

# Communicator effectiveness in producing public conformity and private attitude change<sup>1</sup>

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One of the most widely held generalizations in social psychology is that the effectiveness of a persuasive communication is increased if its source is "credible." The early research by Hovland and Weiss (1951) and by Kelman and Hovland (1953) which gave substance to this conclusion has recently been extended to demonstrate the efficacy of credible communicators even when the amount of change advocated is extreme (Aronson, Turner, & Carlsmith, 1963)

Credibility has been defined traditionally in terms of communicator attributes which are perceived by the audience as relevant to the topic being communicated. Two of its major components which have been experimentally manipulated are the communicator's ability and his motives for personal gain, or what Hovland, Janis, and Kelley (1953) term "expertness" and "trustworthiness," respectively. However, positive and negative source traits which bear no objective relevance to the topic of the communication can also be effective in modifying attitudes toward its conclusions.

The potent effect of such irrelevant communicator characteristics has long been utilized in practical influence situations outside the laboratory by lawyers aware of the importance of

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dress and demeanor of their client upon jury attitudes, by advertisers sensitive to the "topic-free" nature of a sexy communicator, and more recently by politicians interested in creating an image by appropriate "packaging" of irrelevant traits

That irrelevant aspects of communicator credibility are important determinants of attitude change has been shown empirically in a study in which the race of a communicator influenced the acceptance of a speech which extolled the virtues of arithmetic to sixth-grade students (Aronson & Golden, 1962)

Such objectively irrelevant characteristics are of great importance in interpersonal communication situations in which attitude change is often mediated by a host of physical, social, and psychological traits of the influencing agent. For example, it is well known that the attitudes and behavior of the uncommitted voter are more affected by personal influences, such as friends and relatives, than by formal communication media. One of the reasons why these personal relationships may be effective, according to Lazarsfeld, Berelson, and Gaudet (1944), is that they often accomplish their behavioral goal without first instilling conviction. Thus one respondent in their study reported, "The lady where I work wanted me to vote. She took me to the polls and they all voted Republican, so I did too." Such a person would, if asked, be likely to defend his voting decision in terms of attributes of the influencing agent which are irrelevant to the political issues at stake. Thus it appears that both relevant and irrelevant aspects of communicator credibility may at times operate in the same direction—to increase the probability of accepting a persuasive communication.

Let us consider whether this conclusion can be generalized to a situation in which the respondent is not uncommitted, but rather has a definite stand, and the communicator attempts to induce a behavioral change rather than merely a modification of opinion. If pressure is put on a person to engage in behavior discrepant with his relevant attitudes and values, then obviously the extremity of this pressure to comply is a determining factor in what the person will do. If it is too weak, he will not comply and his attitudes will remain unchanged, while if it is too strong, he will comply publicly, but likewise his private attitudes should

remain stable. If the overt compliance can be completely justified in terms of its instrumental nature to the rewards and punishments controlled by the communicator, then there is no further need to adjust one's attitude to this discrepant behavior. But as the probability of compliance approaches a value of 5 in a given population, then it becomes increasingly likely that characteristics of the communicator which are essentially irrelevant to the content of the behavior will be used as justification as, for example, "I did it because he's a nice guy"

If, on the other hand, a person complies to the inducement of a negative communicator, i.e., someone disliked, clearly he cannot rationalize the discrepant behavior by invoking the personal characteristics of the communicator as justification. Zimbardo (1960) has suggested that such a person should be likely to change his attitudes to bring them in line with his behavior. Such a prediction is derived from the theory of cognitive dissonance (Festinger, 1957) which states that the dissonance produced by overt behavior which does not follow from one's relevant attitudes is inversely proportional to the amount of justification supporting performance of the discrepant act.

Since denial of the overt behavior is constrained by social reality, an alternative mode of dissonance reduction is to modify one's private attitudes to make them consonant with the public behavior. Actually two sets of attitudes are amenable to change: attitudes toward the communicator and attitudes toward the topic or subject of the behavioral act.

Bettelheim (1943) tells us that many Nazi officers who were extremely negative in their treatment of prisoners, often inducing them to engage in behavior quite contrary to their values, eventually came to be admired. The prisoners insisted that these officers "hid behind their rough surfaces a feeling of justice and propriety." However, this type of communicator attitude change, or identification with the aggressor, demands conditions of high fear and dependency.

