

The Persuasive Effects of Delaying Identification of High- and Low-Credibility Communicators: A Meta-Analytic Review

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An enduring research area in the study of persuasive communication concerns the questions of what effects communicator credibility has on persuasive outcomes and why it has those effects. This paper reviews research concerning one specific aspect of credibility's effects: the role played by variations in the timing of the identification of the communicator. Ordinarily, of course, information about the source of a persuasive message is made available to the audience prior to the presentation of the message. But several investigations have examined the effects (on persuasive outcomes) of delaying identification of the communicator until after the message has been received.

Such research is of both practical and theoretical interest. Practically, the research speaks to the advisability of a communicator's delaying source identification until after the message has been presented. Theoretically, this work promises to shed light on just how communicator credibility influences persuasive outcomes. The present review seeks to provide (through meta-analytic procedures) quantitative estimates of the effects of variations in the timing of source identification. Persuasion theory and research has commonly been focused on the question of *whether* a given factor influences persuasive outcomes (or under what conditions it does so), but obtaining dependable estimates of the *size* of a factor's effect is obviously desirable as well.

METHOD

Locating Relevant Literature

Investigations of the persuasive effects of delayed communicator identification were located in the customary ways: through personal knowledge of the research literature, examination of abstract collections and citation indices, etc. To qualify for inclusion, an investigation had to compare the persuasive effectiveness of a given source-message combination under two conditions: one in which the source was iden-

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tified before the message was presented, and one in which the source was identified after the message was presented. Additionally, given the apparent importance of variations in communicator credibility as an influence on the outcomes of variations in the timing of source identification, the investigation had to provide a clear basis for classifying the credibility of the communicator. These criteria thus excluded studies that did not examine persuasive effectiveness (Ward and McGinnies "Perception") or that lacked a clear basis for credibility attribution (Husek).

Unit of Analysis and Dependent Measure

The fundamental unit of analysis was the comparison, for a given source-message combination, between the source-identification-before-message condition and the source-identification-after-message condition. Thus an investigation that paired a given persuasive message with a single source, varying only the timing of the source identification, contributed one comparison; by contrast, an investigation that paired a message both with a high-credibility source and with a low-credibility source, varying the timing of identification of each, contributed two comparisons (one involving the high-credibility communicator and one involving the low-credibility source). Most studies used a single persuasive message; the one investigation that used multiple topics (and hence multiple messages) did not report results separately for the different topics (Greenberg and Tannenbaum) and thus only a single overall comparison was obtained from that report.

What was compared between the two conditions was persuasive effectiveness. The investigations reviewed provided varied assessments of persuasive effectiveness (e.g., sometimes attitude change was assessed, sometimes only postcommunication attitude or intention), with these all treated on a par for the purpose of the present analysis. When an investigation provided multiple indices of effectiveness (e.g., both a measure of attitude and a measure of intention), these were combined into a single measure of persuasive effect.

Effect Size Measure and Analysis

The effect size index used was d , the difference between the means of the two conditions divided by the pooled estimate of the standard deviation (information about the calculation of d is widely available; see, e.g., Glass, McGaw, and Smith or Rosenthal). Regardless of the nature of the original report, d was computed such that a positive d indicated enhanced effectiveness for delayed (after-message) source identification (as compared to pre-message identification), while a negative d reflected reduced effectiveness for delayed identification (as compared to pre-message identification).

Although it is common meta-analytic practice to weight obtained effect-size estimates by the number of subjects (i.e., by study sample size), this practice was not followed here. Ordinarily, of course, a substantial threat to dependable generalization is the use of small samples, and hence usually the practice of sample-size weighting of effect-size estimates is an appropriate procedure because it helps to protect against that threat.

In the study of persuasive message effects, however, there is another—and greater—threat to dependable generalization, namely, the use of a small number of messages. As Jackson and Jacobs have noted, the practical constraint on any generalization about the persuasive effects of a message variable is the number of different messages studied. If, for example, every investigation of (say) high- vs. low-fear ap-

peals had used the same pair of messages, one would not be especially confident about fear appeal generalizations, no matter how many human subjects were involved. The reason, of course, is the variability in messages (akin to the variability in subjects): there can be very different instantiations of (say) "high-fear appeal," and thus using a single instantiation limits generalizability. Hence just as the (well-appreciated) variability in persons leads researchers to guard against relying on small numbers of participants, so the (too-often unappreciated) variability in messages should lead investigators to be cautious about using small numbers of messages. But typically persuasion researchers have used only a single message or message pair in their investigations—and so for any given persuasion variable the research may involve hundreds or thousands of human participants, but only a handful of messages.

