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AUTHOR Genova, B. K. L.; Miller, Gerald R.
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ABSTRACT

This study tested two primary hypotheses concerning the effects of mispronunciation on the ratings of source credibility. First, as the number of mispronunciations presented by a speaker increases, audience ratings of source credibility will decrease. Second, the effects hypothesized in the first statement will be stronger for audiences at a more advanced educational level. In addition, the study tested two secondary hypotheses regarding the effects of mispronunciation on the persuasive impact of the message. Following the initial pretest, subjects at two levels of educational background rated the credibility of a speaker who argued for inefficiency in government. There were four versions of the persuasive message, with the number of mispronunications varying in each version. After hearing the speech, all subjects completed the posttest. Analysis of the data provided clear support for the first hypothesis. Other results ran counter to theoretical expectations. (Author/EE)

The Influence of Mispronunciation and Educational Level on Audience Ratings of Source Credibility and Audience Attitude Change.

B.K.L. Genova and Gerald R. Miller

Numerous studies have explored ways that source credibility influences audience response. Research concerned with altering the audience's image of a communicator approaches the subject from two general directions; these are fundamentally attempts to map the interplay of multiple determinants shaping audience impressions of a speaker in real life situations.

First, work on exogenous (extrinsic) determinants of source credibility examines the image that the speaker brings with him to the communication situation. The audience responds to such stimuli as the source's professional prestige,[1] the reputation of the group to which he belongs,[2] and information gained through his introduction, the media, etc.[3] For example, Annis and Meier increased communicator credibility by planting seven editorials in the local press, thus linking their source to some opinions and actions reported there.[4] Kersten used favorable and unfavorable introductions to focus the attention of the audience upon certain characteristics of the speaker about to be heard, while Andersen used three introductions to imply authoritativeness based on occupational status.[5]

Second, endogenous (intrinsic) determinants of source credibility come into play during actual presentation of the message. The image of the speaker is shaped by such message structure and content

Abstract

This study tested two primary hypotheses concerning the effects of mispronunciation on ratings of source credibility: (1), as the number of mispronunciations presented by a speaker increases, audience ratings of source credibility will decrease; and (2), the effects hypothesized in (1) above will be stronger for audiences at a more advanced educational level than for audiences at a less advanced educational level. In addition, the study tested two secondary hypotheses regarding the effects of mispronunciation on the persuasive impact of the message: (3), as the number of mispronunciations presented by a speaker increases, attitude change will decrease; and (4), the effect hypothesized in (3) above will be stronger for audiences at a more advanced educational level than for audiences at a less advanced educational level. Following the initial pretest, Ss at two levels of educational background rated the credibility of a speaker who argued for inefficiency in government. There were four versions of the persuasive message, with the number of mispronunciations varying in each version. After hearing the speech, all Ss completed the posttest. Analysis of the data provided clear support for the first hypothesis; however, other results ran counter to theoretical expectations.

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variables as type of argumentation, two-sided versus one-sided presentation,[6] or citation of authority.[7] In addition, credibility may well be influenced by numerous verbal and nonverbal aspects of the message presentation, such as the speaker's style and appearance.[8]

For the most part, the attention of researchers has been directed at the exogenous aspects of speaker credibility.[9] At the same time, it is equally important to analyze the endogenous determinants of source credibility, an area where relatively less work has been done.[10] Inquiries emphasizing the "how" of actual delivery, to supplement the knowledge of "who" says it, may further clarify the role of components relevant to a communication situation.[11]

Despite the potential importance of the area, few researchers have directly examined the influence of specific elements of verbal delivery on source credibility. Studies of the effects of message "noise" on comprehension, retention, information gain, and general effectiveness build the bridge leading in this direction.[12] Miller and Hewgill explored the influence of two specific types of nonfluency, repetitions and vocalized pauses, and found they elicited differences in audience ratings of perceived source credibility.[13] Their findings have been replicated by Sereno and Hawkins.[14] Kibler and Barker found that mispronunciation and misspelling did not affect comprehension and retention of message content.[15] Addington concluded that the effects of mispronunciations could be tapped better by a criterion measure such as source credibility than by the generalized measure of speech effectiveness used in his study.[16]

