DIMENSIONS OF COMMUNICATOR CREDIBILITY: AN OBLIQUE SOLUTION

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SEVERAL researchers have studied the dimensionality of perceived communicator credibility.[1] They have all used rating scales of the semantic differential or Likert type for the collection of data, and they have all used factor analysis with orthogonal rotation in order to identify independent dimensions of credibility or acceptability. The main purpose of this paper is to present an oblique solution, and to argue that this fits the data better, offers richer opportunities for interpretation of the dimensions, and proves more effective in prediction of attitude change than an orthogonal solution.

In the most substantial published study, Berlo, Lemert, and Mertz obtained data on a large number of rating scales for several communicators from a representative sample of a specified population. The orthogonal dimensions resulting from the data were labeled *safety, qualification,* and *dynamism*. Very similar results have been obtained by other researchers; in some cases larger numbers of factors have been identified, but such additional factors seem to account for negligible proportions of variance, and they often arise from a single pair of inter-correlated rating scales.

One might infer from these results that three clusters of variables should be visible when the factor loadings are plotted graphically. However, the data of Berlo, Lemert, and Mertz reveal five rather than three clusters of rating scales. The *safety, qualification,* and *dynamism* clusters are clearly revealed, but there are two additional clusters which have moderately high loadings on Factors 1 and 2. The authors did not discuss these last two clusters. Examination of the two un-named clusters suggested that important aspects of the communicator could be overlooked if attention were focused solely on the three orthogonal dimensions. The un-named clusters seem to involve respect, trust, and scholarship, which are qualities appreciably different from safety, qualification, and dynamism.

It was also evident that the factor loadings of many of the rating scales in this study formed a broad arc, ranging from *safety* to *qualification*. This could be interpreted as indicating a simplex structure rather than an orthogonal factor structure. The simplex could be interpreted as showing that appropriate words in the English language can express many shades of meaning between the two extremes of safety and qualification. In this case, safety and qualification should be considered as the two extremes of a semantic spectrum, rather

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[1] See Ronald F. Applbaum and Karl W. Anatol, "Factor Structure of Source Credibility as a Function of the Speaking Situation," *SM*, 39 (1972), 216-222; David K. Berlo, James B. Lemert and Robert J. Mertz, "Dimensions for Evaluating the Acceptability of Message Sources," *Public Opinion Quarterly*, 33 (1969), 563-576; Kim Giffin, "The Contribution of Studies of Source Credibility to a Theory of Interpersonal Trust in the Communication Process," *Psychological Bulletin*, 68 (1967), 104-120; and David Markham, "The Dimensions of Source Credibility of Television Newscasters," *Journal of Communication*, 18 (1968), 57-64.

than as "underlying" factors. This interpretation is substantially different from that made by Osgood, Suci, and Tannenbaum, whose studies of the measurement of meaning provide a basis from which the study of communicator dimensions has developed.

Social-psychological research on attitude change and conformity provides a further reason for doubting that the three-factor solution provides the final answer to the question of communicator dimensionality. This literature shows that interpersonal attractiveness is a relevant variable; yet none of the factor-analytic studies appears to have revealed it. Furthermore, the popular term "charisma" does not seem to have been captured by any of these studies. In view of these apparent omissions, it would be premature to choose between the simplex and factor models discussed above.

The present study represents an attempt to obtain an oblique solution, in which previously ignored clusters might be revealed as oblique dimensions, and in which the inclusion of scales measuring aspects of attractiveness and emotional appeal might lead to the identification of corresponding dimensions. A further reason for conducting this study was the fact that the relationships between communicator dimensions and persuasive effectiveness had not previously been investigated, and there was an evident need to extend dimensional studies in this direction.

Method

Subjects and Procedure

The 101 subjects were volunteers from various introductory behavioral sciences courses at three campuses in the San Francisco Bay area; the study took place in July 1970. The subjects read a booklet containing short character sketches of ten communicators. Immediately after reading each sketch, the subject rated the communicator on a series of 64 rating scales. In each subject's booklet, four of the communicators were presented as delivering a persuasive message, while the other six communicators were evaluated without an accompanying message. The orders of presentation of the ten communicators, and their pairing with the four messages, were varied systematically.

