step in examining the nature of propositions fitted to this pedagogical purpose is to explore the genera from which propositions arise and from which propositions are formed.

One characteristic of propositional substance is its inherent assumption of a universally accepted premise. Jefferson, without trepidation, prefaced the Declaration of Independence with the words "these truths are self evident," and went on to enumerate the premises of universal acceptance. Such fundamental values as the sanctity of life, the right of property ownership, the freedom of choice, the pursuit of happiness are all incontrovertible within the social genera in which Jefferson lived. They were (and are) indeed self-evident truths. From such value clusters, propositions are formed which codify and mandate a stamp of authority. The process is analogous to the "government by concent of the governed" thesis. If the people believe it, the people are expected to behave accordingly. The establishment of constitutional authority was a tacit agreement that certain values must be preserved and that all subsequent legislation must be consistent with those assumed values. To illustrate the nature of value constancy, in a context of contemporary interest, let us examine the proposition that "abortion should be available on demand." The issue concerns itself, on the one hand with the value assumption that all life is sacred and on the other, that all persons are bequeathed the right to choose. The proposition is thus debatable on two levels. It poses a contradiction or a clash of value attitudes which imposes upon the listener an obligation to choose and set priorities based on his own frame of reference. Hence, the proposition is audience-oriented. On the second level, the proposition is debatable because it allows flexible interpretation of how life may be defined or how choices may be limited. By contrast, note the proposition that "the U.S. should accede to the Soviet proposal to freeze its placement of nuclear armed missiles." The value assumption that life can best be preserved by a formidable display of power to deter agressors is offset by the irony of a prospect of a nuclear holocaust if the deterrant theory fails. The proposition thus becomes debatable on one level alone: who has (or should have) the deterrant capacity? There are no value systems on a collision course. There is only the prospect of quantifying power components to counter the statistical quantifying of the opposing force. Aside from the problem of quibbling over comparative strengths by comparing defensive to offensive systems or submarines to land based sites, the proposition relies solely on the speculative hypothesis that armed muscle will deter aggression. It is difficult to argue probability when the premise is purely speculative.

The second characteristic of a sound proposition is its predisposition to change. Simple policy proposals are easily dealt with, e.g. "Carl should buy a new car." In such a proposition, change is axiomatic. In more complex propositions, however, such as "the Equal Rights Amendment should be adopted," a host of uncertainties prevail about the nature of the change. Superficially, or course, the adoption of a constitutional amendment is in itself a change. The fundamental question is whether the amemdment proposes to change anything. The disputant is thus forced into the position of translating a general social condition into a descriptive system of deficiencies. Furthermore, he must again delve into the speculative *consequences* of an amendment to the constitution. The former problem makes him vulnerable to the charges of non-inherency. The latter problem leaves him with no substance to argue probability. If a proposition is to qualify as a reform measure, it should not demand of its advocate a painstaking process of defining fragile distinctions between what is and what should be. A challenging resolution should implicitly contain an element of radicalism.

Finally, a proposition should possess an element of universal concern. In our quest to teach objectivity and detachment, so as to

refine the adversary skills, the important rhetorical component of audience involvement is often obscured. The topic should be arresting enough to the disputant by nature of its affiliation to human affairs which concern him. Controversies, like inventions are born of need. When the public responds to the federal deficit by proposing a constitutional amendment to curb federal spending, it is demonstrating a concern. The advocate is a party to that concern and should be able to see the immediate application between a controlled fiscal policy and his own activities in an economic environment. A collegian who proposes that student loan programs should be drastically curtailed is likely to immerse himself in the controversy to a high intensity level. One who argues for a national lottery system on the other hand is hard pressed to establish a genuine identification with the topic.