When these conditions are not present, but the communicator is still a dominant, salient feature of the situation, then public compliance to a negative communicator should produce greater dissonance than compliance to a positive communicator. If

attitude change is the major dissonance-reducing mechanism utilized, then the general hypothesis which can be experimentally tested is that public compliance to a negative communicator (compared to a positive one) will result in greater attitude change in the direction indicated by the overt behavior

Recently this derivation was tested by Smith in an interesting experiment in which army reservists were induced to eat a food they highly disliked—fried grasshoppers—under varied communicator conditions. His results were quite dramatic: the positive communicator produced almost complete public conformity—everyone ate, but they didn't change their attitudes. The negative communicator, on the other hand, could induce only half the men to conform publicly and eat a grasshopper, but those who did, changed their attitudes a great deal—in fact, they ended up mildly liking grasshoppers.

Unfortunately, the conclusions to be drawn from Smith's brief published article (1961b) are not supported by his complete technical report (1961a). Numerous artifacts of design, execution, and analysis raise serious questions of the validity of his results. It is necessary to mention several of these features<sup>2</sup> in order to clarify part of the research design and methodology used in the present study.

The most serious problem is the sampling unit and the conditions of testing employed by Smith. Although 20 Ss were run within each communication condition, they were tested in two groups of 10 each. Moreover, the Ss, who knew each other, sat around a large table and could interact freely before, during, and after the novel request by a stranger to eat a grasshopper. In such a situation it is obvious that social contagion effects and group pressures play the major role in determining conformity behavior. Since extraneous and uncontrolled sources of pressure may operate uniquely in each sample, influencing eating and attitudes quite independently, a priori predictions cannot be made for the effects of communicator credibility. The present test of the dissonance derivation demands that attitude change

2 A more thorough analysis of Smith's research is available by writing to the senior investigator.

be a consequence only of the initial attitude, a private decision, and the characteristics of the communicator

A second problem is that all Ss received what amounts to a persuasive speech about the need for a mobile army, the need to eat unusual survival foods, and the need to study attitudes and reactions toward eating grasshopper. They received this speech after the experimenter began to play his role as a positive or negative communicator, but *before* he measured their initial attitudes toward grasshopper. As would be expected, the initial attitudes of the men in the positive communicator condition were much more favorable than those in the negative condition. This initial position bias leaves the results open to explanation in terms of relative scale distance available for change, as well as to regression effects, since there is no "true" control group. Thus it is necessary to isolate the measurement and manipulation phase of this research.

Finally, the manipulation of communicators, while statistically significant, produced an extremely positive communicator for one condition but a very positive communicator in the other. This is in part because all of the "negative" communicator's role behaviors are standard operating procedure for army officers or authorities. In any case, differences the manipulation may have produced cannot even be determined, since they are evaluated by a single Likert-type rating to the loaded statement "The experimenter was friendly and courteous"—a nonanonymous rating made in the presence of the E himself. Therefore, careful operational analysis of the communicator's role behavior and of the assessment of his credibility is crucial.

The goals of the present research then, were to study the effects of irrelevant source factors upon behavioral conformity and attitude change, and by so doing, to test several derivations from dissonance theory relating justification for acceptance or rejection of public compliance with attitude change. Finally, a replication of the group-interaction condition was included for purposes of comparison and in order to permit appraisal of the social contagion effects upon public and private conformity.

## METHOD

*General Design*

Attitudes toward eating a highly disliked food—fried grasshoppers—were measured before and immediately after an inducement to eat the food by a communicator who adopted a friendly, positive role for half the Ss and an unfriendly, negative role for the others. Some Ss were tested in freely interacting group conditions, while others were individually isolated from their group during testing. For some of the isolated Ss a money incentive for eating the grasshoppers was used as a second possible source of justification.

*Subjects*

A total of 243<sup>3</sup> Ss were tested in these studies, 175 experimental and 68 control Ss. Of this number, 50 were recruited from the introductory psychology class at University College of New York University as part of a course requirement. In the group-interaction replication 72 Ss were used from an army reserve base adjacent to the campus of New York University, while the third study used 121 army reservists from this same center. The reserve Ss, who were all privates and corporals, were only a few years older than the college sample, but roughly equivalent in educational background.

*Procedure*

*The communicator.* Since the person selected to be the communicator (B L) was Brigade Commander of the New York University ROTC, his "true" positive and negative traits could be determined by means of an alleged officer-rating survey, 53 members of the college ROTC rated him, as well as several other officers on a 60-item adjective check list.<sup>4</sup> This trait profile served as the basis for establishing a set of positive and negative role behaviors.

Having determined from the officer-rating survey those personality traits which the communicator possessed, a set of behaviors was developed which would operationally define a positive or negative communicator by emphasizing certain traits and concealing others. For both positive and negative conditions the communicator had to be perceived as possessing a number of positive traits necessary for effective execution of the experiment. That is, we wanted all Ss

3. Fifteen Ss had to be eliminated from attitude change analyses because of incomplete or unreliable rating data, or because they had previously eaten grasshopper as part of an army survival program (nine were from the positive communicator condition, while six were from the negative, and all were from the reserve group).