Communicators and Messages

The ten communicators, who were fictitious, were presented as individuals who had expressed their points of view on a recent radio program. The character sketches, about 300 words in length, were selected in order to present a variety of communicators, who were considered likely to provide a range of perceived trustworthiness, expertise, and attractiveness. The ten communicators were a student, a professor, an advertising executive, a farmer, an unethical businessman, a doctor, a retired army officer, a man of religion, a hippie, and a television personality. The topics of the four messages were: how many hours of sleep you need; marijuana and health; duration of U.S. involvement in S.E. Asia; and tuition fees at State Colleges.[2]

Rating Scales

A total of 28 bipolar-adjective scales and 36 seven-point Likert[3] scales were used. Some of the scales were devised by the writer; the majority were selected from previous studies.[3]

[2] Full details are provided in Christopher J. S. Tuppen, "Perceptions of Source Credibility and Change in Attitudes," (Doctoral dissertation, University of California, Berkeley) Ann Arbor, Mich.: University Microfilms (1971), Order No. 71-20, 917.

[3] See Berlo, Lemert and Mertz; Markham; Herbert C. Kelman and Alice H. Eagly, "Attitude toward the Communicator, Perception of Communication Content and Attitude Change,"

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Results

From the ratings of the ten sources made by 101 subjects, a total of 973 sets of complete ratings of individual sources were available for analysis.

The technique selected for oblique dimensional study was cluster analysis.[4] The results of such an analysis resemble an oblique factor solution, though the two methods are computationally quite different after the stages of computing a correlation matrix and estimating communalities. Typically, an empirical cluster analysis is first performed, followed by a pre-set analysis, in which the researcher may modify the definers of any cluster of variables, in order to increase collinearity and reliability, to facilitate interpretation, and to ensure that no variable is selected as a definer of more than one cluster.

In this case, the *empirical* analysis yielded a solution with four oblique clusters, but the fourth cluster was not readily interpretable, nor were its definers highly collinear. It was decided that the fourth cluster could be divided into two, this procedure being justifiable both in terms of meaning and in terms of the spatial configuration of the variables. Accordingly, a *pre-set* analysis was performed. The results are summarized in Tables 1 and 2, and in Figures 1 and 2.

Cluster Five was found to have the greatest generality, accounting for 66 per cent of the communality, followed by Clusters One (64 per cent), Four (59 per cent), Two (49 per cent), and Three (16 per cent). These percentages summate to over 100 because the clusters were oblique: all clusters except Three were substantially inter-related. The configurations can be seen on Figures 1 and 2, in which the variables are represented as points on the surface of a sphere. (In the BCTRY system, these are termed "SPAN" diagrams.) The alpha-reliabilities of the cluster scores were high, ranging from .851 to .965.

The proportion of total variance accounted for was 63 per cent. This figure is very close to the results of Berlo's two studies (62 and 60 per cent) and Markham's study (62 per cent).

Discussion

The first three clusters found in this study were very similar to the dimensions identified by Berlo, Lemert and Mertz. The first cluster has been labeled *Trustworthiness,* and is comparable to Berlo's *Safety* dimension and McCroskey's *Character* scale. All five of the variables selected by Berlo et al. as most representative of "Safety" had high loadings on this dimension, though in this study there were other variables which had higher loadings. A communicator who scored highly on Cluster 1 was seen to be trustworthy, honest, reputable, good, dependable, safe, etc. The meaning of the cluster has shifted somewhat and has broadened in comparison with that of Berlo et al. A rotation of their Factor 1 axis through an angle of about 25 degrees would lead to a very similar solution.

Three of the definers of Cluster 1, good-bad, honest-dishonest, and kind-unkind, were also selected by Osgood, Suci, and Tannenbaum[5] to typify their *Evaluative* dimension. However, the majority of the definers of Cluster 1 were especially relevant to assessment of com-

Journal of Personality and Social Psychology, 1 (1965), 63-78; and James C. McCroskey, "Scales for the Measurement of Ethos," *SM,* 33 (March, 1966), 65-72.

[4] Robert C. Tryon and Daniel E. Bailey, *Cluster Analysis* (New York: McGraw-Hill, 1970).