The thrust of this inquiry should not be misread. All the illustrations mentioned here are debatable and worthy of public examination. The pedagogical aims of a forensics program, however, should simulate as far as possible, a true rhetorical setting where confrontation between ideas is intensified by the active involvement in those ideas by the advocate and the listener. There is merit in the democratic system of pooling the choices of professionals in the field, sorting out the top runners, polishing the wording and finally distributing ballots. Such a system incorporates involvement in the selection process and allows an occasional element of originality to surface. Unfortunately, the procedure also encourages the selection of the hackneyed and obsolete topic. More importantly, the current process thrives on the assumed premise that a topic should be debatable, which is to say that it should provide tricky options, if interest is to be sustained over the season. A sounder approach would be one which conforms to the natural demands of educational improvement, i.e., one which defines a rhetorical setting in all of its dimensions and dips into the caldron of social controversies raging at the time.

The Buck Stops Here

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Donald Klopf and Carroll Lahman wrote in 1969 that "No question in forensics is fraught with more controversy than that of judges and judging."[1] Regardless of the nature of the activity (whether CEDA or NDT) a central question that is receiving increasing attention in forensics is "What is the proper role for the debate critic?" The purpose of this article is to make some observations on the nature of the critic's role in evaluating debate rounds, and in educating forensic students.

Underlying this article is the assumption that there is a distinction between judge and educator. The individual who views himself as a judge adopts an objective, analytical and dispassionate orientation to the evaluation of a debate round. These individuals are frequently called "information processors." In this mode the judge evaluates the quality and content of the argumentation in a debate. These individuals take great pride in their objectivity and non-involvement in the debate process. For them the process by which argumentation

occurs is not as relevent an evaluating criteria as the content of argumentation. The emphasis here is on the intellectual freedom of the contestants. In contrast to this view is the critic as a forensic educator. Although this individual may be equally concerned with the quality and content of argumentation in a debate; primary emphasis is placed on the process by which argumentation occurs. These individuals stress process over content; how to argue effectively and appropriately versus what to argue. This orientation embraces the premise that debate is people communicating arguments. It is not my position that critics should exclusively stress delivery and persuasion, or that the evaluation of debates should be content free, but rather that the critic has a professional obligation as an educator that requires him to assume a more active role in regulating the process by which argumentation occurs. As educators we have a responsibility to monitor the behaviors and strategies that contestants employ in competition.

Debate at all levels and in all forms is rapidly approaching a crisis stage. In part this is a function of economic circumstances; in part it is also a function of an abrogation of responsibility on the part of critics to police the activity. Concerns over rate of speaking, esoteric affirmative casing, generic argumentation, demeanor, and quantities of evidence are frequently expressed by both CEDA and NDT proponents. These concerns are not uniquely "ours" or "theirs". Although each of them may only by symptoms of much deeper problems, (the nature of debate topics, the information explosion in the 20th century) they can be effectively dealt with in the short term if critics actively regulate the process.

Timothy Ashmore argues persuasively that ". . . the ballot is the reward or punishment which is influential in what behavior or style is learned."[2] Debaters will continue to exhibit those behaviors (good or bad) that are rewarded with the "win." If the critic rewards the debater who reads vast quantities of evidence in con-structives, who speaks in fragmented sentences, who speaks at excessive rates, and/or who speaks incoherently, then the critic is implicitly saying these behaviors are acceptable and constitute good (winning) debate. Debaters do what we allow them to do.

Each of these behaviors is an abuse of the process of argumentation. These abuses should be penalized not rewarded. It is not an encroachment on the student's intellectual freedom to sanction poor argumentation skill. This does not dictate the content of debate, but rather sets the parameters within which debate occurs. There are rules that regulate the process by which all competitive activities occur. In a court of law the judge strictly regulates the process by which legal arguments are made. In Congress the speakers of the House and Senate strictly regulate the process by which policy questions are debated. In neither system does the critic's role dictate the content of argumentation. Out of a fear that critics will become too involved in the process, creating a situation where the critic debates the debaters, we have overcompensated with an almost total state of detachment.

