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THE EFFECT OF INCREDULITY UPON EVALUATION OF THE SOURCE OF A COMMUNICATION*

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A. INTRODUCTION

What happens to the credibility of a communicating source who makes an incredible assertion? An assertion is credible to the degree that it is believable and incredible to the degree that it is not believable. Changes in credibility following an incredible assertion should be a joint function of expectations about the source and the attributes upon which his credibility rests.

Source credibility may be defined either as beliefs about the source's prestige or about his authoritativeness. Credibility based on prestige refers to a source who is highly or less highly regarded by virtue of his perceived social position. A person who is authoritative about a particular issue is one who is thought to be a knowledgeable expert. If a source who is neither prestigious nor authoritative takes an incredible position, not very much is expected of him and, therefore, there is little reason to devalue him when he behaves true to form. If the source is both prestigious and authoritative, and he makes an incredible statement, he should remain relatively invulnerable because he is protected by his expertise. *The source whose credibility should be most vulnerable is one who neither lives up to expectation nor is protected by expertise.* Within the present context, the source who is prestigious but not authoritative should be the most vulnerable.

When an expert makes a disbelieved statement, a cognitive inconsistency occurs which may be alleviated in several ways. Some of the ways previously considered in psychological experiments are changing one's own beliefs, derogating the source of the statement, and downgrading the importance of the issue (1, 8). In addition, excuses might be used to rationalize the inconsistency: "He is being sarcastic," "It is a misprint," etc. The use of excuses as a response to source-message inconsistency was investigated in the experiment described below.

Neither a reduction of the issue's importance nor derogation of the source's credibility have been demonstrated to alleviate cognitive inconsistency due to

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opinion disagreement. Recent evidence indicates that importance tends to increase instead of decrease in attitude-change research (7, 8). For reasons described previously (8), results attributed to derogation have been inconclusive. For example, Bochner and Insko (3) believed their mildly credible source was derogated. They checked the credibility of their sources by comparing mean ratings of highly and mildly credible sources made by subjects who did not receive the experimental manipulation. These means may be used as baseline credibility ratings to assess the effects of the experimental manipulation on source credibility. After the experimental manipulation, the credibility of the mildly credible source, contrary to the authors' interpretation, was improved instead of derogated for 18 out of 18 independent groups. From the binomial, this result would be expected by chance once out of 262,144 trials.

B. Method

1. *Subjects and Design*

Experimental subjects were 180 undergraduates attending the University of California, Riverside. They were randomly assigned in equal numbers to the 18 cells of a $3 \times 3 \times 2$ independent groups design. The factors of the design were three levels of discrepancy between the subjects' own position on an issue and a position communicated to them, three levels of credibility of the sources of the position communicated, and two different orders with which questionnaire data were obtained. In addition to the experimental subjects, 82 Riverside undergraduates were distributed almost equally among three control groups.

2. *Procedure*

The attitude issue was the amount of sleep needed for maximum health and well-being. The issue was chosen for four reasons: (*a*) as it was used previously by Bochner and Insko (3), it provides some basis for comparison with available data, (*b*) a position in respect to the issue can be stated unequivocally as a single number, (*c*) the sleep issue has finite limits, and (*d*) ordinary experience causes virtually every normal person to regard the extreme positions —never waking or never sleeping—as thoroughly incredible.

The research scene was set by describing a fictitious experiment of an equally fictitious Stanford professor. Subjects were led to believe that a questionnaire was being administered for Professor Philip L. Carter of the Stanford University School of Journalism. It was explained in written instructions that Carter was doing a study of ideas communicated by letters to the editor

and also of ideas the letters communicated about the writers themselves. The subjects were told that letters to be judged appeared in a large newspaper in response to a controversial article about the number of hours of sleep people needed per night for maximum health and well-being. Carter was said to have received permission to interview all the newspaper employees who handled letters, including the person who selected the letters for publication, the one who shortened them when only part could be published, and even the men who operated the printing machinery. Subjects were told that Carter had obtained the cooperation of various letter writers whom he interviewed to determine exactly what they had meant to communicate in their letters. Subjects were also told that many writers had agreed to take a well-known personality test. Together with the interview, this test was said to give Carter a good estimate of a few main traits of the letter writer's personality. Subjects were informed that they would receive a summary of one of the letters. They were told that summaries were used because the experiment dealt with judgments of communication qualities and not with extraneous things such as the letter's length or style. It was explained that after students judged what the letter communicated both about the sleep issue and the writer, Carter would be able to compare the information he already had with ideas the letter communicated to intelligent readers.