[5] Charles E. Osgood, George J. Suci, and Percy H. Tannenbaum, *The Measurement of Meaning,* (Urbana, Ill.: University of Illinois Press, 1957).

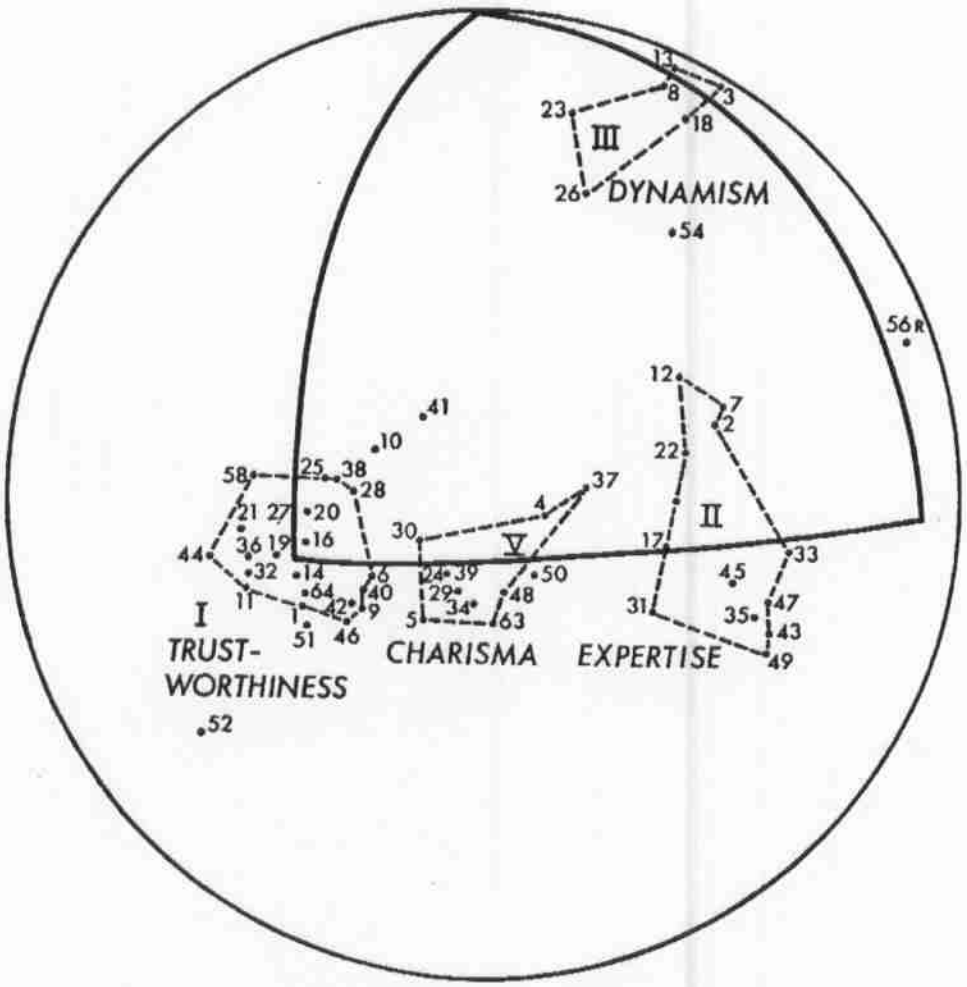

FIGURE 1. SPHERICAL DIAGRAM FOR DIMENSIONS 1, 2, AND 3.

municators, and it was concluded that scores on this cluster would provide information that would not be supplied by *evaluative* items only.

Cluster 2 was labeled Expertise, and is comparable to Berlo's *Qualification* and McCroskey's *Authoritativeness* factors.

Cluster 3 was identical to Berlo's *Dynamism* factor.

Cluster 4, *Co-orientation,* does not appear to have a counterpart in any previous dimensional study. A source who scored highly on this cluster created a favorable impression, stood for a group whose interests coincided with those of the rater, represented acceptable values, and was someone to whom the rater would like to listen. These appear to be the aspects of the communicator that Kelman and Eagly considered the "source-oriented" listener would attend to.

