

# Three Cheers for Language: A Closer Examination of a Widely Cited Study of Nonverbal Communication

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*This essay focuses on applications of one of the most widely cited empirical studies in the field of communication—the 1967 research by Albert Mehrabian and Susan Ferris from which many have inferred that communication is “7 percent verbal, 38 percent vocal, and 55 percent facial.” These applications of this prominent study overlook important limitations which do not warrant a precise numerical formula regarding the relative importance of verbal and nonverbal messages in typical communication. We can learn much from the way in which this study has been cited in our academic literature—lessons that transcend this particular examination and which relate to the nature of research, pedagogy, and our understanding of communication.* **Keywords:** language, nonverbal communication, pedagogy, research design

Psychologists tell us that a high percentage of the information conveyed in a typical message is communicated nonverbally. Psychologist Albert Mehrabian has devised a formula to account for the emotional impact of a speaker's message. Words, he says, contribute 7 percent, vocal elements 38 percent, and facial expressions 55 percent (Ehninger, Gronbeck, McKerrow, & Monroe, 1986, p. 277.)

Any academic field has a certain dogma, an accepted catechism, a set of premises from which it operates. Within the discipline of communication, some of it takes the form of general axioms, such as “we cannot not communicate,” or “meanings are in people, not in words.” Within the realm of quantitative research, one article has been cited so persistently in our textbooks that it has approached the status of a disciplinary truism. Mehrabian and Ferris (1967) asserted that “the combined effect of simultaneous verbal, vocal, and facial attitude communications is a weighted sum of their independent effects—with the coefficients of .07, .38 and .55, respectively (p. 252). These “coefficients,” in turn, have been interpreted by some to mean that communication is 7% verbal, 38% vocal, and 55% facial.

This 7-38-55 formula appears in many of our basic texts, demonstrating the extent to which it has been woven into the discipline. This includes public speaking texts (e.g., Gamble & Gamble, 1994, p. 289; Ayres & Miller, 1990, p. 211; Grice & Skinner 1995, p. 13), interpersonal communication texts (e.g., Stewart & D'Angelo, 1988, p. 169; Tubbs & Moss, 1991, p. 137), small group communication texts (e.g., Brilhart & Galanes, 1989, p. 138), persuasion texts (e.g., Simons, 1986, p. 94), organizational communication texts (e.g., Adler, 1986, p. 64), intercultural communication texts (e.g., Dodd, 1995, p. 153; Klopff, 1995, p. 186), and “hybrid” texts (e.g., Berko, Wolvin, & Wolvin, 1995, p. 154).

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## Methodological Issues

A closer look at the Mehrabian and Ferris (1967) study reveals several limitations that call for prudence in interpreting their results. The first of these is that the entire study involved only 62 subjects. Of these, 25 were used in the preliminary selection of a neutral stimulus word for the study. Therefore, the key issue—relative importance of the verbal to the nonverbal—was determined by the use of only the 37 remaining subjects. All subjects were “female University of California undergraduates who participated in the study in partial fulfillment of introductory psychology course requirements” (p. 249). In other words, not a single male subject was involved in this research, and the age range and academic background of the subjects seem remarkably uniform. Thus, the findings may simply be an artifact of the small sample size.

As Burgoon, Buller, and Woodall (1989) have noted about this line of research, “In the vocal-facial study, the verbal component was held constant—the word ‘maybe’ was used in all cue combinations—so it never had a chance to make a difference to receivers’ interpretations. Hence the verbal component was never given a fair test” (p. 155). Compounding the problem is the fact that Mehrabian and Ferris (1967) intentionally sought to find a basically meaningless word as the stimulus—as they indicate, “the word ‘maybe’ was selected as an appropriate neutral carrier of vocal communications” (p. 250). Thus, their research deliberately controlled the potential effect of verbal content. They simply showed that if people are given virtually no verbal cues, they will find virtually no verbal meaning.

The widely cited 7-38-55 formula was actually derived from two studies—the Mehrabian and Ferris (1967) research and a separate study by Mehrabian and Wiener (1967). As Burgoon et al. (1989) have aptly observed, “Unfortunately, it (the 7-38-55 estimate) is erroneous. It is based on extrapolation of two studies, one comparing vocal tone to facial cues . . . and one comparing vocal tone to single words . . . rather than a study comparing all three” (p. 155). Hegstrom (1979) concurs that “The formula was not derived directly from a regression analysis. No one study involving the three single channels (verbal, vocal, and facial) was conducted. Instead, the formula was pieced together from two different studies” (p. 135).