These results suggest the potential utility of looking at the effects of presentational variables on audience reaction to the speaker. Extending our knowledge about separate delivery components should prove useful in understanding the factors relevant to the construct of source credibility. Traditionally, delivery evaluation discriminates among adjustment, fluency, bodily action, voice, articulation and pronunciation of a speaker.[17] The present study focuses on the last component; it examines possible relationships between mispronunciation and audience ratings of source credibility.

The possibility that mispronunciation affects receiver reactions to a speaker rests upon the assumption that most mispronunciations will indeed be perceived as such by the audience. Listener reaction to the cue properties of mispronunciation may depend partially on hearing acuity and partially on normative expectations regarding "correct" speech. It is generally assumed that education familiarizes students with the criteria of "proper" usage and makes them sensitive to undesirable violations of the rules. If this is so, then increased education is likely to decrease listener tolerance of verbal errors and thus play a role in audience reaction to mispronunciation, particularly since prescriptive standards of "proper" usage sometimes depart from typical pronunciation. Taken as a whole, this reasoning suggests a possible inverse relationship between quantity of mispronunciation and perceived source credibility, particularly for highly educated audiences. Consequently, the following primary hypotheses were tested in this study:

1. As the number of mispronunciations presented by a speaker increases, audience rating of source credibility will decrease.

2. The effect hypothesized in 1 above will be stronger for audiences of a higher educational level than for audiences of a less advanced educational level.

In addition, evidence accumulated so far does not indicate that speaker skills are a very powerful determinant of persuasiveness.[18] Both Miller and Hewgill and Sereno and Hawkins reported that nonfluency variations did not affect the persuasiveness of the message.[19] Similarly, Greenberg and Razinsky reported that attitude change remained independent of message quality.[20] Still, if mispronunciation does lead to a decrement in credibility, it seems possible that it may also dampen the persuasive impact of the message. Hence, two secondary hypotheses were also tested:

3. As the number of mispronunciations presented by a speaker increases, attitude change will decrease.

4. The effect hypothesized in 3 above will be stronger for audiences of a higher educational level than for audiences of a less advanced educational level.

METHOD

Subjects:

Ss used in this study were members of three undergraduate and three graduate communication classes at Michigan State University enrolled in the Fall of 1972. Most Ss came from the Midwestern area of the United States, particularly Michigan, Ohio and Illinois, and were generally from the middle and lower middle socio-economic strata. The enrollment patterns suggested certain emphasis on the

humanities. At the same time, there was no evidence that the Ss reflected any particular distribution with regard to hearing acuity or sound discrimination abilities. Ss within each class were randomly assigned to treatment groups.

Independent Variables:

The independent variables in this study were degree of mispronunciation and level of education.

Mispronunciation was defined as an oral production of a word not listed as acceptable in the second edition of Webster's New International Dictionary. More specifically, mispronunciations were operationally defined as instances of: (1) inversion or flip-over of the sounds "r" and "l"; (2) sound addition (consonant and vowel); (3) vowel omission; (4) sound distortion; and (5) misplaced accent. Distortions of these five kinds met the following criteria: first, mispronounced words remained recognizable; second, the stimulus retained a character of "General American Speech."

Since interest was directed at the possible effects of mispronunciations in general rather than the relative effects of sound distortion, misplaced accent or other specific mispronunciations, the number of errors allocated to each category was arbitrary and also contingent upon the systematic insertion were determined by dividing the total number of words in the message by the number of mispronunciations to be inserted, so that errors were distributed in a reasonably even manner throughout the text.

Using evidence acquired from previous studies,[21] the researchers chose three levels of manipulation for this independent variable: four percent, six percent and eight percent mispronunciation. These three levels met two relevant criteria: first, they were perceptually distinct to the audience; second, degree of distortion varied from relatively low to relatively high.