Thus in meta-analyses of persuasive effects research, one faces the problem of coping with two potential threats to reliable generalization: the common one posed by small sample sizes, and the special one posed by small numbers of messages. What is problematic, of course, is that the usual way of handling the first threat (namely, weighting effect-size estimates by sample size) actually exacerbates the second threat (because sample-size weighting gives more weight to some messages than to others). But insofar as persuasive message effects research is concerned, the greater threat to dependable generalization appears to be too few messages, not too few subjects; hence the present analysis was undertaken without weighting effect sizes by sample size.

RESULTS

Five relevant research reports were located, these reporting seven different relevant investigations (Greenberg and Miller, Experiments 2, 3, and 4; Greenberg and Tannenbaum; Mills and Harvey; Sternthal, Dholakia, and Leavitt, Experiment 1; Ward and McGinnies "Persuasive"). These yielded ten comparisons involving a total of 593 subjects; nine different written messages were employed (none apparently repeated from one study to another), with topics including chemical warfare, consumer protection agency legislation, and international territorial sea boundaries. Of the ten comparisons, five concerned the effects of identification delay on low-credibility communicators, five concerned high-credibility communicators. As the effects of variations in the timing of source identification are commonly thought to vary depending on the communicator's credibility, the initial analysis examined separately the effects for different levels of credibility.

It may be worth underscoring that "high credibility" and "low credibility" are comparative terms here; in this research literature (as in the credibility literature generally) the communicators involved are relatively higher or lower in credibility, not necessarily high or low in absolute terms. Indeed, researchers have found it difficult to create plausible experimental manipulations that will consistently yield credibility ratings that are low in absolute terms (see, e.g., Greenberg and Miller or Sternthal, Dholakia, and Leavitt 255); this difficulty is consistent with studies of the ratings given to "ideal" high- and low-credibility communicators which have found that when respondents are asked to indicate where a perfectly credible and a perfectly non-credible communicator would be rated on competence and trustworthiness scales, the ratings are not at the absolute extremes (Clark, Stewart, and Marston; see also Burgoon). In absolute terms, the "low credibility" sources in these (and other) investigations are perhaps most lucidly described as no better than moderate in credibility.¹

Low-Credibility Sources

The five effect size estimates involving low-credibility communicators averaged $d = .317$, but with a substantial range (from -1.481 to $+1.649$). There was in fact significant heterogeneity in this collection of effect sizes, $\chi^2(4) = 25.87, p < .001$.

Examination of the effect sizes revealed that four of the five effect sizes were positive (indicating enhanced effectiveness from delayed identification), but one was negative (Sternthal, Dholakia, and Leavitt). In this investigation, unlike the others, the position advocated by the communicator was one toward which the audience was clearly initially favorable (and $d = -1.481$); in the other studies, the audience's initial stance toward the advocated position seemed to be unfavorable, neutral, or indeterminate (with a mean $d = .767$ across the four studies; $Z = 4.40, p < .001$). Excluding from the analysis the one investigation in which the audience was initially clearly favorable toward the advocated position, the set of four remaining effect sizes did not exhibit significant heterogeneity, $\chi^2(3) = 4.31, p < .23$.

This apparent role for the audience's initial judgment of the advocated position is consistent with other findings concerning the effects of communicator credibility. The direction of credibility's effect is not constant (that is, it is not the case that high credibility sources always have a persuasive advantage over low-credibility communicators). Rather, the direction of credibility's effect seems to depend on the position advocated: high-credibility communicators enjoy an advantage over low-credibility sources when the advocated position is opposed to the audience's, but low-credibility communicators are more successful than high-credibility sources when the position advocated is one toward which the audience is initially favorably disposed (see, e.g., Harmon and Coney).

High-Credibility Sources

The five effect size estimates involving high-credibility communicators averaged $d = -.222$, but again with a substantial range (from $-.867$ to $+.754$). This collection of effect sizes also exhibited significant heterogeneity, $\chi^2(4) = 16.21, p < .003$.

Given the results of the analysis concerning low-credibility communicators, the effect sizes were distinguished according to the audience's initial favorability toward the position advocated. Again, in one investigation (Sternthal, Dholakia, and Leavitt) the communicator's position was one toward which the audience was clearly favorable initially ($d = +.754$), whereas in the other four studies the audience's initial stance toward the position advocated was unfavorable, neutral, or indeterminate (mean $d = -.466$; $Z = 2.60, p < .01$). However, even excluding that exceptional case, there was still significant variability within the set of effect sizes from the remaining four investigations, $\chi^2(3) = 9.69, p < .03$. The source of this heterogeneity appeared to be the effect size from Ward and McGinnies ("Persuasive"), for that investigation yielded a positive d while the other three yielded negative ds . Application of Hedges and Olkin's disjoint cluster analysis procedure to these four cases indicated the presence of two significantly different ($p < .05$) clusters, one formed by the positive d and one by the three negative ds . Examination of these four studies, however, revealed no obvious basis for the variability in effect.