4. The adjective check list was taken from Gough's list as presented by Newcomb in *The Acquaintance Process*. New York: Holt, Rinehart and Winston, 1961. Pp. 279-280.

to have the same regard for the "scientific" worth of the experiment, to attend closely to all phases of the experiment, and to take the study seriously. Thus, the communicator had to be seen by all Ss as conscientious, capable, well organized, concerned about the reactions of the Ss, and industrious. In addition, it was important not to evoke hostility in the Ss in either condition. However, in the negative condition he should be perceived as someone personally unpleasant, a person one would not want to know, work with, or work for. This perception was guided by actions which would make him snobbish, demanding, tactless, bossy, cold, and hostile to others, among other things.

The communicator interacted with his "assistant" according to a prearranged script in which, for the positive condition, he gave politely phrased requests to the assistant, called him by his first name, responded to a "mistake" by the assistant with equanimity, and in general was considerate and pleasant. But at all times it was clear he was the *E* and in control. Perception of the negative communicator, however, was largely directed by his quite formal interaction with the assistant, whom he always referred to by his last name, ordered about, with whom he was exacting and somewhat annoyed and irritated. When the assistant mistakenly brought in the "wrong" experimental food, a tray of eels, the *E*, who was in the process of talking to the Ss in his most pleasant manner, suddenly blew up and said, "Oh, dammit, can't you remember the schedule? That food is for the next group. Let's get with it and hurry up about it!" As the assistant left, somewhat embarrassed, the *E* shrugged his shoulders disgustedly, then caught himself short, reversed his role behavior in front of the Ss, apologized for the interruption, and proceeded again in the same tone as previously.

The effectiveness of these role variations in producing differential perceptions of the communicator as well as our measuring instruments were first tested in our laboratory with a college sample. Then army reservists were tested under conditions similar to Smith's, maximizing group contagion effects, with communicator variations as the only independent variable. Finally, other army reservists were tested under conditions of minimal group influence, with communicator, incentive, and pretesting experience manipulated.

*College study* The procedure for the college sample was generally similar to that used for the army Ss, with the exception that the rationale was in terms of the relation of physiological and intellectual reactions to food deprivation and to eating behavior. We had attempted to manipulate level of hunger, but this manipulation was not effective as measured by self-report scales or by any of the measures used in the study. Thus the only variable to be considered here is communicator variations for moderately hungry Ss.

*Army studies* In order to minimize the possibility that Ss would become aware of our procedures and deceptions, the entire experiment was run on three consecutive nights during which different reserve units met. The group-interaction study (replication of Smith) was run the first night, while half the Ss in all treatments were run on each of the other two nights. Ss were randomly assigned to conditions and the running order of conditions was approximately counter-balanced within and between test nights.

Approximately 100 Ss were brought to a large lecture hall, where one of us (PGZ) was introduced as a civilian liaison from the Quartermaster Corps interested in some aspects of food preferences. Ss then completed a nine-point attitude scale<sup>5</sup> of degree of liking of a wide range of food items, among them fried grasshopper. Experimental Ss were sent to an adjoining room, while control Ss were sent either immediately or after a delay period to a third room, where they completed a post-attitude scale, without any intervening manipulation. There was no contact between Ss who had completed the experiment and those waiting their turn to begin.

The communicator (previously described to the Ss as "the experimenter in charge") and his assistant were dressed in lab coats, while those measuring pre- and post-attitudes were differentiated by being dressed in suits. In the group-interaction conditions about 10 Ss sat around a large table in full view of each other and the E. In the separated-individual conditions, the same number of Ss was tested simultaneously, but interaction was minimized by partitions between them.

Differences in role behavior commenced as soon as the Ss entered the experimental room. After the Ss completed a hunger and eating habit questionnaire, heard a spiel about the needs of the new mobile army, and witnessed the assistant's "mistake," a plate with five fried grasshoppers was placed in front of each of them as the E was saying:

"Before asking you to eat the experimental food, I want to make it clear that this part of the experiment is *voluntary*, and no one has to eat these fried grasshoppers if they don't want to. However, for the purposes of the study, I would like you to try at least one and preferably to eat all on the plate. In order to get as many people as possible to try one, I will pay, right now, fifty cents to each person who eats one." (Pause) "Take a moment to decide. I will place the money next to each plate. Those of you who are willing to try the grasshopper, please indicate it by pulling the plate and money toward you. Those of you who are unwilling to even give it a try, leave the plate and money where they are and raise your hand to indicate you

<sup>5</sup> This hedonic scale, which was anchored at every point with verbal labels from "like extremely" to "dislike extremely" has a reliability coefficient of .96 (Peryam et al., 1960).