Consider what an analysis of the Mehrabian and Ferris (1967) study reveals. It demonstrates that 17 female psychology students, upon hearing the word “maybe” spoken over audio tape in three different tones of voice, were more inclined to react to the speaker’s voice than the one single word. It also demonstrates that another 20 female psychology students, while viewing photographs of three female models attempting to use facial expressions to communicate like, neutrality, and dislike, were more inclined to determine the speaker’s attitude from the photograph than the word “maybe.” Clearly, such a methodology lacks any sort of external validity. Real people have relationships to one another. Real people communicate in a particular context. And real people speak in phrases and full-blown sentences, making extensive use of the multi-faceted vehicle of language.

In short, examinations of this well-known and widely cited study suggest that it should never have been interpreted to establish the *relative* importance of verbal and nonverbal communication. Such a comparison draws conclusions about relationships that the study was not designed to test and that the data analysis cannot support. My concern is that our interpretations and applications of this study have gained such prominence in our pedagogical literature.

## Lessons to Consider

We all know that primary sources are to be preferred over secondary sources, yet part of the price we pay for the “information explosion” is a lack of time to check out everything for ourselves. If people in our field were to look at the original Mehrabian and Ferris study (1967), they would most likely see its limitations. It seems probable that relatively few who cite this study in their texts have carefully reviewed the original study.

Clearly, one of the most appealing aspects of the Mehrabian and Ferris (1967) study is its apparently tidy numerical precision. The phenomenon of communication is complex and unwieldy, but it seems less so when we can rely on these three magical numbers. As Merriam (1990) has observed, “The appeal of numbers as a source of rational order and harmony derives in part from their perceived precision. In contrast to the inevitable ambiguities and abstractions of language, numbers seem to possess exactness and objectivity” (p. 338). Given the almost seductive simplicity of quantitative data, we need to examine it carefully. Considering the ubiquitous references to the Mehrabian and Ferris (1967) study, the sheer repetition of the 7-38-55 numbers has given them credibility. To that extent, students in the field of communication have been influenced to believe that the nonverbal message is virtually “everything,” while the verbal message is basically “nothing.” After all, if the meaning in communication is 93 percent nonverbal, why be concerned about language? There is a certain mystique about nonverbal communication in general and the continued citation of this research sustains it.

The widespread interpretation of the laboratory research conducted by Mehrabian and Ferris (1967) and by Mehrabian and Wiener (1967) has relegated language to a minor, basically inconsequential status when compared with nonverbal elements. Yet, substantial communication research and our own life experiences suggest otherwise. We know, for example, that even one ill-chosen word to a colleague, friend, or “significant other” can make or break a communicative effort. We know that advertising and political campaigns rise or fall on the basis of their semantic elements. And we know that many of the exemplars for persuasive speaking that are placed in public speaking texts are there because of their linguistic power. In short, words do matter. Bradley (1991), one of the few textbook writers to explicitly take issue with the Mehrabian and Ferris (1967) study, makes the same point about this research when he observes, “If we could communicate 93 percent of information and attitudes with vocal and facial cues, it would be wasteful to spend time learning a language” (p. 224).

A final irony is that Mehrabian himself believes his research should not be interpreted to devalue the role of language in communication. Mehrabian responded to the common citations in our texts which state, in general, that communication is seven percent verbal.

My findings are often misquoted. Please remember that all my findings on inconsistent or redundant communications dealt with communications of *feelings and attitudes*. This is the realm within which they are applicable. Clearly, it is absurd to imply or suggest that the verbal portion of *all communication* constitutes only 7% of the message. Suppose I want to tell you that the eraser you are looking for is in the second right-hand drawer of my desk in my third floor office. How could anyone contend that the verbal part of this message is only 7% of the message? Instead, and more accurately, the verbal part is nearly 100% of the message. Again, anytime we communicate abstract relationships (e.g.,  $x = y - \text{the square of } z$ ), clearly 100% of the entire communication is verbal. (Mehrabian, 1995)

To be fair, many of the textbook writers cited herein attempt to be faithful to the context in which Mehrabian places his research. For example, Stewart and D'Angelo (1988) write: "Albert Mehrabian argues that when we're uncertain about what someone's *feeling*, or about how much we *like* him or her, we rely 55 percent on facial nonverbal cues, 38 percent on vocal nonverbal cues, and only 7 percent on the words that are spoken" (p. 169). Others, such as Brillhart and Galanes (1989), try to play down the specific percentages: "The specific percentages are not important; rather, what is important is that you recognize how essential nonverbal cues are to us as we interpret what we think people mean" (p. 138). Nonetheless, other textbook authors simply use the numbers without qualification; Dodd (1995), for instance, writes: Mehrabian indicates that 93 percent of meaning in a conversation is conveyed nonverbally—38 percent through the use of voice and 55 percent through the face" (p. 153).