The written instructions were attached to the front of a four-page questionnaire. The first page of the questionnaire was titled "Summary of a Letter to the Editor." After a brief repetition of the sleep issue, the subject read a two-sentence paragraph mentioning that the letter was signed with the writer's name and occupation, and indicating that Carter had verified the accuracy of the specified occupation. Then the letter summary was given. An example summary is as follows:

"The professor's letter starts by taking issue with the views of some of the people interviewed by the reporter who wrote the article. The professor gives a number of reasons why he thinks these views are false. Next, he gives his opinion about the pros and cons of several letters to the editor that were already published and that discussed the matter of sleep needed per night. Then he gives his own views in general terms and discusses several ways in which he thinks that the amount of sleep one gets affects health and well-being. Finally, the professor's letter ends with his two main points. First, he claims that the widely accepted idea that people need eight hours of sleep is a myth. Second, taking the actual wording of the last sentence of his letter, the professor strongly advocated that 'for maximum health and well-being a person should get six hours of sleep per night.' "

The letter summary is designed to introduce a source and a discrepancy without giving persuasive arguments. It is quite general. No reasons are given to support the writer's opinion. If the last sentence were deleted, the subject would not know the writer's position.

The material just described was identical for all experimental subjects except for changes required to manipulate the independent variables of source and discrepancy. In Carter's verification of the writer's occupation, the letter was attributed to one of three sources: (*a*) "a professor of law at a very good university and a quite well known authority on constitutional law"; (*b*) "a professor of biology at a very good university and a quite well known authority on the physiology of sleep"; and (*c*) "a private first class in the U. S. Army assigned to the motor pool." For this latter source, "private" was substituted for "professor" in the letter summary. The biologist was meant to be both a prestigious and authoritative source; the private was neither authoritative nor prestigious; and the lawyer was expected to be prestigious but not authoritative. Discrepancy between the subject's and the source's position was varied by using zero, four, or six hours in the last sentence of the summary stating the writer's opinion. Zero hours was included to introduce the incredible position of no sleep at all.

The second page of the questionnaire followed the letter-summary. It contained five questions. The first three were introduced to reinforce the authenticity of the letters. They asked in turn: (*a*) "Did you read the actual newspaper article in which the amount of sleep was discussed?" (*b*) "Have you read in the newspaper any of the actual letters to the editor commenting on sleep?" and (*c*) "If you checked 'yes' to the last question, did you read in the newspaper the actual letter that was summarized for this study?" No subject answered "yes" to any of these questions. The fourth question asked the subject to specify the number of hours of sleep advocated by the letter writer. This question was placed just before the fifth, which asked for the subject's own opinion, so the discrepant position would be clearly in mind when the subject indicated on a 17-point scale the amount of sleep he considered necessary for health and well-being. This scale ranged in integer steps from zero to 16 hours of sleep.

The independent variable of order was manipulated by measuring the two main dependent variables on the third and fourth pages of the questionnaire. These two dependent variables were willingness to endorse rationalizing excuses and changes in source credibility. For half of the subjects, data on willingness to endorse excuses were obtained from the third page and source

evaluation from the fourth. For the remaining subjects, the order was reversed.

There were four opportunities to rationalize the writer's position. Responses for each were made on 13-point scales (zero to 12). Question one said, "In the rush to meet deadlines, a newspaper occasionally gets part of various printed columns mixed up. It is possible that the letter summary you read was inadvertently attributed to the wrong author. What is your best judgment about this?" The response scale went from "very probably the letter was attributed to the *wrong author*" to "very probably the letter was attributed to the *actual author*." Item two stated, "Do you think the letter writer meant what was published, or do you think he was making a 'tongue in cheek' or a sarcastic statement to communicate his position?" The response scale varied from "very probably he *meant what was printed*" to "very probably he was *being sarcastic or writing with 'tongue in cheek.'*" Item three said, "If you read the letter in the newspaper it would be difficult to determine if the whole letter or only part of it was printed. Do you think in the case of the letter you read that it was a summary of a letter printed in whole or in part?" Responses could vary from "very probably the *whole letter* was printed" to "very probably *only part* of the letter was printed." The final item stated that "The number of hours of sleep per night was mentioned only once in the letter. It is possible that the number printed in the newspaper was an error or misprint. What is your best judgment about this?" Extremes of the response scale were "very probably the number was an *error or misprint*" to "very probably the number was *NOT an error or misprint.*"