It is time for critics to determine what constitutes acceptable argumentative behaviors, to make these known to contestants and colleagues, and to actively monitor the process by which debate occurs. It is the obligation of the forensic educator to teach students sound argumentation skills, and to abandon the "hands off" approach that indirectly encourages such abuses. The responsibility for developing such skills should not rest with the contestant. It should rest with the forensic educator where the buck stops.

Footnotes

1 Klopf, Donald and Lahmann, Carroll. *Coaching and Directing Forensics.* Skokie, Ill., National Textbook Company, 1967, p. 237.

2 Ashmore, Timothy. "The Role of Audience Analysis in Contemporary Debate," *The Forensic*, Fall, 1981, p. 24.

Cross-Examination: An Interpersonal Perspective

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In 1926, when Calvin Coolidge was President, Stanley Gray introduced the Oregon Plan of Cross-Examination Debate. In 1982, over half a century later, there are those who would argue that Coolidge is still in the White House and that our understanding of the cross-examination period in debate has advanced equally as far. Cross-examination periods were officially added to the debate format at the high school level in the 1950s and at the college level almost a decade ago. Numerous debate textbooks and articles have discussed the various strategies for cross-examination. [1] However, the discussion concerning why these approaches work has been virtually non-existent.

This article will attempt to discover some of these "why's" through the application of four theories of interpersonal communication to a particular cross-examination debate. It is hoped that a better understanding of why what we do works will help us to do it better in the future.

Four theories of interpersonal communication are used in analyzing the interaction. These are: balance theory, rules theory, game theory and relational communication theory.

*   *   *

The interaction took place at the Colorado College Forensics Tournament, at Colorado Springs, in October 1981. The segment examined was recorded during the four cross-examination periods of Round 2 CEDA (Cross-Examination Debate Association). The topic of the debate was: *Resolved: That unauthorized immigration to the United States is significantly detrimental to the United States.*

A husband and wife team affirmed the resolution, while a non-married male and female team negated it. Both members of the negative team were twenty years old. The affirmative couple were in their middle to late twenties. The males were dressed in three-piece suits. The females wore conservative skirt-vest-blouse combinations.

The debate took place in a normal-sized classroom. The room was painted in the light beige color representative of the popular color schemes in modern classrooms. The large rectangular tables in the room were set up in a hollow square similar to a seminar arrangement. The side walls contained large chalkboards. Large windows occupied the far wall. The debaters were seated and spoke from the tables nearest the far wall. The affirmative team was on the left and the negative team was on the right. The judge sat at the table closest to the door, or the near wall, on the right side of the room. The room had high ceilings that produced poor acoustics during the debate.

The interaction was taped on a Sony portable cassette recorder. The recorder was on the table next to the judge in plain view of the contestants. The debaters were informed that they were being taped for a paper on interpersonal communication. The transcript was taken verbatim from the tape.

The cross-examination period of the debate consists of four separate sections. Each speaker is cross-examined by a member of the opposing team following his or her initial speech. This period is controlled by the questioner, who has a maximum time limit of three minutes. The husband was the first affirmative speaker (1A). His wife was the second affirmative speaker (2A). The other male took the first negative position (1N). His partner was second negative (2N). Each speaker was

labeled in the transcript according to speaking position.

* * *

The factor of balance in the four interactions is based on the following areas: seeking agreement and/or dominance [2] and the amount of cognitive dissonance.

Fritz Heider, a psychologist, is generally credited with originating the balance theory in the 1940s. [3] He was one of the first psychologists to study interpersonal relationships in the context of communicative acts. Heider hypothesized:

Attitudes toward persons and casual unit formations influence each other. An attitude toward an event can alter the attitude toward the person who caused the event, and, if the attitudes toward a person and an event are similar, the event is easily ascribed to the person. A balanced configuration exists if the attitudes toward the parts of a casual unit are similar. [4]

He defined attitude as "the positive or negative relationship of a person . . . to another person . . ., or to an impersonal entity . . ." [5] By impersonal entity he meant "a situation, an event, an idea, or a thing, etc." [6] His examples of casual units are similarity, proximity, casuality, membership, possession and belonging. Several years later Theodore Newcomb applied Heider's theory to dyads. [7]

In the specific cross-examination observed, the questioners spent much of their time trying to find common ground with the opposition, that is, attempting to get the other side to agree with them.