The stimulus employed was a 644-word message. The speaker argued for a relatively favorable attitude toward inefficiency in government, contending that inefficiency is an inherent feature of political reality consistent with the principles of a contemporary democratic society. After points of insertion for each of the three levels of manipulation were determined, one original and three appropriately marked copies of the speech were prepared. The taping was done in a sound-proof studio by a trained radio announcer. Considerable care was taken to keep constant all elements of the message save for the number of mispronunciations included in each version. The manipulation resulted in four versions of the stimulus: the error-free version of approximate duration of 5 1/2 minutes and three experimental versions of durations varying by approximately four seconds.

Two levels of education were utilized in this study. The less advanced level consisted of freshman college students, while the more advanced level consisted of graduate students, mostly at the masters level. After random assignment to treatments at each of the two levels of education, there was a control group, a four percent group,

a six percent group and an eight percent group. Ss were later randomly discarded to obtain an n of 23 for each of the eight cells (N=184).

Dependent Variables:

Perceived source credibility and receiver attitude change were the dependent variables in this study.

Perceived credibility of the speaker was measured by twelve seven-interval scales on the semantic differential, along three factors according to Berlo, Lemert, and Mertz.[22] The response indicating highest perceived source credibility was given a value of seven, while the response indicating the lowest perceived source credibility was scored as one. Each S's score on a factor was obtained by summing across the four pertinent scales; thus, a score of 28 on a factor indicated maximum perceived credibility on any factor, while a score of 4 indicated minimum perceived credibility. Table 1 presents the scales used for the credibility measure.

Table 1. Scales used to measure dimensions of credibility.

Credibility factors:	Scales:	Factor loading:
Competence	Experienced-Inexperienced	.90
	Expert-Ignorant	.90
	Trained-Untrained	.90
	Competent-Incompetent	.88
Trustworthiness	Just-Unjust	.82
	Kind-Cruel	.78
	Admirable-Contemptible	.77
	Honest-Dishonest	.75
Dynamism	Aggressive-Meek	.73
	Bold-Timid	.72
	Energetic-Tired	.65
	Extroverted-Introverted	.64

Ss expressed their attitude toward the topic on nine seven-interval scales on the semantic differential, highly loaded on the evaluative factor.[23] These scales were: desirable-undesirable, good-bad, fair-unfair, acceptable-unacceptable, nice-awful, excellent-poor, pleasant-unpleasant, attractive-unattractive and beautiful-ugly. The most favorable response was assigned a score of seven; the least favorable response was assigned a score of one. Each score was obtained by summing responses across all scales. Thus, a score of 63 indicated a S's most favorable response, while a score of 9 indicated his least favorable response. Only data from Ss who participated in both pretest and posttest were subsequently used. The smallest group contained 12 Ss, so Ss in each of the other groups were randomly discarded to obtain an n of 12 per cell (N=96).

Procedure:

Three weeks prior to presenting the experimental message, pretest data on attitudes toward the topic were obtained from all groups. These pretests were obtained during regular class sessions. Three other attitude items were included in the pretest. All Ss were told that some community broadcasts were being prepared and that their ratings of topics would help in planning these radio programs.

Ss were exposed to the experimental stimuli during class time allotted for this purpose, within two blocks of three consecutive days. A 10-day lapse between blocks was necessary to avoid election

week. The message was introduced with a general statement intended to mask the real purpose of the experiment. The speaker was not identified. Ambient noise was sufficiently low in each test room so as not to interfere with testing: 25-31 DB, S/N on the B scale of a Bruel and Kjaer sound level meter. Immediately after hearing the speech, each S completed the posttest instrument. Completion of this instrument terminated the experiment. On the week following data collection from all groups, the Ss were debriefed during regular class time.

RESULTS

The .05 level of significance was employed for all statistical tests. Analysis of the data yielded for the following results.