Unifying the High- and Low-Credibility Analyses

The initial analysis suggests that what is important (in determining the effects of delayed identification) is not simply the communicator's credibility level, but rather

the combination of a given credibility level with a given advocated position. This is not entirely unexpected since, as other research has indicated, certain sorts of credibility-position combinations are ordinarily (i.e., with pre-message identification) relatively advantageous (a low-credibility source with a proattitudinal position, or a high-credibility source with a non-proattitudinal position), whereas other combinations are ordinarily relatively disadvantageous (a high-credibility source with a proattitudinal position, or a low-credibility source with a non-proattitudinal position). Hence distinguishing the collected effect sizes not simply by credibility level, but by the credibility-position combination, permits a recasting of the analysis in a fashion that displays the common thread underlying the effects for high- and low-credibility sources.

Across the five effect sizes involving relatively disadvantageous credibility-position combinations, the mean d was .764 ($Z = 4.76$, $p < .001$), indicating that for such combinations delayed identification substantially enhanced persuasive effectiveness. There was not significant heterogeneity in these effect sizes, $\chi^2(4) = 4.12$, ns.

Across the five effect sizes involving relatively advantageous credibility-position combinations, the mean d was $-.669$ ($Z = 3.82$, $p < .001$), indicating that for such combinations delayed identification substantially reduced persuasive effectiveness. There was, however, significant heterogeneity in these effect sizes, $\chi^2(4) = 15.95$, $p < .01$; four of the effect sizes were negative, while one (from Ward and McGinnies "Persuasive") was positive. Hedges and Olkin's disjoint cluster analysis procedure indicated the presence of two significantly different ($p < .05$) clusters, one formed by the positive d and one by the four negative d s, but (as before) examination of the five studies revealed no obvious basis for the variability in effect.

Timing's Impact on The Magnitude of Credibility Differences

A somewhat different way of examining this research literature sheds additional light on the role played by delayed identification in determining credibility's effects. Three investigations manipulated both the timing of identification and the credibility of the communicator (Greenberg and Miller, Experiment 4; Sternthal, Dholakia, and Leavitt, Experiment 1; Ward and McGinnies "Persuasive"). These investigations thus permit examination of the question: what impact does delayed identification have on the differences (in persuasive effectiveness) between high- and low-credibility communicators? Put somewhat differently, how large are the differences (in effectiveness) between high- and low-credibility communicators when the communicators are identified prior to the message, compared to those differences when identification is delayed?

Answering this question requires disregarding the *direction* of difference in effectiveness between high- and low-credibility sources (that is, disregarding whether it is the high- or the low-credibility communicator that is more effective in a given case), and attending instead to the absolute *size* of the difference in effectiveness between credibility conditions. The question at issue concerns simply how the magnitude of credibility's impact is affected by variations in the timing of identification.

For each of the three relevant studies, then, two effect size estimates (d) were computed representing the comparison of the persuasive effectiveness of high- versus low-credibility communicators, one for each of the two identification-timing conditions (identification-before-message and identification-after-message). The absolute value of the identification-before-message d was subtracted from the absolute value of the identification-after-message d , thus yielding an index of the change in the magnitude of credibility's effect that is associated with variations in the timing of

source identifications. A positive quantity for this index would represent greater differences between credibility conditions given delayed identification (as opposed to pre-message identification); a negative quantity would represent smaller differences.

The mean of this index across the three investigations was $-.956$ (the mean absolute difference between credibility conditions was $d = 1.366$ in identification-before conditions and was $d = .410$ in identification-after conditions).² That is, delaying communicator identification substantially reduced the differential effectiveness of high- and low-credibility communicators; when communicators were not identified until after the message was presented, the impact of credibility differences on persuasive outcomes was muted.

DISCUSSION

The general picture that emerges from this review is clear enough: delaying communicator identification until after the message has been presented will tend to minimize the effects associated with variations in communicator credibility. Thus a communicator whose credibility level would ordinarily (with pre-message identification) yield a persuasive advantage will find that advantage reduced by delayed identification; correspondingly, a source whose credibility level would ordinarily produce some persuasive disadvantage can reduce that disadvantage by delaying source identification.