The remaining questionnaire items, presented on either the third or fourth pages of the questionnaire, gave subjects an apportunity to derogate or otherwise evaluate the source of the letter summary they received. Again all ratings were made on scales ranging from zero to 12. The first set of ratings indicated the subject's judgment of the prestige of six different occupations, including those of the three sources used in this study and three filler occupations. The next ratings indicated the authoritativeness of these same occupations in respect to the sleep issue. The third item asked for ratings of the letter writer on each of 15 traits presented in alphabetical order. There were three classes of traits, as follows: (*a*) intelligence traits (brilliant, educated, and intelligent); (*b*) character traits (deceitful, dishonest, sincere, truthful, honest, and untrustworthy); and (*c*) traits of personality (conceited, considerate, good-natured, phony, self-centered, and warm). The apparent evaluative polarity of these traits—for example, sincere is favorable and

conceited is unfavorable—was confirmed by normative ratings described previously (9).

Three control groups were run to provide an empirical baseline against which experimental data could be compared. Control groups made the same prestige and authoritativeness ratings as experimental subjects. One group rated the traits for the biologist, one for the lawyer, and one for the private. Control subjects also indicated their opinion about sleep needed.

C. Results

1. *Manipulation Checks*

Manipulation checks were obtained by analyses of the control data. The biologist and lawyer were expected to be more prestigious than the private. While there were no differences among the three control groups on prestige ratings ($F = 1.09$), the three sources were judged to have the relative level of prestige anticipated ($F = 670.87$, $df = 2,158$, $p < .001$). The mean ratings for the lawyer and biologist, respectively, of 10.37 and 8.96 did not differ[1] significantly, but both differed from the private's mean of 3.05 ($p < .01$ in both cases).

The authoritativeness of the biologist should be greater than that of the lawyer and private. It is possible that the lawyer's prestige will generalize and raise his authoritativeness above the private's; otherwise, no difference would be expected between the lawyer and private. Again, there were no differences among the ratings of the three control groups ($F < 1$), but there was a substantial difference in the ratings of the sources ($F = 249.45$, $df = 2,158$, $p < .001$). The biologist's mean of 11.27 was greater than the lawyer's mean of 5.28 and the private's mean of 3.82 ($p < .01$ in both cases), and the private and lawyer did not differ significantly.

The three control groups did not differ in their judgments of the number of hours of sleep needed ($F < 1$). The mode of each of the groups is eight hours, the popular idea of hours of sleep needed. The mean of the combined groups of 7.84 may be compared with the mean of 7.89 reported by Bochner and Insko (3) for similar ratings.

The differences between the control subject's own position and six, four, or zero hours of sleep were expected to be significant. As the difference between the combined control mean of 7.84 and 6 is highly significant ($t = 28.75$, $p < .001$), the differences between 7.84 and 4 and zero are even more

[1] Throughout this research, where factorial analyses were statistically significant, individual comparisons were made by Duncan's (4) new multiple range test, unless otherwise specified.

significant. Evidence from both the control and the experimental groups bears upon the incredibility of the discrepancies. Of the 82 control subjects, six indicated that six hours of sleep were best for health and well-being, and none indicated fewer than six hours. Of the 180 experimental subjects, 16 favored six hours, two favored five hours, and none favored less than five hours.

One factor of the design was the order in which the subjects gave responses to excuses or other ratings. Order was taken into account in the factorial analyses of replies by experimental subjects to excuses, prestige, authoritativeness, and ratings of the three sets of traits. Order produced no significant differences. The highest F for the six main effects due to order was less than one, and the largest of 18 interactions involving order yielded an $F = 2.60$, $df = 2,162$, $p > .05$. To simplify the presentation of the results, analyses given below do not include the order factor.