### Conclusion

In the final analysis, it makes little difference whether the Mehrabian and Ferris (1967) study is placed in the context of "feelings and attitudes." Even if it is considered in such a limited fashion, the same methodological limitations exist—i.e., the sample size and composition, the experimental design, and the statistical analysis involved. So, even when it comes to the expression of feelings and attitudes, we would be well advised to regard this research with some healthy skepticism. It is reasonable to think that the nonverbal and paralinguistic cues have some bearing on how the message is perceived. But it is also quite reasonable to conclude that the words themselves are likely to constitute more than 7 percent of the meaning—if indeed something like that *could* be quantified. Moreover, the complexity of human relationships suggests that any attempt to generalize in such a precise way about the relative importance of language is unwarranted.

We are approaching the 30th anniversary of the publication of this relatively small study that has been cited as frequently as perhaps any in our pedagogical literature and has achieved a status and influence far beyond its intended scope. We need to put this study into its proper perspective and to use this case to learn some important lessons regarding social science research, communication pedagogy, and the forces which have created widespread misunderstanding about communication.

### References

- Adler, R. (1986). *Communicating at work: Principles and practices for business and the professions* (2nd ed.). New York: Random House.
- Ayres, J., & Miller, J. (1990). *Effective public speaking* (3rd ed.). Dubuque, IA: William C. Brown.
- Berko, R., Wolvin, A., & Wolvin, D. (1995). *Communicating: A social and career focus* (6th ed.). Boston: Houghton Mifflin.
- Bradley, B. (1991). *Fundamentals of speech communication: The credibility of ideas* (6th ed.). Dubuque, IA: William C. Brown.
- Brilhart, J., & Galanes, G. (1989). *Effective small group discussion* (6th ed.). Dubuque, IA: William C. Brown.
- Burgoon, J. (1985). Nonverbal signals. In M. Knapp & G. Miller (Eds.), *Handbook of interpersonal communication*. Beverly Hills: Sage Publications.
- Burgoon, J., Buller, D., & Woodall, W. (1989). Channel reliance. In *Nonverbal communication: The unspoken dialogue*. New York: Harper and Row.
- Dodd, C. (1995). *Dynamics of intercultural communication* (4th ed.). Madison, WI: Brown & Benchmark.
- Ehninger, D., Gronbeck, B., McKerrow, R., & Monroe, A. (1986). *Principles and types of speech communication* (10th ed.). Glenview, IL: Scott Foresman, and Co.
- Gamble, T., & Gamble, M. (1994). *Public speaking in the age of diversity*. Boston: Allyn and Bacon.
- Grice, G., & Skinner, J. (1995). *Mastering public speaking* (2nd ed.). Boston: Allyn and Bacon.

- Hegstrom, T. (1979). Message impact: What percentage is nonverbal?, *The Western Journal of Speech Communication*, 43, 134-142.
- Klopf, D. (1995). *Intercultural encounters: The fundamentals of intercultural communication* (3rd ed.). Englewood, CO: Morton Publishing.
- Mehrabian, A., & Ferris, S. (1967). Inference of attitudes from nonverbal communication in two channels. *Journal of Consulting Psychology*, 31, 248-252.
- Mehrabian, A., & Wiener, M. (1967). Decoding of inconsistent communications. *Journal of Personality and Social Psychology*, 6, 109-114.
- Merriam, A. (1990). Words and numbers: Mathematical dimensions of rhetoric. *The Southern Communication Journal*, 55, 337-354.
- Simons, H. (1986). *Persuasion: Understanding, Practice, and analysis* (2nd ed.). New York: Random House.
- Stewart, J., & D'Angelo, G. (1988). *Together: Communicating interpersonally* (3rd ed.). New York: Newberry Award Records, Inc.
- Tubbs, S., & Moss, S. (1991). *Human Communication* (6th ed.). New York: McGraw-Hill.