Primary Hypotheses:

Table 2 contains the mean competence ratings for subjects in the eight conditions, along with a summary of the two-factor analysis of variance for the competence data. This analysis produced a nonsignificant F for the quantity of mispronunciation by educational level interaction. The obtained F for the level of education main effect was also nonsignificant. The main effect for quantity of mispronunciation yielded a significant F of 34.85.

Table 2. Mean competence ratings and summary of analysis of variance of competence data for subjects in the eight conditions.

Level of Education	Level of Mispronunciation			
	0%	4%	6%	8%
Graduate	22.60	15.00	12.65	11.91
Undergraduate	21.52	12.13	11.52	11.95

Source of Variance	df	SS	MS	F	
Quantity of Mispronunciation (A)	3	3212.04	1070.68	34.85	<.05
Educational Level (B)	1	73.13	73.13	2.38	n.s.
A x B	3	49.87	16.62	<1.00	n.s.
Within	176	5407.56	30.72		
Total	183	8742.60			

Use of the critical difference technique[24] yielded a total of 16 significant differences among the 28 possible comparisons of competence means (Table 3). As would be expected from the analysis of variance, the comparisons provide support for the first primary hypothesis of the study and fail to support the second. In terms of quantity of mispronunciation, both graduate and undergraduate subjects who heard the error-free speech rated the speaker significantly more competent than the subjects in any of the other conditions. Subject ratings in the 0%, 4% and 8% conditions differ markedly. Mean ratings for the 4% and 6% conditions and for the 6% and 8% conditions, while showing the expected decline, do not differ significantly.

Table 3. Critical difference matrix for mean competence ratings.

	u.0%	gr.4%	u.4%	gr.6%	u.6%	gr.8%	u.8%
gr.0%	1.08	7.6 *	10.08*	9.95*	11.08*	10.69*	10.65*
u.0%		6.52*	9.39*	8.87*	10.00*	9.61*	9.57*
			2.87*	2.35	3.48*	3.09*	3.05*
u.4%				-0.52	0.61	0.22	0.18
gr.6%					1.13	0.74	0.70
u.6%						-0.39	-0.43
gr.8%							-0.04

In terms of educational level, mean competence ratings for the source were, except for the 8% condition, lower for the undergraduates than for the graduates. This result, while not significant, is opposite to theoretic expectations. The most marked difference

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* $p = <.05$; c.d. = 2.29

occurs in the 4% condition, where graduates rated the speaker significantly more competent than the undergraduates. The rest o. c parisons show no significant differences.

Table 4 contains the mean trustworthiness ratings for subjects in the eight conditions along with a summary of the two-factor analysis of variance for the trustworthiness data. While the test for quantity of mispronunciation by educational level interaction produced a nonsignificant F, the F's for both main effects were significant.

Table 4. Mean trustworthiness ratings and summary of analysis of variance of trustworthiness data for subjects in the eight conditions.

Level of Education	Level of Mispronunciation			
	0%	4%	6%	8%
Graduate	20.21	18.65	17.69	17.52
Undergraduate	19.43	16.82	16.82	16.21

Source of Variance	df	SS	MS	F	
Quantity of Mispronunciation (A)	3	239.37	79.79	7.43	<.05
Educational Level (B)	1	65.76	65.76	6.12	<.05
A x B	3	7.89	2.63	<1.00	n.s.
Within	176	1889.91	10.74		
Total	183	2202.93			

Again, comparison of all possible pairs of means by use of the critical difference technique (Table 5) indicates support for the first primary hypothesis and lack of support for the second. In

terms of quantity of mispronunciation, both graduate and undergraduate students in the 0% condition rated the speaker significantly more trustworthy than in any other condition. As with competence, the most marked differences are between the 0%, 4% and 8% conditions. The other ratings, despite showing the predicted decline, do not differ significantly.