don't want to eat any All right now, go ahead and eat" Obviously, money was not mentioned in the no-incentive condition

### *Control Groups*

On the group-interaction night, one before-after control was run with 25 Ss, while on each of the other nights, two control groups were run with approximately 10 Ss in each One control received the hunger questionnaire and same mobile army spiel prior to their second attitude rating, one control got neither of these treatments, while the other two controls got one or the other treatment Since there were no differences between any of these groups which even approached significance, they were combined for comparison with the experimental treatments To assess the possible effects of premeasure sensitization on the relation of the manipulations to the post-measure, half of the individually tested army Ss got a premeasure on grasshopper as well as other survival and usual foods, while half got a premeasure which did not include grasshopper or most of the survival foods

The final ratings, which were made in a third room, were in the absence of the "experimenter-communicator" The assistant of the civilian liaison told the Ss that he wanted to evaluate various aspects of the experiment and get more information from them At this time the experimental Ss completed

1. a post-measure of attitudes toward a number of foods,
2. a measure of willingness to endorse eating grasshopper,
3. checks on the experimental conditions of choice, pressure, etc,
4. and finally, several indexes of evaluation of both the communicator and his assistant

## RESULTS AND DISCUSSION

### *Public Conformity Eating*

Approximately 50 per cent of the Ss in each condition in the three subsamples accepted the inducement to eat a grasshopper. Thus none of the experimental treatments had an effect upon the frequency with which grasshoppers were eaten nor upon the amount eaten (a mean of about two grasshoppers per eater in each condition).

This result is in clear contrast to Smith's data (1961a) which indicate that over 90 per cent of the men ate grasshopper in every condition except the negative-communicator condition The validity of the results of the present study is attested to by the following related findings. Although all Ss accurately perceived

that they had little choice in whether or not to come to the experiment (they were not volunteers), nevertheless, they reported having a high degree of choice in whether to eat the experimental food. There were no group differences on either of these measures, but the difference between the perception of the lack of choice to participate and the free choice to eat was highly significant for all comparisons ( $p < .001$ ). In addition, it should be noted that the Ss felt that the communicator did not exert much direct pressure upon them to eat. Thus the decision to eat was determined not only by experimental situational pressures, but also by the men's food preferences. It should be noted that the aversiveness of grasshopper was established by comparative ratings of it and a number of other unusual foods like snake, octopus, eel, etc. It was rated most negative among 10 such foods by an additional sample of 217 college students, fewest Ss had tried it, and 57 per cent said they would not try it!

Finally, a recent Quartermaster Corps study (Peryam et al, 1960) showed that food preference and acceptance were highly correlated (as high as .77). In conclusion, therefore, the extent of public conformity observed in the present study is what one would expect from the conditions of inducement, choice, and food preference operating here. This is not meant to imply that eating behavior cannot be influenced by differences in communicator credibility, but that it was not affected given the specific manipulations employed.

It may be instructive at this point to examine the reasons given for eating or avoiding grasshopper. The major reason given by 76 per cent of the eaters was "for curiosity to see what it was like." In fact, eaters tended to characterize themselves as "the kind of person who tries new and unusual foods" more so than did the noneaters ( $F = 5.83, df = 1, 72, p < .05$ ). Other reasons for eating grasshopper were to help the army's survival program, to help the E, and not to appear different from the other guys in the group. Among those refusing to eat, 44 per cent said that "it looked bad," 39 per cent said they weren't hungry enough, while 10 per cent expected it to taste bad. Miscellaneous other reasons were religious and personal reactions against the E.

The college Ss were asked to list all the things they thought about when they considered eating grasshoppers. Below are some of the negative cognitions they associated with this food ugly, greasy appearance, slimy, shiny, charred, repulsive, squirming, eyes, wings, dirty, rat feces, might hurt me, burned them as a child, biology laboratory, graveyard, and not kosher.

*Private Conformity. Attitudes toward Grasshopper*

*Contagion effects* It was postulated that the procedure used by Smith (1961) was not ideal for testing the dissonance hypotheses because of the uncontrolled social-contagion effects likely when a freely interacting group of army reservists is presented with such a unique situation. In the present study, these effects were recorded directly by two independent observers as well as on tape. Among the college Ss who were run four at a time in completely separated cubicles, there was almost no interaction at any time. In the eight army groups tested under conditions which increased privacy and minimized interaction, there was no talk at all in six of them (although some slight laughter at times), and a slight disturbance by only one S in each of the other two groups.

In contrast, the incidence of interaction, influence attempts, and contagion were marked in the four groups of army reservists tested under conditions similar to Smith's. In general, there was a great deal of laughter and giggling when the grasshoppers were presented. Typical of the comments were. "Their eyes are

Table 1 Mean attitude change as a function of communicator, and eating (for group-interaction army Ss).