The second negative sought agreement twice: first, on the quantification of the Los Angeles example; second, on the amount of money spent on border patrols.

The first affirmative asked for common ground on eleven occasions: the reception of minimum wages, the location of immigrants, the difference between urban and rural immigrants, the description of urban immigrants, jobs held by urban immigrants, the content of first negative evidence, the link between inflation and economic growth, the importance of economic growth and that illegal immigrants take jobs at minimum wage.

The first negative speaker asked for affirmation six times: the accuracy of second affirmative evidence, the link between decreasing unemployment and the rate of unemployment, the amount of functional unemployment, the job occupations of urban immigrants and the content of second affirmative evidence.

Second affirmative asked second negative for agreement three different times: on the issues of inflation, the negative philosophy and the goal of the United States. In asking for agreement, the speakers seek to get what they want through balance (agreement) rather than argumentation (unbalanced). The large amounts of attempts at agreement in the cross-examinations hold consistent with balance theory.

The second factor in balance theory is dominance. The seeking of dominance in the cross-examination periods is very important. The person who asks the questions controls the cross-examination. The first negative attemped to shift this role during the first affirmative's cross-examination of him. He got the first affirmative to explain (defensive) instead of ask questions (offensive). He later asked questions himself instead of answering them. Dominance was also demonstrated nonverbally. A debater wishing to appear dominant would take a step closer to the judge relative to his opponent during cross-examination so as to appear larger. A debater wishing his opponent to appear overbearing would do the converse.

Another control factor is speaking time. [8] The speaker who is talking is the only one whose views are being heard. Therefore, the questioner seeks to keep the answers short so he or she can ask as many questions as possible. The speaker who is being cross-examined seeks the opposite. The results are interruptions, usually when the questioner seeks to cut the speaker off so he or she can ask another question. This

happened once in the cross-examination of 1A, four times during the questioning of 1N, once with 2A and seven times when 2N was being cross-examined. The utterance "ok" was used to signal termination (seven times in cross-examination of 2N alone).

Cognitive dissonance often prevents balance from being reached. Heider's predominant theme is that "people modify their perceptions to make them more internally consistent." [9] A controversial consistency theory that is an off-shoot of this concept is Festinger's theory of "cognitive dissonance." The definition of cognitive dissonance according to Festinger, is "the situation in which, considering two cognitive elements alone, the opposite of one follows the other." [10] In Festinger's view, a person will have a tendency away from dissonance. Often the questioner and the speaker are both off on their own trains of thought. A question or statement of one is unintelligible to the other because it does not fit into his or her point of reference.

In this case study, then, the cross-examinations were consistent with balance theory in that agreement and dominance were attempted in order to reach a balanced state, while cognitive dissonance often prevented the balance from occuring.

The two interpersonal theories that are the most relevant to analyzing these interactions are theories that involve games: rules theory and game theory. The participants are in themselves operating within the context of a game, debate, that has implicit and explicit rules. Cushman, et al., explain in a recent book by Frank Dance:

A rule exists when -- and only when -- two [or more] people do the same thing under certain conditions because both expect each other to behave in a certain way, and each is aware of the other's expectation. [11]

The explicit rules include topic area, speaker and cross-examination order, and time lengths. Within these explicit rules are implicit ones such as those discussed under dominance above.