Table 5. Critical difference matrix for mean ratings on trustworthiness.

	u.0%	gr.4%	u.4%	gr.6%	u.6%	gr.8%	u.8%
gr.0%	0.78	1.56*	3.39*	2.52*	3.39*	2.69*	4.00*
u.0%		0.78	2.61*	1.74*	2.61*	1.91*	3.22*
gr.4%			1.83*	0.96	1.83*	1.13	2.44*
u.4%				-0.87	0.00	-1.17	0.61
gr.6%					0.87	0.17	1.48*
u.6%						-0.70	0.61
gr.8%							1.31

In terms of educational levels, the results are at odds with hypothesis 2: mean ratings of trustworthiness are lower for undergraduate than for graduate subjects. Again, the most marked difference occurs in the 4% condition, where undergraduates rated the speaker significantly less trustworthy than did graduates. The other comparisons show no significant differences. These results, while significant, do not reveal a great magnitude of difference when compared to the outcomes for competence and dynamism, and thus would suggest a statement of minimal social import.

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* $p = <.05$; c.d. = 1.34

Table 6 contains the mean dynamism ratings for subjects in the eight conditions along with a summary of the two-factor analysis of variance for the dynamism data. The F for the test of the quantity of mispronunciation by educational level interaction was not significant, but the F's obtained for both main effects were significant.

Table 6. Mean dynamism ratings and summary of analysis of variance of dynamism data for subjects in the eight conditions.

Level of Education	Level of Mispronunciation			
	0%	4%	6%	8%
Graduate	17.43	16.21	13.86	13.17
Undergraduate	16.04	14.47	11.52	11.26

Source of Variance	df	SS	MS	F	
Quantity of Mispronunciation (A)	3	641.63	213.87	12.84	$<.05$
Educational Level (B)	1	157.06	157.06	9.43	$<.05$
A x B	3	5.46	1.82	<1.00	n.s.
Within	176	2930.35	16.64		
Total	183	3734.50			

Use of the critical difference technique (Table 7) revealed 18 significant differences among the 28 possible comparisons of dynamism means. Again, these comparisons provide support for the first primary hypothesis, while running counter to the second In terms of quantity of mispronunciation, subjects on both educational levels who heard the error-free speech rated the speaker significantly more dynamic than did subjects in any other condition, and there are

generally consistent differences between each of the four levels of mispronunciation. In terms of educational level, all comparisons between graduate and undergraduate subjects, save for the 0% condition, are significant. But contrary to theoretical expectations, the comparisons reveal that undergraduates rated the source significantly less dynamic than their graduate counterparts.

Table 7. Critical difference matrix for mean ratings on dynamism.

	u.0%	gr.4%	u.4%	gr.6%	u.6%	gr.8%	u.8%
gr.0%	1.39	1.22	2.96*	3.57*	5.91*	4.26*	6.17*
u.0%		-0.17	1.57	2.18*	4.52*	2.87*	4.78*
gr.4%			1.74*	2.35*	4.69*	3.04*	4.95*
u.4%				0.61	2.95*	1.30	3.21*
gr.6%					2.34*	0.69	2.60*
u.6%						-1.65	0.26
gr.8%							1.91*

Secondary Hypotheses:

The analysis of attitude change scores for subjects in the eight conditions (Table 8) suffers from marked subject attrition. This attrition results from the fact that pretest attitude scores were not available for many subjects who participated in the main experimental session, because these subjects were absent at the time of the pretest. The resultant small cell size (n=12) led to a test with insufficient power to detect differences, even though

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* p = <.05; c.d. = 1.69

the mean change scores are somewhat in line with Hypothesis 3. In the case of Hypothesis 4, however, the mean attitude change scores run counter to expectations, with graduates reporting more attitude change than undergraduates, even though the difference between educational levels is not significant.

Table 8. Mean attitude change scores and summary of analysis of variance of attitude change data for subjects in the eight conditions.