			N	Eaters	Noneaters
			COMMUNICATOR	Positive	1st Sample (a)
2nd Sample (b)	12	175			38
Mean		+78			00
Negative	1st Sample (c)	9		250	-71
	2nd Sample (d)	9		22	none
	Mean			+64	-71

Note—"Sample" refers to a group of Ss tested simultaneously

adorable," "They taste like shrimp," "They make me sick," "What's the money for, a bribe?" and "Here's your tail money, buddy" Most of the men talked before, during, and after the eating experience

The effects of communicator credibility upon attitude change for this group condition are presented in Table 1

The conclusions to be drawn from this table appear to be contradictory Considering only the first samples, the negative communicator produced much more change than did the positive one—an exact replication of Smith's finding. However, the data for the second sample within each communicator condition are exactly opposite, indicating greater effectiveness of the positive communicator. Over-all, there is no main effect of communicator.

This confusion is readily resolved by examination of the nature of the interaction which occurred In the two samples (b and c) in which eaters changed their attitudes markedly, the majority of the group did not eat, while in the other two samples when the majority of the group ate, there was little or no attitude change Justification in terms of group pressure may have minimized the need to change one's attitude, while deviation from the group norm would be expected to increase the dissonance from eating, and hence the attitude change Of special interest are the two samples in the negative-communicator treatment, where in one (sample c) the first man to taste the food said, "I can't eat them, they taste like shit, I'm nauseous," while in the other sample (sample d), an eater turned to a noneater and shouted out that he was a coward Every man in this condition then ate Clearly then, "social atmosphere" influenced both public conformity and private attitude change, but not in any way predictable from the between-group treatment effects It remains for future investigation to turn this source of confounding into a legitimate independent variable

### *Dissonance Effects*

Table 2 presents the major set of attitude change data in terms of net proportion of Ss who change in the direction desired against those who change in the opposite direction This measure, derived from Hovland, Lumsdaine, and Sheffield (1949) is

Table 2 Mean net proportion of attitude change as a function of eating and communicator (for college and army Ss in separated testing conditions)

Positive communicator					Negative communicator				
Eaters (50 per cent)	(N)	Direction of change		Net change (per cent)	Eaters (45 per cent)	(N)	Direction of change		Net change (per cent)
		(+)	(-)				(+)	(-)	
College	(12)	42	33		College	(14)	57	7	
Army	(8)	38	38		Army	(6)	83	17	
Total	(20)	40	35	+5		(20)	65	10	+55
Noneaters					Noneaters				
College	(12)	8	25		College	(12)	8	25	
Army	(8)	0	22		Army	(12)	0	15	
Total	(20)	5	24	-19		(24)	4	20	-16
Net effect				+24					+71

Control group (N = 68), net change = +10 per cent

for Ss in both the college and army samples who were tested under conditions permitting an evaluation of the dissonance hypotheses

The pattern of results is similar and quite clear for both college students and army reservists. While a net proportion of 60 per cent of those who eat the unpleasant food change their attitudes to like it more, 34 per cent of those who refuse to eat show a boomerang effect, liking it even less ( $p < 0.1$ ). Among those who eat, the negative communicator is much more effective in changing attitudes in the desired direction (55 per cent) than is the positive communicator (5 per cent). Among those who do not eat there is a slightly greater boomerang effect produced by the positive communicator. The difference in the net proportion of change as a function of communicators is statistically significant (C R = 2.00,  $p < 0.05$ ).

If the data are analyzed according to magnitude of change (mean scale distance), the results are similar to those obtained with the frequency measure of change. For each of the three subsamples in this study eaters changed a greater amount than did noneaters (combined over subsamples,  $F = 12.13$ ,  $p < 0.01$ ).

It should be noted that although the initial attitudes of eaters toward grasshopper (6.7) were more favorable than were those of the control group (7.4), which in turn were more favorable than those of noneaters (7.7), these differences did not approach significance. There were no differences in initial attitude position between communicator or incentive conditions.

While the mean change for the control group was +3 units, it was +6 for the positive-communicator eaters, and twice as much, +12 for the negative-communicator eaters. While the positive communicator condition is not different from the control group (by a Duncan Multiple Range Test), the negative communicator produced significantly greater change ( $p = .02$ ). Although noneaters in both conditions changed to dislike grasshopper even more, the boomerang effect by the positive-communicator Ss (mean = -2) is not different from the control mean, while that of the negative-communicator Ss (mean = -4) is significant ( $p < .05$ ).