There are four aspects of games that provide major defining characteristics when used by conflict researchers: 1) several limited alternative courses of action are open to each participant in the interaction; 2) principles can roughly estimate general consequences of each alternative but uncertainty exists about the general outcome occurring from interaction; 3) uncertainty due to outcome is partially dependent on choices of others; and 4) rules limit behavior. [12] Anatol Rapoport states that these conflicts of interest occur when "the order of magnitude of the payoffs that accrue to the several players in the several outcomes do not coincide." [13]

The essential feature of any game is the payoff. The risks of the game are balanced against the possible reward. [14] The ultimate payoff in debate is the winning of the round. This makes debate what is known as a "zero-sum game." Owen explains: "In general, a zero-sum game represents a closed system: everything that someone wins must be lost by someone else." [15]

In sub-games in the debate the payoff is the winning of an individual position. The rule regarding the three minute time maximum for each cross - examination creates a certain risk. The questioner must choose which arguments he or she would like to focus on and then actually get somewhere with them in the cross-examination period. The first affirmative decided that the payoff from differentiating urban and rural immigrants was so great that he spent virtually his entire cross-examination of the first negative on the subject.

Besides game theory itself, there were other interpersonal games being played. The second negative liked to play NIGYSOB or "Now I've Got You, You SOB." NIGYSOB is an example of transactional analysis that Berne calls:

An ongoing series of complimentary ulterior transactions progressing to a well-defined, predictable outcome. Descriptively it is a recurring set of transactions, often repetitious, superficially plausible, with a concealed motivation; or more colloquially, a

series of moves with a snare or 'gimmick'. [16]

However, the trap is never quite sprung. This is also part of the game. The final NIGYSOB trap is saved for the negative speeches, where the affirmative cannot immediately refute it as in cross-examination. An important payoff for the respondent is the avoidance of NIGYSOB. Speakers usually refused to give obvious answers to any question that they thought might lead them into a trap, even at the risk of appearing unreasonable. Consider the following example:

1N: On the first contention, the A subpoint, specifically the extension in 2AC, your card is from 1980. It says the unemployment rate was 7.8 percent. But it said by the end of the year it reached 4 percent.

2A: Possibly.

1N: Oh. So the card is wrong?

2A: Not yet.

So, we can see that the cross-examinations contained the explicit and implicit regulations of rules theory, the risk/payoff balancing of game theory and other interpersonal games.

Another useful way to analyze these interactions is through the theory of relational communication. Relational communication has been defined by Ericson and Rogers as "the control aspects of message exchanges that define an interacor's relationships with others." [17] Complimentarity and symmetry have been suggested by Parks as the central constructs of the theory. Symmetry is defined as situations "in which assertions of dominance were matched with similar responses," and complimentarity is defined as "assertions of dominance (that) elicited response of acceptance or submission." [18]

The Ericson-Rogers coding system was applied to the transcript of the four cross-examination periods. [19] Not suprisingly most exchanges involved competitive symmetry, that is, mutual attempts to control the definition of the relationship.

The data support eight of Park's common situations associated with competitive symmetry and complimentarity. First, the competitive spiral increases the distance between the participants. [20] For example, the end of the cross-examination of 2A by 1N leaves them just as far apart as they were in the beginning. The cross-examination starts with a "That's wrong, no that's right" exchange and ends on the same level with a disagreement about evidence.

Second, participants fear to concede a topic area because it may be viewed as an important loss. [21] Debaters insisted on rehashing positions long after the original points were made. For example, the second affirmative and second negative spent twenty-two separate utterances on the issue of whether or not economic growth is a goal.

Third, the participants disputed their roles in the interaction. [22] An example of this was the first negative's attempts to take the role of the questioner while he was being cross-examined. This was previously discussed with regard to dominance.

Fourth, open and direct disagreement is more frequent. [23] In the extremely competitive 2A-1N cross-examination there were five examples of open conflict.

Fifth, competitive symmetry increases attempts at intimidation. [24] 1N attempts to intimidate 1A three different times during their cross-examination period.

Sixth, competitive exchanges cause an increase in attempts at negation. [25] High symmetry interactions had a higher frequency of rejection messages. There were five examples in the cross-examination of 2A alone.

Seventh, the more competitive the symmetry, the lesser the satisfaction was with the exchange. [26] The tape revealed that the most strained vocal pitches and tones were heard in the most competitive cross-examination period (2A-1N).