2. *Attitude Change*

There was no attempt to change attitudes about sleep by persuasive arguments. Attitude change can occur without a persuasive message after mentioning a discrepant position attributed to a particular source (5). A two-way analysis of experimental subjects' judgments of needed hours of sleep yielded a main effect associated with discrepancy ($F = 5.40$, $df = 2,171$, $p < .01$) and F's less than one for variation among the three sources and interaction. The means for the biologist, lawyer, and private, respectively, are 7.80, 7.78, 7.70. The means for six, four, and zero hours of discrepancy, respectively, are 7.65, 7.58, and 8.05. While the absolute differences are small, indicating little influence relative to the amounts advocated, an even smaller error term produces significances at the .01 level between the mean for zero hours, which possibly represents a slight boomerang effect, and means of the remaining two discrepancies.

3. *Evaluation of the Sources*

The three control groups provide baseline data which make possible consideration of changes in source evaluation. For all the source-evaluation data, change scores were obtained by subtracting the mean of the relevant control group from each experimental subject's score. These change scores are presented in Table 1 so that a positive value always indicates a judgment of more of an attribute by the experimental than by control subjects: that is, more authoritativeness, more prestige, and more favorable ratings of traits. Conversely, a negative change score always indicates a decrease in the attribute

being measured: that is, derogation. With the use of change scores, a statistical test of a mean difference from zero is a test of a difference between control and experimental means.

Change scores in Table 1 for authoritativeness and prestige were obtained from each subject's rating of the source whose letter-summary he read. While the factorial analysis of authoritativeness changes yields no statistically significant results (Table 2), the mean changes are uniformly positive for all sources and all discrepancies. Prestige like authoritativeness is increased in most cases. The lawyer stands out because only his prestige dropped. The highly significant F associated with changes in prestige ratings is due primarily to a significant difference between the lawyer and the other two sources ($p < .01$ in both cases).

TABLE 1
MEANS FOR EXCUSES AND FOR CHANGE SCORES MEASURING SOURCE EVALUATION, CATEGORIZED BY SOURCE AND DISCREPANCY

Measure	Source			Hours of sleep advocated		
	Biologist	Lawyer	Private	Six	Four	Zero
Personality	1.98	2.55	1.23	4.48	.51	.77
Intelligence	.95	—4.06	— .89	.15	—1.37	—2.78
Character	9.80	3.22	7.23	10.10	7.54	2.61
Authoritativeness	.48	.96	.28	.91	.36	.45
Prestige	1.45	— .54	.79	.78	.65	.28
Excuses	16.93	14.75	16.08	11.68	13.21	22.87

The three groups of traits—six character traits (e.g., honest), six personality traits (e.g., warm), and three intelligence traits (e.g., intelligent)—were analyzed separately. An individual's score for a given group of traits is the total of the responses to those traits. Scoring on negative traits was reversed so that a high rating was consistently favorable. Table 1 gives the mean changes for measures of source evaluation. As there were half as many intelligence traits as character or personality traits, the reader who wishes to make comparisons between the trait groups in Table 1 should double the means of intelligence traits.

Table 2 reveals several main effects reflecting differences due either to the source of the letter or to discrepancy. Like prestige, source effects for traits are associated primarily with the lawyer. Changes in intelligence ratings of the lawyer are significantly different from those of the biologist ($p < .01$) and the private ($p < .05$), but changes for the private and biologist do not differ significantly. Although character ratings improve for all sources, they improve significantly less for the lawyer than for the biologist ($p < .01$), and slightly

TABLE 2
Fs FROM ANALYSIS OF VARIANCE FOR EXCUSES AND FOR MEASURES OF CHANGES IN SOURCE EVALUATION

Source	*df*[a]	Personality	Intelligence	Character	Authoritativeness	Prestige	Excuses
Source credibility (A)	2	.66	6.12**	4.31*	1.69	20.89***	1.04
Discrepancy (B)	2	3.68*	2.06	5.68**	1.22	1.34	31.81***
A × B	4	1.82	.99	1.01	.30	1.08	.54
Within[b]	162	80.04	62.81	152.78	4.35	2.98	69.54

[a] Omitted order effects account for nine *df*s.
[b] Mean squares instead of *F*s.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

short of significantly less for the lawyer than for the private. Changes in character ratings of the biologist and private do not differ statistically. Discrepancy effects are associated with character and personality ratings. Changes in character ratings are due to a lesser increase in favorableness for zero hours of sleep than for six ($p < .01$), or four ($p < .05$). Changes in personality ratings are associated with a greater increase in favorableness for six hours than for four or zero ($p < .05$ in both cases).