*Table 3* Mean attitude change as a function of communicator incentive and eating (for separated army Ss)

Incentive		Communicator	
		Positive	Negative
50 cents	Eaters	66	1.75
	Noneaters	00	00
None	Eaters	40	2.01
	Noneaters	-1.20	-86 ( $N = 37$ )

Table 3 presents attitude change means for the separated army Ss with and without a monetary incentive. Neither the main effects of communicator, incentive, or their interaction is significant. This is due in part to the small cell size in several of the eater groups ( $n < 5$ ). The following results are therefore presented as only suggestive for future validation.

If we collapse across incentive conditions and perform a Duncan Multiple Range Test on the four remaining groups, the

negative-communicator eaters are significantly different from the positive-communicator eaters ( $p < .05$ ) and even more significantly different from either of the noneater groups ( $p < .01$ ). The same analysis including the incentive condition revealed that the negative-communicator eaters without monetary incentive were significantly different ( $p < .01$ ) from all the noneater groups as were their money counterparts and they approached a statistically significant difference from the positive-eater groups ( $p < .10$ ). The difference between eaters and noneaters is greatest when there is least justification—a negative-communicator and no monetary incentive. However, even under incentive conditions the negative communicator produces a greater change than does the positive. Finally, it should be noted that again, as predicted, greatest negative change should be in response to refusing to accept the request from a positive communicator. That this should occur more for no-money than money conditions is contrary to our expectations, except that for many Ss the fifty cents was almost a negative incentive—a bribe.

#### *Attitude Change Endorsement*

Another way of looking at the effects of the communicator variable on private acceptance is by means of a specially devised measure of the extent to which S was willing to endorse or recommend grasshoppers to other soldiers. Such a measure, it is felt, is a more stringent yet more valid test of communicator effectiveness, since it involves a public commitment to one's attitude, less anonymity, and greater consequences to the individual soldier.

After completing the post-attitude questionnaire, the army reservists were told that it was the job of this research team to prepare a manual to be used by men about to enter a survival course. They were informed that "We feel that one of the best understood, most honest and effective techniques is to prepare a report in which the actual information and statistics are supplemented by personal endorsements by men like yourselves who have had some direct experience with the food." They were then given an endorsement release form which presented six quotations pertaining to eating grasshoppers. The quotations were arranged and labeled in order from "strongest endorsement"

through "weak endorsement" to "no endorsement," and were prefaced by an introduction which stated that the respondent authorizes use of his name to be associated with the statement he has signed. For one of the six statements S had to write in the name of the food he ate, his signature, and date. The endorsements varied from "I've tried (the food) personally, found it to be very tasty, and would certainly recommend it" to "If you try eating (the food) as I did, you'll find that they're not so bad, in fact they had no taste at all."

Among those army Ss who ate at least one grasshopper, there is a significant degree of association between their post-experimental attitudes and their level of endorsement. Of those with con attitudes 94 per cent give a weak endorsement, while 88 per cent of those with pro attitudes give a strong endorsement. The majority (66 per cent) of those with moderate attitudes tend to give weak rather than strong endorsements ( $\chi^2 = 16.76$ ,  $df = 2$ ,  $p > .001$ ,  $C = .48$ ).

The results obtained by using this measure show a correspondence with those presented previously, 37 per cent of those in the negative-communicator condition give strong endorsements, while only 11 per cent do so in the positive condition. Furthermore, by far the greatest amount of attitude change in any cell is the change of more than two scale units for negative-communicator Ss who give a strong endorsement. This mean degree of attitude change increases to 2.5 units for Ss who accept more than the minimal inducement, i.e., eat more than one grasshopper. Unfortunately, these results are not statistically significant because of the relatively small sample size left after eliminating all those who did not eat or refused to endorse the food. However, the measure appears to offer some validity for the hedonic attitude scale, and the pattern of results complements those obtained by frequency and scale distance measures of private acceptance of the experimental food.

In passing it should be mentioned that there is a weak but consistent generalization effect of attitude change toward grasshopper upon other survival foods. While changes in grasshopper attitudes are unrelated to changes in nonsurvival foods, the gen-

erally positive change for grasshopper eaters is reflected in group positive changes on 9 of 12 comparisons of other survival foods for both army and college Ss. Similarly, the negative change for noneaters is mirrored by group negative changes on 9 of 12 comparisons. This effect is more consistent for the negative than the positive-communicator condition.