Finally, complimentary interaction leads to greater role differentiation. [27] This occurred in the periods when the questioner asked reasonable questions and the respondent attempted to specifically answer them. During those periods in the transcript

coded as such, less interruption, less hostility and fewer attempts at dominance occurred.

As a side issue, it is interesting to note that no observable differences were noted between the married couple and the other debaters. Although this is a somewhat rare occurence in debate, the couple claimed to have no problems with it. The ways in which outside role patterns effect debating would be an interesting issue for further study.

Two limitations to the applicability of relational communication to the cross-examination environment should be noted. First, relational communication does not account for nonverbal communication. Parks notes:

For example, none of the existing coding procedures include an extensive operationalization of nonverbal components. In view of the common belief that relational messages are frequently nonverbal [Jackson, 1965; Watzlawick, et al., 1967; Lederer & Jackson, 1968; Beels & Ferber, 1969], the development of nonverbal measures would seem to have a high priority. [28]

Another limitation is the predominance of rules in the interactions. Often the participants' responses were the result of strategies and rules as opposed to being reflections of relationships. This will be discussed in more detail below.

A trend in the eight observations that relational communication does support is the conclusion that debate coaches and theorists have been stating for years: *the major purpose of cross-examination is clarification not argumentation.*

* * *

The discussion with the debaters about their interaction reveals further insights confirming many of the interpretations made by the application of interpersonal theories. The affirmative was influenced by their preconceived notions about the judge. They tried to adapt to the NDT style they were told the judge was accustomed to

seeing. They interpreted this style as emphasizing logic, analysis, evidence and quantification. This was also the indirect cause of some of their somewhat curt attitudes. They had been told in the past by other judges about this and were trying to hold it in check. Indeed, second negative told the judge that she would have tried for more NIGYSOB traps if not for this. However, in their press to win the issues they were not able to arrive at a proper balance.

The debaters accounted for many of their actions as simply strategies and results of attempts to win the debate (rules and game theory). Dominance was attempted in order to control the time period (balance and relational communication theory). Negation was used when it was perceived to be necessary to win arguments. NIGYSOB was used because judges were perceived to look favorably upon it. The existence of competition is a result of the situation being a game.

* * *

The interpersonal communication theories of balance, rules, games and relational communication offer viable explanations of why various types of interactions in cross-examination periods function the way they do. Some theories appear more relevant to the situation than others, and, with the exception of relational communication, applying these theories is more a matter of observation than empirical testing. The application of other interpersonal theories to the debate context might reveal future casualties. The development of testing devices of a more empirical nature than observation would strengthen the reliability of this type of data. Also, studies that are a survey approach as opposed to a case study approach would go further in confirming the applicability of these results. It is hoped that this article will invite further study into this area, for in order to truly know "how" we must first understand "why."

Footnotes

1 For example: James E. Sayer, "Functional Cross-Examination," and Richard C. Price, "More Effective Cross-Exam:Format, Goals, Strategies," in *Advanced Debate*, ed. David Thomas (Skokie, Ill.: National Textbook Company, 1979), pp. 305-319; Maridell Fryar and David A. Thomas, *Basic Debate* (Skokie, Ill.: National Textbook Company, 1981), pp. 132-145; Roy V. Wood, *Strategic Debate* (Skokie, Ill.: National Textbook Company, 1977), pp. 126-132; Richard D. Rieke and Malcolm O. Sillars, *Argumentation and the Decision Making Process* (New York: John Wiley & Sons, 1975), pp. 245-247; Douglas Ehninger and Wayne Brockriede, *Decision by Debate* (New York: Harper & Row, 1978), pp. 207-208; Wayne N. Thompson, *Modern Argumentation and Debate* (New York: Harper & Row, 1971), pp. 296-300; George W. Ziegelmueller and Charles A. Dause, *Argumentation: Inquiry and Advocacy* (Englewood Cliffs, N.J.: Prentice-Hall, 1975), pp. 213-226; Bill Henderson, "A System of Teaching Cross Examination Techniques," *Communication Education* 27 (March 1978): 112-118, 133.