There are, however, two additional noteworthy features of the research reviewed. One is the size of the observed effects; the other is the constraint these effects place on explanations of the role of credibility in persuasion.

The Magnitude of Effects of Timing Variations

One notable feature of these results is the sheer magnitude of the effect sizes associated with variations in the timing of communicator identification. Of course, the ten effect sizes (that is, those representing comparisons between identification-before-message and identification-after-message conditions) vary in direction: sometimes delay enhanced persuasive effectiveness, sometimes it reduced effectiveness. But the mean absolute value across these ten estimates was $d = .753$.

Of course, it is not especially helpful to learn that the mean d is $.753$ unless one has some sense of just what that amounts to. Even a reminder that d is the difference between condition means expressed as a proportion of the standard deviation (and hence that the obtained d means that the average difference between the means of the identification-timing conditions is about three-quarters of a standard deviation) may not be all that informative.

But effect size estimates can be expressed in several (intertranslatable) equivalent forms. One such form is Rosenthal and Rubin's binomial effect size display (BESD). The BESD is an easily grasped, general way of displaying the effect of one variable on another. Specifically, it presents the effect of a given variable as a matter of the change in success rate (e.g., survival rate, improvement rate, etc.) attributable to that variable. Whether the outcome variable in question is actually dichotomous is irrelevant; the point of the BESD is to provide a readily understandable display of the magnitude of effect. The BESD corresponding to $d = .753$ is given in Table 1. As can be seen, effective timing of communicator identification more than doubles the success rate (from 32% to 68%).

TABLE 1
The Binomial Effect Size Display for the
Effects of Variations in the Timing of Source Identification

Timing condition	Outcome		Total
	Success	Failure	
Good timing	68	32	100
Poor timing	32	68	100
Total	100	100	200

Another way of gauging the magnitude of the effect size associated with variations in the timing of communicator identification is to compare this effect size with those associated with other variables. Unhappily, there are as yet relatively few meta-analytic reviews of research concerning factors influencing persuasive effects, and hence there are few relevant estimates available for comparison. Still, it may be worth noticing that the effect size (expressed as *d*) associated with gender differences in persuasibility has been estimated as between .09 and .16 (Eagly and Carli), and that of the attitudinal effects of fear manipulations in messages as .43 (Boster and Mongeau).³ In comparison, then, variations in the timing of source identification appear to be capable of producing quite substantial effects on persuasive outcomes.

Explanations of Credibility's Effects

This is not the place to provide a complete account of credibility's role in persuasion; such an undertaking requires attention to the whole of the research literature on credibility, not the small segment attended to here. But these results do place constraints on possible explanations of credibility's effects, by pointing to an empirical regularity that must somehow be accommodated. A successful general explanation of the role credibility plays in persuasive effects will need to be able to encompass the observed effects of delaying communicator identification.

Indeed, the fact that delaying identification influences credibility's effects is itself significant (never mind the details of the influence). The reason is that the effects of identification-timing variations pose problems for what might be called "associationist" explanations of the effects of credibility.

Credibility's effects as derived from source-position association. A number of investigators have suggested (implicitly or explicitly) that the effects of credibility on persuasive outcomes arise primarily from the fact of *association* between a given communicator and a particular advocated position. Thus, for example, any greater effectiveness of high-credibility communicators might be explained by receivers' tendencies to give greater credence to those positions that are espoused by high-credibility sources, just because of the link between the high-credibility source and the position; that is, the crucial factor in enhancing adherence to the advocated position is taken to be simply the association of the high-credibility communicator with the position. Conversely, it is the simple association of the low-credibility source with a given position that is taken to produce any diminished persuasive effects associated with low-credibility communicators.

Consider, for instance, the reasoning of Hovland, Janis, and Kelley:

Our principal assumption is that the individual is motivated to accept conclusions and recommendations which he anticipates will be substantiated by further experiences or will lead to reward, social approval, and avoidance of punishment. These anticipations are increased when a recommendation is presented by a person who is believed to be informed, insightful, and willing to express his true beliefs and knowledge, and are decreased when cues of low credibility are present. Thus the motives of the audience to accept recommendations are higher the more credible the person making them. (38-39)

That is, the fact that a given communicator is associated with a given position is taken to be the basis of credibility's observed effects on persuasive outcomes.