#### *Pretest Sensitization*

A group of Ss was run without first asking their attitudes toward grasshopper and the other survival foods. They did receive a pretest but it included only usual army foods to be evaluated. This was done in order to assess the sensitizing effect of mentioning grasshopper and survival foods on attitudes. Although a *t*-test on post-grasshopper attitudes for Ss with and without the grasshopper pretest did not yield significant results ( $t = 1.30, p < .20$ ), nevertheless, there is a consistent effect of this treatment. The effect of the pretest made post-attitudes toward grasshopper more negative in six of eight groups (and in one by as much as 2.0 scale units). Thus it appears that pre-exposure to the specific issue of eating grasshoppers and the general issue of survival foods increased negative reactions toward each. This in part could be observed from comments of derision made by a few of the men in the pretest condition. Since the no-pretest Ss were physically separated from the pretest Ss, they were not influenced by such comments or by personal anticipatory reactions to the thought of eating the foods.

#### *Communicator Credibility*

The positive communicator is perceived as having more positive traits and an absence of negative ones (on the adjective check list), while the negative communicator is characterized by a greater number of negative traits and a lesser degree of positive traits. In the college sample, the positive communicator was seen as having more positive traits than the negative communicator ( $F = 17.96, p < .001$ ) and also as having fewer of the negative traits ( $F = 8.18, p < .001$ ). The same effect holds for both the group-interaction and separated army Ss on total score, as well as for individual analyses of positive and negative

traits, the  $F$  values for each comparison being greater than 10.0 ( $p < .001$ ).

Thus the experimental variations in the role behavior of the communicator were accurately perceived by the  $S$ s, while the nonvariable behavior of the assistant was also perceived veridically, i.e., no difference in the two communicator conditions. Moreover, there is no difference between the communicator and the assistant under positive conditions, while there is under negative conditions, the communicator in all cases being perceived as a more negative person ( $F = 15.05$ ,  $p < .001$ ).

On another measure,  $S$ s in the negative condition indicated they "probably would not like to work with," and "probably not hire as an experimenter" the person who was their  $E$ . Under positive conditions,  $E$  was rated significantly more favorably ( $p < .001$ ), the same as was the assistant under both communicator conditions.

A somewhat different way of assessing the effectiveness of the manipulation is to compare 12 of the communicator-trait evaluations given by those who evaluated him outside of the experimental situation (ROTC students) with those by the experimental  $S$ s. While the nonexperimental sample ranks "calmness" as the communicator's most salient trait, it is ranked identically in the positive experimental condition, but ranked eighth in the negative condition. In like manner, being "bossy" is ranked ninth for the ROTC sample, is a more salient trait for the negative condition (fourth-ranked) but less salient for the positive condition (eleventh).

Since our interest is as much in specifying source factors which are important in controlling attitude change, as in merely testing the dissonance derivations, it is not enough to note that our manipulations were effective in such gross terms. Therefore, Table 4 presents the 22 personality traits on which the  $S$ s evaluated the communicator, and which we tried in our induction to modify. The traits are arranged in rank order from smallest to largest difference between the ratings of the positive and negative communicators.

The first seven traits are ones we attempted to hold constant in order to insure that the  $E$  would have the attention of the  $S$ s

Table 4 Mean rating of communicator traits (averaged over all Ss)

Rank Order	Trait	Communicator		<i>p</i> Values
		Positive	Negative	
1	Conscientious	1.3	1.2	<i>p</i> = n.s.
2	Capable	1.3	1.2	
3	Well organized	1.5	1.3	
4	Concerned about your reactions	1.0	.7	
5	Industrious	1.3	1.0	
6	Hostile to you	1.3	1.0	
7.	Efficient	1.7	1.4	
8	Clear-thinking	1.4	.8	<i>p</i> < .05
9	Fair-minded	1.1	.5	
10	Egotistical	.2	-.4	
11	Insincere	.8	.2	
12	Hostile to others	1.3	.7	
13	Mature	1.4	.7	
14	Genuinely interested in you	.2	-.5	
15	A cold person	.2	-.7	<i>p</i> < .01
16	A warm person	.0	-1.0	
17	Courteous to you	1.7	.7	
18	Snobbish	1.0	-.2	
19	Calm	1.5	.3	
20.	Demanding	1.0	-.2	
21	Bossy	.4	-.9	
22	Tactless	1.2	-.2	

Note—Scores can range from +2.0 to -2.0, negative scores being unfavorable

and be viewed as equally competent ("expert") in both conditions. There are no differences on these traits. The last eight traits are the ones we explicitly tried to manipulate, and we were quite successful in creating two different personalities—well beyond the .01 level (by multiple *t*-tests). The middle set of traits shows smaller but still significant differences ( $p < .05$ ) between the two conditions. These traits are also linked in direct or indirect ways to the experimental induction.