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13 Anatol Rapoport, *Game Theory as a Theory of Conflict Resolution* (Boston: D. Reidel Publishing Company, 1974), p. 1.

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15 Guillermo Owen, *Game Theory* (Philidelphia: W.B. Sanders Company, 1968), p. 12.

16 Eric Berne, *Games People Play* (New York: Grove Press, 1964), p. 48.

17 P. Ericson and L.E. Rogers, "New Procedures for Analyzing Relational Communication," *Family Process* (1973):245.

18 Malcolm R. Parks, "Relational Communication: Theory and Research," *Human Communication* 3 (1977): 372.

19 Ericson and Rogers, 245-267.

20 Parks, 375.

21 William J. Lederer and Don D. Jackson, *The Mirages of Marriage* (New York: W.W. Norton, 1968).

22 L.E. Rogers and R.V. Farace, "Analysis of Relational Communications in Dyads: New Measurement Procedures," *Human Communication Research* 1 (1975): 222-239.

23 P. Watzlawick, et al., *Pragmatics of Human Communication* (New York: W.W. Norton, 1967).

24 Lederer and Jackson, *op cit*.

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27 G. Bateson, *Naven* (Stanford, Calif.: Stanford University Press, 1958).

28 Parks, 375.

Variables That Influence Speech Intelligibility Most

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Among the most important and most pragmatic aspects of oral communication is intelligibility. In fact, intelligibility has been clinically ranked to be the single most important aspect of speech and language (Weiss, et al., 1980). There certainly are other dimensions that are important to oral communication, such as the paralinguistic, extralinguistic, or nonverbal dimensions, but many of them fall beneath the rubic of intelligibility and consequently influence it. Effective speech, regardless of the purpose or setting, presupposes speaker intelligibility. Unintelligible speech is useless, ineffective, and a complete waste of time. Therefore, determination of the variables that influence intelligibility most would appear to be useful and expedite the challenging process of becoming an effective speaker, whether it is debator, orator, interpretive reader, or instructor.

Since intelligibility has such relevance to effective oral communication, the author thought further delineation of its variables would contribute significantly to the communicative behaviors of debaters and public speakers in general. Further interest for studying intelligibility was provided by reviewing some of the literature dealing with sentence intelligibility testing (Duffy and Giolas, 1974), the subjective nature of argument (Schroeder, 1981), and attempts at developing intelligibility measurements (Agrawal and Lin, 1974; Kalikow, Stevens, and Elliot, 1977; Markides, 1978; Yorkston and Beukelman, 1981). Additional impetus for studying intelligibility variables was provided by reviewing studies that considered the effect of specific communicative parameters on intelligibility (Lariviere, 1975; McGarr and Osberger, 1978; Oldham, 1976; Parkhurst and Levitt, 1978; and Weiner and Ostrowski, 1979). Finally, intelligibility appears to have been overlooked by debaters, as witnessed by judging debaters over the years. My experience has been one of attempting to decode the speaker's rapid rate of speech while simultaneously trying to sort out the verbiage in terms of major arguments. Perhaps my ultimate decision concerning the winners was based more on the team's communicative ability rather than on which team made the better arguments, simply because I could not understand all that was said, or remember the arguments presented.

Clinical evidence and research findings suggest at least twenty-two factors that can influence intelligibility (Weiss, 1982). Obviously, not each factor is equally important to intelligibility. However, what is not so obvious is which factors do typically influence intelligibility the most. Knowing these factors and remembering them would probably help the competitive speaker improve the delivery or style, which according to Ashmore (1981) is an area of considerable concern.