The co-orientation dimension was quite highly correlated with Clusters 1, 2, and 5. When the communality accounted for by the first three clusters was partialled out, Cluster 4 accounted for only 8.3 per cent of the total communality, whereas it accounted for 59 per cent of the total communality as an oblique cluster when there was no prior

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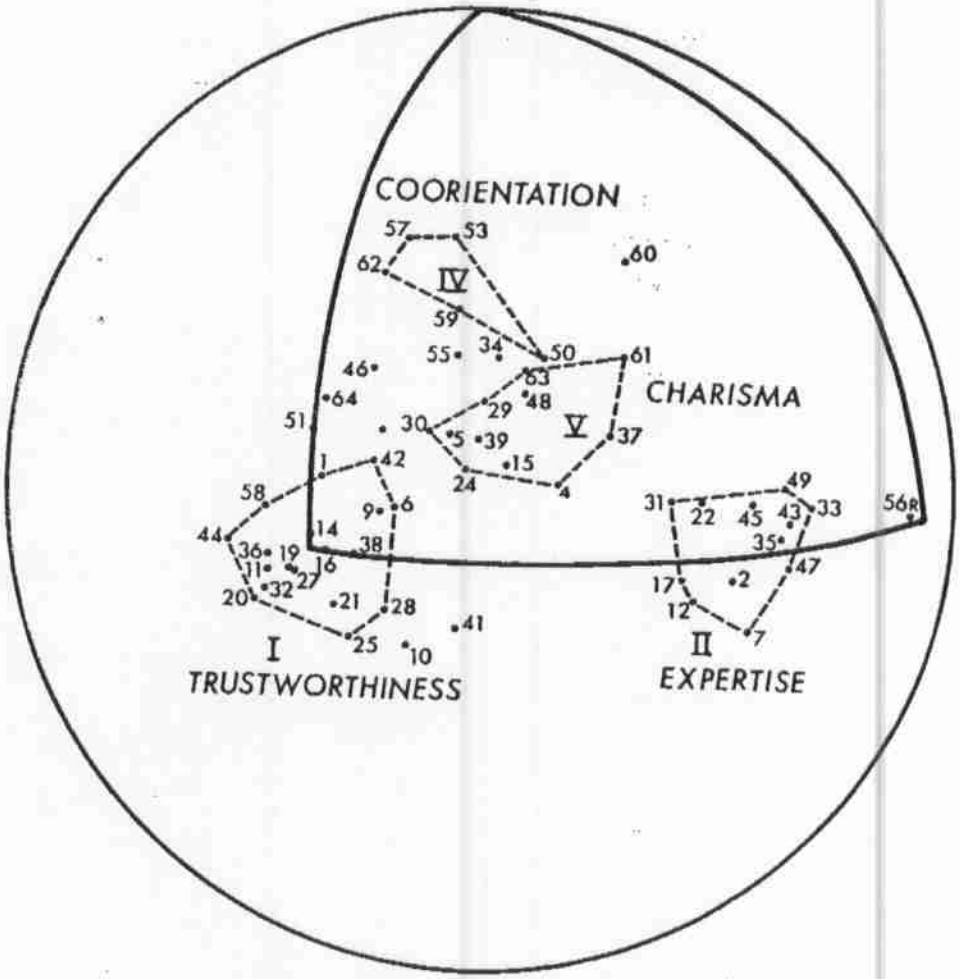

FIGURE 2. SPHERICAL DIAGRAM FOR DIMENSIONS 1, 2, AND 4.

partialling out. The multiple correlation of the Cluster 4 domain score[6] with the domain scores on Clusters 1 and 2 was .81. This was a high value, but it was still far from indicating total predictability. It was concluded that the Cluster 4 score could provide useful additional information about the source.

Cluster 5 was labeled *Charisma*. This is a term which has recently acquired great popularity, though it is often used imprecisely. Weber introduced the term into sociology, using it to describe extraordinary merit, grace, genius, or power in a leader, which brings about a direct personal allegiance in his followers. It is not suggested that any of the sources used in this study were perceived to be charismatic in this extreme sense, but rather that there is a continuum of perceived charisma which can be operationally defined and measured in terms of this cluster of items. A communicator who is thought of as convincing, reasonable, right, logical, believable, intelligent; whose opinion is respected, whose background is admired, and in whom the reader has confidence, could be said to possess, at least in part, the attributes described by Weber. These attributes imply respect and readiness to be con-

[6] Cluster domain correlations are raw cluster score correlations with a correction for attenuation which is based upon their reliabilities.