The positive communicator does not possess any of the negative traits, is rated high on being calm, courteous, mature, clear-thinking, and is neither tactless nor hostile to others. However, he is seen as affectively neutral, being neither cold nor warm. The perception of him as not being genuinely interested in the Ss individually is an accurate one, since he always tested the men in groups and could not respond to the subjects on a personal, individual level. His ratings on the traits of "bossy" and "ego-

tistical" can likewise be attributed to the planned instructions, which included constant references to what *he* wanted them to do, and constant requests put to the assistant and the Ss to perform various tasks

The picture of the negative communicator is quite different. While he is no different than the positive communicator in possessing those traits necessary for the effective execution of the experiment, he is not a warm person, is primarily bossy, tactless, demanding, snobbish, not genuinely interested in the subject, egotistical, and somewhat insincere and not very calm. It appears, therefore, that this scale was quite sensitive to the subtle as well as the gross aspects of our manipulation of communicator traits.<sup>6</sup>

One final point to be made is that within the negative condition the eaters did not view the communicator more favorably than did the noneaters on even a single trait, in fact, noneaters felt he was more capable ( $t = 2.16, p < .05$ ), and more industrious ( $t = 2.07, p < .05$ ) than did eaters. For the positive communicator, there were differences between eaters and noneaters on four traits, but on each of these eaters felt the communicator was more positive than did noneaters. He was fairer ( $t = 2.24, p < .05$ ), less egotistical ( $t = 2.22, p < .05$ ), more genuinely interested in them ( $t = 1.97, p = .05$ ), and more mature ( $t = 1.82, p < .10$ ).

Thus eaters under negative communicator conditions changed their attitudes toward the object of their induced public behavior—eating fried grasshoppers—but did not develop more favorable attitudes toward the communicator, while positive-condition eaters did not change their attitudes much, but did tend to justify their eating in terms of irrelevant, personal communicator characteristics.

### *Conclusions and Implications*

The present study indicates that a communicator who advocates public compliance to behavior discrepant from a person's attitudes and values can also influence attitude change, without

<sup>6</sup> This instrument is also highly reliable, as shown by the internal consistency coefficient of .90 obtained in this study (using Cronbach's alpha, 1951)

specifically communicating persuasive arguments and conclusions. Those who accept the inducement change in the desired direction, while those who do not comply often show boomerang effects—adopting more extreme attitude positions. This attitude change following public compliance (predicted by the theory of cognitive dissonance) is greater when the behavior cannot be as readily justified in terms of communicator characteristics, *i.e.*, when the communicator is negative rather than positive. Thus source factors which are on an irrelevant dimension of communicator credibility may operate in interesting and nonobvious ways.

These findings may have considerable generalizability, since there were no differences in the pattern of results for college and army reserve samples, and our army reserve sample appears to be comparable to regular army Ss used in related research.<sup>7</sup> The results of this research also raise provocative questions about the operation of social contagion effects in group-participation decision-making. According to the present analysis, the operation of strong group pressures to conform should serve as justification for conformity and thus minimize the extent of private acceptance. In fact, attitude change may be greatest when the individual is put in the position of behaving in a manner not only contrary to his own initial values, but also to the group majority.

Although the manipulation of the communicator was quite successful in creating two different "personalities," it remains for future research to evaluate the relative efficacy of specific individual communicator traits, *e.g.*, "hostility," especially as they interact with complementary or divergent traits of the audience.

Finally, the magnitude of the results obtained here, when contrasted with the relatively weak effects observed in the earlier studies on communicator credibility, leads one to speculate whether this change might not even be more permanent than in those studies where the initial differences vanish on subsequent

<sup>7</sup> A number of the foods rated by our Ss were used because they represented foods which were found to be highly disliked, liked, or neutral in a large-scale normative study of food preferences of men in the regular army (Peryam *et al.*, 1960). For each of five comparable foods the means and variances of our army reserve sample were the same as those obtained with regular army soldiers (whose educational and geographic backgrounds were quite variable).

testing It might be that in standard influence situations, the perceptual associations are between communicator and content of his communication—both external to the S—while in the situation described in our study the association is between the communicator and the S's own behavior—and thus the perceptual response is stronger and the attitude change made of sterner stuff

#### SUMMARY

Communicator characteristics which were objectively irrelevant to the topic of communication were studied in their relationship to behavioral compliance and to subsequent attitude change. Both college students and army reservists were induced to eat a highly disliked food, fried grasshoppers, by a communicator whose positiveness and negativeness were experimentally varied. Although public conformity was unrelated to communicator differences, private attitudes were significantly influenced. Those who complied with the request from a negative communicator increased their liking of grasshoppers (as a food) significantly more so than did those exposed to a positive communicator. Non-compliance was associated with boomerang effects in which grasshoppers became even more disliked. Under conditions which maximized group interaction marked variability occurred between groups within the same condition as a consequence of social contagion phenomena. The results support a dissonance theory analysis of communicator characteristics as a source of justification in forced compliance situations.

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