Experimental Design. Fifty subjects ranging in age from three to sixty-four years were randomly selected for the study. Their speech intelligibility ranged from completely normal to severely disordered, with commensurate scores between 12% and 100%. All judgments of intelligibility were based on samples of contextual speech and were made from audio tapes, thereby eliminating some of the nonverbal features and avoiding the haloing of scores. The listeners were instructed to determine which factors influenced intelligibility, and then to rate which factors influenced intelligibility the most. The listeners, who also were randomly selected from the general population, were instructed to complete a grid that

included the twenty-two variables and a fivepoint significance scale of severity; a rating of one was considered insignificant and a rating of five was considered very significant to intelligibility. Explanations and examples of the twenty-two variables were given to the listeners.

For purposes of categorical analysis, the twenty-two variables were placed into four major categories: (1) articulation-pronunciation, (2) voice, (3) fluency, and (4) language. Articulation-pronunciation included the dimensions of sound omissions, substitutions, and distortions, extra sounds, mispronounced or nonstandard pronunciations, and syllabic stress. The major category of voice contained the dimensions of loudness, pitch, resonance, quality, and inflection. Fluency included rate, juncture, pauses, and rhythm or prosody. Language, the fourth major category included the dimensions of syntax, grammer, semantics, pragmatics, redundancy, morphophonemics, and mean length of utterance. The numerical ratings from these four categories were then tallied and analyzed.

Results and Discussion. An overall analysis of the twenty-two factors that influence intelligibility indicates that most listeners (24) thought that articulation-pronunciation affected intelligibility more than any other variable. The second most commonly indicated parameter of intelligibility was inappropriate pauses or hesitations (19). The listeners were unable to differentiate degrees of importance among the remaining variables. Eleven listeners did indicate that intonation-inflection significantly altered inteliigibility, and ten listeners thought that the rhythm of speech considerably altered intelligibility.

Rank ordering of the rated variables according to the four major categories once again indicated that articulation-pronunciation was the most important variable to intelligibility (164 points). Fluency was rated a distant second (115 points), followed by voice (109 points), and finally language (100 points). Regardless of speaker style or type of communicative deviation, the listeners overwhelmingly rated articulation-pronunciation as having the greatest influence on intelligibility, with little difference in the scores among the other three major categories. Implications of this finding are that debaters and other speakers must be cognizant of the fact that erroneous articulation-pronunciation is judged by listeners to be very important to speech intelligibility.

Fluency was also judged by a number of listeners to be important to intelligibility. Its major variable was pauses or hesitations. Judges of debate have consistently observed a rather flagrant violation of this speech dimension, attributed to lack of pauses or inappropriate pauses. Both types of pauses interfere with the prosody of speech. Lack of pauses tends to increase the speaking rate, while inappropriate pauses tend to interrupt the continuity of the message. It almost appears that quantity of verbiage rather than quality of argumentative postulates is the preferred method of debate. Debaters seem to have to increase their speaking rate well beyond what is intelligibly possible, in order to bombard the opposition with "salient" arguments. Once the speaking rate approaches 175-200 words per minute, intelligibility begins to deteriorate because precise neuro-muscular coordination of the speech structures at such a rapid rate is practically impossible. Debaters might be more successful if they would concentrate on intelligible speech that is convincing rather than try to inundate the opposition and the judges with excessive information presented in an excessively rapid and sometimes unintelligible manner.

The remaining two variables, voice and language, were not judged to be that important to intelligibility, although certainly important to effective speech. Inflection or intonation of voice was the most significant factor in regard to intelligibility in this category, while length of utterance, word order, and word appropriateness were of equal importance within the major category of language.

Conclusion. Based on the results of this investigation, articulation-pronunciation are

most frequently and most significantly related to speech intelligibility. Although the dimension of fluency was judged to be the second most important variable, it was rated considerably less important. Even though articulation - pronunciation and pauses-hesitations were typically implicated in regard to diminished intelligibility, individual analysis should be made of each speaker, since different speakers may have different reasons for having less than acceptable intelligibility. Speakers should be aware of all of the parameters that can influence intelligibility, and incorporate them into a systematic approach of self-improvement, whenever necessary.

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