TABLE 1

CLUSTER DEFINERS AND THEIR OBLIQUE FACTOR COEFFICIENTS

Item No.	Item	Oblique factor co-efficient C_1	C_2	C_3	C_4	C_5
	CLUSTER 1: TRUSTWORTHINESS					
19.	Trustworthy—Untrustworthy	88	47	10	67	69
21.	Honest—Dishonest	87	40	09	60	62
32.	This speaker is basically honest	86	40	03	62	62
20.	Reputable—Disreputable	80	47	19	57	61
14.	Good—Bad	80	45	07	65	69
44.	This speaker is a scoundrel (—)	79	32	01	59	57
25.	Undependable—Dependable	78	49	24	52	60
28.	Responsible—Irresponsible	78	52	23	57	63
1.	Safe—Unsafe	76	44	02	68	69
6.	Just—Unjust	76	54	13	67	74
9.	Fair—Unfair	76	52	07	67	74
38.	The reputation of this speaker is low (—)	76	48	23	58	60
42.	I do not trust the speaker to tell the truth on this topic(—)	76	51	07	72	74
27.	Sincere—Insincere	75	40	13	55	58
11.	Kind—Unkind	75	35	00	55	56
36.	This speaker is not an honorable person (—)	70	33	05	52	52
16.	Friendly—Unfriendly	59	34	09	46	53
	CLUSTER 2: EXPERTISE					
31.	This speaker is a reliable source of information on the topic	60	84	25	67	76
43.	This speaker is an authority on the topic	39	80	24	49	62
35.	I would consider this speaker to be an expert on the topic	40	79	25	48	69
17.	Qualified—Unqualified	56	79	35	53	68
45.	This speaker has very little knowledge of the factors involved in this topic (—)	44	78	29	53	68
33.	This speaker lacks information on the topic (—)	33	74	34	44	58
47.	This speaker has had substantial experience with this subject	35	73	26	40	53
22.	Informed—Uninformed	45	73	45	49	69
7.	Experienced—Inexperienced	37	68	49	31	48
2.	Trained—Untrained	40	68	46	37	51
12.	Skilled—Unskilled	43	66	50	36	52
49.	Many people are much more qualified on this topic than this speaker (—)	30	63	17	42	48
	CLUSTER 3: DYNAMISM					
13.	Bold—Timid	04	25	77	—03	08
18.	Active—Passive	08	35	70	02	16
3.	Aggressive—Meek	—10	24	70	—09	03
23.	Energetic—Tired	27	39	68	20	30
8.	Emphatic—Hesitant	00	24	66	—02	10
26.	Strong—Weak	34	44	61	26	38

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CLUSTER 4: CO-ORIENTATION

59.	On the whole, I react favorably to this speaker	72	60	06	91	85
57.	This speaker represents a group whose interests conflict with mine (—)	63	44	04	84	72
62.	This speaker stands for values to which I am fundamentally opposed (—)	66	43	01	83	72
53.	This speaker stands for a group of which I am a member	54	45	05	75	64
50.	I should like to listen to this speaker	51	52	17	61	62

CLUSTER 5: CHARISMA

39.	I have little confidence in this speaker (—)	76	65	18	80	82
24.	Reasonable—Unreasonable	71	60	16	70	81
63.	I can trust the judgment of this speaker	69	65	13	81	79
61.	This speaker is convincing	51	65	31	67	76
5.	Right—Wrong	68	56	08	71	76
29.	I respect this speaker's opinion on the topic	65	56	13	71	75
30.	I admire the speaker's background	75	58	21	75	74
4.	Logical—Illogical	58	62	28	58	72
48.	Under most circumstances I would not be likely to believe what this speaker says about the topic (—)	56	55	14	65	68
15.	Believable—Unbelievable	55	51	19	56	67
37.	I believe that this speaker is quite intelligent	47	56	30	52	60