Level of Education	Level of Mispronunciation			
	0%	4%	6%	8%
Graduate	11.91	13.33	5.58	5.91
Undergraduate	7.50	4.00	4.41	7.75

Source of Variance	df	SS	MS	F
Quantity of Mispronunciation (A)	3	375.86	125.28	1.00
Educational Level (B)	1	297.51	297.51	2.08
A x B	3	390.53	130.17	1.00
Within	88	12543.58	142.54	
Total	95	13607.48		

DISCUSSION

The findings of the present study provide clear support for the hypothesis that as quantity of mispronunciation increases, audience ratings of source credibility decrease. For all three dimensions of source credibility, subjects who heard the speech containing no mispronunciations rated the speaker more credible than did subjects who heard speeches containing any of the other three levels of mispronunciation. It is interesting to note that this effect attenuates before the maximum level of mispronunciation is reached, a conclusion supported by the lack of significant differences in ratings of credibility between audiences who heard the messages containing six percent and eight percent mispronunciations. Thus, the results coincide with previous studies dealing with such delivery variables as nonfluency and suggest that presentational errors have a deleterious effect on audience perceptions of speaker credibility.[25]

One deviation of the present findings merits specific mention. Whereas prior studies have produced effects for only the competence and dynamism dimensions of credibility, an effect on trustworthiness was also observed in the present study. At first glance, it is difficult to see why mispronunciation should influence audience perceptions of a speaker's trustworthiness. Possibly, the result can be attributed to the fact that the data were collected at a time near the 1972 Presidential election. Certainly, the topic of government inefficiency and waste would be particularly salient at that

time, and this high salience may have manifested itself by generating differing perceptions of trustworthiness, as well as competence and dynamism.

The results obtained for the educational level variable are puzzling, and run directly counter to theoretic expectations. While it was hypothesized that audiences of a higher educational level would be more sensitive to normative violations of pronunciation rules and that this greater sensitivity would exercise a more marked influence on perceptions of credibility, an exactly opposite outcome was observed: undergraduate subjects exposed to speeches containing a number of mispronunciations reported lower ratings of credibility than did graduate subjects. Although any attempted interpretation of this finding is admittedly speculative, there are at least two possible explanations, one substantive and one procedural, which may account for it.

First, it may be that the reasoning underlying Hypothesis 2 is faulty. Perhaps at some point, greater education causes an individual to be less prescriptive, and consequently more tolerant of pronunciation errors. Most of the graduate subjects in the study had taken at least several courses in communication -- courses that stress such notions as the importance of adopting a receiver orientation and the fact that meaning is relative. By contrast, undergraduate subjects were enrolled in their first course in communication, and most of them had recently been exposed to high school classroom experiences which probably place greater emphasis on the

importance of prescriptive standards of communication. Thus, it is possible that graduate subjects may have attended more closely to the content of the speaker's message, while at the same time being less affected by the delivery errors accompanying it.

In a closely related procedural vein, the use of only two educational levels, graduate and undergraduate, may have resulted in an ineffective manipulation of that variable. Actually, of course, both levels fall on the upper portion of the educational continuum; neither group of subjects can be characterized as poorly educated. Future studies should seek to establish a wider range of educational level; for example, one could compare the responses of eighth grade graduates, high school graduates, college upperclassmen, and graduate students. Such an expansion of the range might reveal that the relationship between delivery errors such as mispronunciation and perceptions of credibility is a curvilinear function of education, with the effect increasing up to some level of education after which it falls off.

Like most prior studies, the present investigation provides no evidence that delivery errors dampen the persuasive impact of a message. As was noted above, however, this conclusion is tempered by the marked subject attrition that accompanied the attitude change measure. Since some reasonably substantial differences in mean attitude change were observed, it is possible that a more robust test would have revealed differences in message persuasiveness. It remains for future research to deal with this question, as well as

numerous others related to the influence of presentational variables on speaker credibility and persuasive impact.

Footnotes

B.K.L. Genova is a doctoral student and Gerald R. Miller is professor in the Department of Communication, Michigan State University.

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