4. *Excuses*

Individual excuse scores are the total of all responses to excuse-questions. Maximum excuses yield a score of 48 and a minimum score of zero. While there was no difference in excuse means for the sources, Tables 1 and 2 show a powerful effect associated with discrepancy. Zero discrepancy leads to more excuses than four or six hours ($p < .01$ in both cases), and four and six do not differ. The more incredible a statement appears, the higher the subjective probability that some error or misunderstanding exists. In this sense, the greater numbers of excuses for zero discrepancy probably reflect the particularly high incredibility of this position. It might also be expected that more excuses would be found for the biologist than for the other sources. Although there were slightly more excuses for the biologist than for the other sources, the difference was far from significant.

D. Discussion

When the prestigious law professor took an incredible position, he was less favorably treated than an authoritative biologist or an army private. The biologist was protected by known expertise related to the issue. The private was probably invulnerable because little could be expected of him. Expectations should be high for the prestigious professor of law. As he was unprotected by expertise, he was the most vulnerable of the sources. In all three cases where significant differences occurred for changes in source evaluation, changes for the law professor were less favorable than for the other two sources. And in two of these cases, the law professor was devalued.

In order to explain credibility data in a consistent manner, it appears necessary to go beyond the broad concept of credibility to the attributes upon which the source's credibility rests. It is instructive to consider the conclusions that would be reached if only two of the three sources had been used. If changes in source evaluation are conceived broadly in terms of degree of credibility, three mutually contradictory outcomes are possible. It would be concluded from

a comparison of only the biologist and private that changes in source evaluation following an unacceptable communication are not related to the initial credibility of the sources. If only the two professors had been used, the conclusion would change: following an unacceptable communication, changes in evaluation are less favorable for the less credible source. Lastly, the opposite conclusion would have been reached if only the renowned law professor and the private had been evaluated: changes in evaluation are more favorable for the less credible source.

There was virtually no attitude change associated with the sources, and the slight differences that did occur actually favored the least credible source. Similarly, Bochner and Insko (3), using the sleep issue, found a main effect for sources yielding an F of only .58. In their research, the differences in attitude change associated with a Nobel Prize winner in physiology and a Y.M.C.A. director for zero, three, four, five, or six hours of sleep were not significant at the .05 level, and the differences for one or two hours were considered significant by virtue of one-tailed tests. Even with extreme discrepancies embedded in a message designed to persuade, the sleep issue yielded little differential attitude change associated with source credibility. Without a persuasive message—that is, when the source is given a more or less pure opportunity to do its work—there is virtually no source effect.

In view of previous research demonstrating source main effects (e.g., 1, 2, 6), two studies yielding Fs of only .24 and .58 raise questions requiring further consideration. First, it is possible that source credibility is not a sufficient condition for influence. It may be necessary to accompany sources with a persuasive message or some other form of active influence in order to bring out source effects. Second, without accompanying persuasion, it may be necessary to choose a source with whom the subject personally identifies. Sherif, Sherif, and Nebergall (10) describe credibility in terms of reference-group members, and perhaps such group identity is necessary to obtain source effects without the use of persuasive arguments. Third, such attributes as prestige or authoritativeness may not be sufficiently influential with such an issue as sleep. The sleep issue allows the use of unequivocal numerical discrepancies in relation to a condition with which all subjects are thoroughly familiar. If the subject firmly believes he knows better by virtue of his own long experience, he may be little affected by even a very credible source, especially if the source is making an extreme statement. This third possibility seems the most likely in the present context. It is consistent with social judgment theory (10) in which source effects depend upon the ambiguity and magnitude of discrepant positions.

E. Summary

The effect upon attitude change of incredible discrepancies between one's own position and positions advocated by different sources was investigated. A three-factor design with 10 subjects per cell had three levels of discrepancy, three sources, and two orders in which subjects could either rationalize an incredible position or re-evaluate the credibility of its source. There was more derogation of a prestigious layman than either a prestigious expert or a source lacking both prestige and expertise.

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