OTHER VARIABLES APPEARING ON FIGURES 1 AND 2

10.	Stable—unstable	72	51	29	50	61
34.	I should consider it desirable to be like this speaker	65	59	13	78	75
40.	I believe that this speaker is concerned with my well-being	69	47	09	68	67
41.	This speaker has low status in our society (—)	57	46	31	40	47
46.	I should like to have this speaker as a personal friend	74	48	01	80	70
51.	This speaker would respect the rights of other people	78	44	—02	75	70
54.	This speaker has a dynamic personality	26	49	60	35	43
55.	This speaker is a person whose opinions are biased and one-sided (—)	51	42	06	60	63
56	This speaker is probably going to obtain personal advancement for his statement (—)	23	—10	—23	15	09
60.	I think this speaker would be dull and boring to listen to (—)	34	46	30	52	52
64.	I feel suspicious of this speaker's intentions (—)	73	42	04	72	66

Note. Minus signs (—) indicate reflected scoring. Decimals have been omitted.

vinced; or they may indicate that the receiver has already been convinced. In contrast, the adjectives occurring in Cluster 1—trustworthy, honest, reputable, good, dependable—seem more commonplace and imply no especial respect for the communicator.

Cluster 5 bears some resemblance to

the first factor in Markham's study, which he labeled "reliable-logical". Two items occurring in Cluster 5 also occurred in Markham's list: logical-illogical, and believable-unbelievable. Berlo, Lemert and Mertz also used these items, and found them to have loadings of about .7 on their Factor 1, and .5 on Factor 2. In the present study, the loadings of the Cluster 5 definers on Clusters 1 and 2 were also in the region of .7 and .5. Figures 1 and 2 show that all the definers of this cluster were reasonably collinear, and Table 2 shows that the cluster score reliability was high (.906).

It is evident that the results of this study corroborate previous research, while drawing attention to the existence of two new clusters of variables which have distinct meanings (Co-orientation and Charisma). These can be measured with high reliability. The results are also valuable because they introduce these concepts from social-psychological and sociological theory into the empirical study of communicator dimensions. The relationships between these concepts, as perceived by respondents, are summarized in Figures 1 and 2. Comparisons of factor coefficients with those obtained in previous studies suggest that the relationships between clusters, and between individual adjective-rating-scales, are quite stable. Only one study, by Applbaum and Anatol, shows unstable factor structures, attributed to different speaking situations. This study is based upon ratings of a single hypothetical individual, an "ideal speaker," in various speaking situations. The large number of factors produced, far more than in any other study, is probably due to the low variance in ratings of an ideal speaker.

A final reason for emphasizing the advantages of an oblique solution became evident from the writer's research on credibility and attitude change, which is reported in his Doctoral dissertation. It was found that Charisma was the communicator variable most strongly related to attitude change, followed by Co-orientation, Expertise, and Trustworthiness, in that order. The effect of Charisma was the only one which reached statistical significance. These results indicate that there can be practical reasons for acquiring information on the five oblique dimensions of perceived credibility.

TABLE 2

CORRELATIONS BETWEEN RAW CLUSTER SCORES (ABOVE DIAGONAL) AND BETWEEN CLUSTER DOMAINS (BELOW DIAGONAL); RELIABILITY AND GENERALITY OF CLUSTERS

Cluster	Correlations					Alpha Reliability	Communality Exhaustion
	1	2	3	4	5		
Cluster 1	—	.54	.12	.72	.76	.965	.636
Cluster 2	.56	—	.41	.57	.74	.941	.491
Cluster 3	.13	.46	—	.07	.23	.851	.161
Cluster 4	.78	.62	.08	—	.81	.898	.590
Cluster 5	.82	.81	.26	.90	—	.906	.660

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Mr. McCroskey is the Department of West Virginia Uni sistant Professor o State University.

[1] E. M. Rogers a *cation of Informati* Press, 1971).

[2] J. C. McCroske Knapp, *An Introdu munication* (Englev Hall, 1971). Chap.

[3] See E. Berschei *personal Attraction* Wesley, 1969).

[4] H. C. Triandi alysis of 'the Behav Attitudes," *Journal Psychology,* 68 (1961