielded results with both theoretical and practical implications. With respect to initial noncompliance (turning down a request while still in the presence of the requester), the only effect obtained for vocal intensity was that the loud condition resulted in more noncompliance than did the medium condition. If the loud tone of voice is

construed as a form of acoustic invasion, which would lead to arousal, why did the subjects not comply more as a way of reducing the arousal (Buller, 1987; Patterson et al., 1986)? Unlike earlier studies of compliance, in which subjects had limited opportunities to terminate an interaction, the subjects in this study could have effectively reduced their arousal through noncompliance, that is, by simply continuing to move toward their destination. Thus, in this study, arousal reduction can be used to predict a decrease rather than an increase in compliance.

The results for subsequent noncompliance (failing to comply following the encounter) showed an especially strong effect for the soft vocal-intensity condition. Unlike the initial noncompliance group, these subjects apparently were not affected by the loud tone of voice. One plausible explanation for this difference supports the view that arousal mediates effects only on initial noncompliance and that some other process influences subsequent rates of noncompliance—when subjects are no longer in the physical presence of the person making the request. The views of Patterson et al. (1986) concerning the role of status attribution seem particularly germane. Put simply, the softer voice is less potent—more forgettable—in this context when compared with the more assertive, confident voices associated with both the medium and loud vocal-intensity conditions. The possibility also cannot be discounted that some subjects may not have complied simply because they did not hear or understand the soft-spoken confederate. The results suggest the need, when examining nonverbal communication and compliance, to consider the differential impact of such cues on initial and subsequent compliance and to identify the underlying processes that might explain each.

Finally, it should be emphasized that the effect of vocal intensity obtained in this study may not be generalizable to other societies. As with touch and proxemics, the “loudness” of speech is a subjective phenomenon that varies from one cultural group to another. Speakers from Arab cultures, for instance, have been observed to use greater vocal volume than that used by speakers from many Western societies (Hall & Whyte, 1966; Watson & Graves, 1966).

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