Similar associationist reasoning about the role of credibility can be detected in Bostrom's RSO theory, which is a revision of Osgood and Tannenbaum's congruity theory. The original version of congruity theory concerned the ways in which a receiver's evaluation of an object and a source may change, given the linking of the source with that object. The evaluations of the source and object are predicted to change in various ways, depending on the initial evaluations of the source and the object and on the nature of the linkage between the source and object [specifically, on whether an associative bond (in which the source favors the object) or a dissociative bond (in which the source opposes the object) is involved].

Reflecting a recognition that the receiver's evaluation (liking) of the communicator might not be as important a determinant of persuasive outcomes as the receiver's judgment of the communicator's credibility, Bostrom's RSO version of congruity theory substitutes judgments of the source's credibility for the general evaluation of the source. Additionally (among other revisions), RSO theory is limited to circumstances in which a high-credibility source advocates a position opposed to the audience's, either through an associative bond with (positive assertion about) a negatively-valued object, or through a dissociative bond with (negative assertion about) a positively-valued object. But in RSO theory the predicted changes in the evaluation of the attitude object still are seen to depend on the linking (through the associative or dissociative bond) of the source and the object.⁴ That is, in RSO theory credibility's effects are seen to derive from the fact that a given communicator is associated with a given position on the topic.

Identification timing and associationist explanations. These associationist views of credibility's effects are not straightforwardly consistent with the observed effects of variations in the timing of communicator identification. If the effects (on persuasive outcomes) of variations in communicator credibility arise simply from the fact of association between a given source and a given position, then the establishing of the association should be all that is required in order to obtain credibility's effects.

That is to say, if what really drives credibility's effects is simply that a given position is being advocated by a given communicator, then no matter when the association between communicator and position is established, the same credibility effects should be obtained. If what influences the attractiveness of a given position is that (say) a high-credibility communicator advocates it, then whenever one learns that a high-credibility source is advocating that position, one's attitude should be correspondingly influenced.

Obviously, however, the fact that the effects of credibility depend in some measure on the timing of source identification means that—however credibility has its effects on persuasive outcomes—those effects do not represent the result of a simple associat-

ing or linking of the source with a given position. When the identification of the source is withheld until after the message, the impact (on persuasive outcomes) of variations in communicator credibility is much reduced.

SUMMARY

Variations in the timing of the identification of the source of a persuasive communication can produce substantial differences in persuasive outcomes. The magnitude of the effects associated with identification-timing variations is quite large, at least by comparison to other factors for which quantitative estimates are available.

The fact that the timing of source identification is consequential poses difficulties for certain conceptions of how credibility influences persuasive effects. In particular, credibility's effects presumably cannot come about merely through the association of a given communicator with a particular position or point of view: if mere association was all that was required, then the timing of source identification would not have the substantial effects that have been observed, because it would not matter just when the association between source and position was established. But the research evidence to date indicates that when source identification is delayed until after the message has been presented, the differential effectiveness of high- and low-credibility communicators is reduced.

NOTES

¹Details of credibility ratings were not always supplied in the research reviewed. However, in Sternthal, Dholakia, and Leavitt's investigation, the credibility index (six summed credibility items) could range from 6 to 42, with a midpoint of 24; the low-credibility communicator's mean rating was 20.57 (and was not significantly different from the scale midpoint) and the high-credibility communicator's was 28.86. For the twelve-item credibility index employed by Ward and McGinnies ("Persuasive"), overall scores could range from 12 to 60 with a midpoint of 36; the mean rating for the low-credibility communicator was 34.95, while that for the high-credibility source was 41.58. In Experiment 1 by Greenberg and Miller (not an investigation of delayed identification but an investigation using credibility manipulations employed in their Experiment 3), on seven-point scales (with a midpoint of 4) the low-credibility source was rated 4.4 on trustworthiness and 4.7 on competence, while the corresponding high-credibility source ratings were 5.1 and 5.4.

²For comparison, the sample-size weighted mean of this index across the three investigations was $-.482$ (the weighted mean absolute difference between credibility conditions was $d = .859$ in identification-before conditions, and was $d = .377$ in identification-after conditions).

³These estimates are sample-size weighted estimates. For comparison, the sample-size weighted mean absolute value of d in the present investigation was $.542$, which corresponds to a BESD change in success rate from 37% to 63%.

⁴RSO theory, unlike the original version of congruity theory, does acknowledge the role played by variations in the *strength* of the associative or dissociative bond—that is, variations in just how strongly the source favors or opposes the object. But this is not relevant to the point under discussion. Credibility is still seen to have the effects it does because of the linking of source and object. Those effects may vary as the strength of the linking varies (i.e., variations in the strength of the linking may mediate the impact of credibility), but whatever impact credibility does have is still taken to be a consequence of the establishment of an association between a given communicator and a given position.

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