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Effects of Non-Verbal Reactions on Viewers' Perceptions of Candidates in a Televised Election Debate: Implications for ETV

Dianne Eadie

A Thesis

in

The Department

of

Education

Presented in Partial Fulfilment of the Requirements
for the Degree of Master of Arts at
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Dean of Faculty

ABSTRACT

Effects of Non-Verbal Reactions on Viewers' Perceptions of Candidates in a Televised Election Debate: Implications for ETV

Dianne Eadie

Inspired by an analysis of pictorial treatment of candidates in the 1976 American Presidential television debates, this research investigated the effects of manipulation of camera angles and display of non-verbal behaviour on viewers' reactions to candidates in Canadian election debates.

A twenty-two minute videotape of extracts from the English TV Debate of October 25, 1988, consisting of the over-the-shoulder two-shots in the ninety-minute debate, was presented to 25 University students. The principal variables examined were frequency and length of speaking and non-verbal reaction sequences for each candidate, percentage of votes obtained for each candidate, and shifts between pre and post treatment perceptions.

Viewers' perceptions were measured through moment-by-moment responses using the Program Evaluation Analysis Computer System (PEAC), as well both a pretest and posttest. This method enabled subjects to provide their immediate responses as to who was winning the most votes while viewing the edited videotape.

Significant differences were found between the pictorial treatment (reaction sequences) accorded to the three political leaders during the non-verbal reaction sequences, and as well for the total time of each candidate's speaking sequences. Pictorial treatment had no affect on the percentage of votes obtained for each candidate nor did it alter perceptions as

to who was the winning candidate from one moment to the next.

The results are reviewed in terms of previous research findings, and their practical implications for educational television production.

ACKNOWLEDGEMENTS

I would like to take this opportunity to express my sincere gratitude to my thesis supervisor, Gary Coldevin, whose patience, flexibility and enthusiasm has enabled me to complete this task despite the physical distance between us. His deep interest in educational television and also his students has made this a valuable learning experience.

The inspiration and encouragement to pursue this topic was initiated by Dr. Jon Baggaley, who provided the opportunity to conduct research which ultimately affected my decision to expand my investigation.* Thank you, Dr. Baggaley, for introducing such a fascinating method of analysing the effects of television on its viewers.

Two individuals who were beacons of light during my Graduate studies at Concordia both on a departmental level and as well personally, were Anne Brown-MacDougall and Sandra-Lee Scalia-Stone. Thank you both for caring and always providing assistance when I needed it.

---

* The data reported in this thesis were collected during the writer's Concordia University internship with Professor Baggaley's "TV in Political Elections Project".

DEDICATION

I would like to dedicate the following research to my best friend, Harry Apostolatos, whose continued support and encouragement throughout University has enabled me to challenge my intellectual capabilities and as well to establish and accomplish goals which I never thought possible.

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CHAPTER ONE

INTRODUCTION, PURPOSE AND SIGNIFICANCE OF THE STUDY

Introduction

In order for television to be effective educationally it must take into account the nonverbal cues which ultimately affect viewers' perception of the source and content of the material being presented (Hovland et al., 1953). Several production variables can affect viewers' perception and attitudes; and particularly effective forms of manipulation can be accomplished with the assistance of various camera angles utilized during a television program (Mandell & Shaw, 1973). Overall, camera angles enable the viewer to assess how peripheral and background detail affect a speaker's credibility. Numerous studies document the ways in which physical appearances can either be ennanced or diminished depending on the positioning of the camera (Baggaley & Duck, 1975; Baggaley, 1980; Coldevin, 1981). Producers often utilize this knowledge in order to exploit or enhance the speaker's image.

Interaction is a vital and productive process which occurs between individuals throughout life, being essential within one's development not only as children but also adults. Social interaction cues enable individuals to respond and act accordingly depending on the implied or suggested message. Normal interaction between individuals leads to certain expectations and assumptions about the

behaviour being displayed. Baggaley & Duck (1976) state that individuals create hypotheses about life that are dependent on the many types of information which the individual receives during interaction with others and as well the way in which s/he reacts to it. These social interaction cues are therefore an underlying part of one's educational processes and can by themselves provide a wealth of information which would otherwise prove difficult to express and analyze.

Specific social cues are available through interaction with others, both physical in nature as well as nonverbal. Nonverbal behaviour in the form of facial expression and hand gestures provide a dynamic method of transmitting information. It is these nonverbal behaviours which can ultimately leave the other person with a possible understanding of the person's feelings or reactions to the situation or topic of discussion (Duck, 1974). Eye contact is one element of nonverbal behaviour which is deemed to be very important since it relates information about one person's feelings for another, both individually and reciprocally (Argyle, 1975). Furthermore, it enables individuals to establish some expectancies about each other.

Nonverbal cuing within normal social interaction provides more than an opportunity for people to draw inferences. It also enables them to sequence their behaviour. Once an interaction has begun, eye contact

serves as the regulating factor such that it signifies if the speech is over and who shall retain the floor (Argyle & Kendon, 1967). It seems as though a participant who is engaged in a focused interaction can be observed as alternating between periods whereby active messages are being sent, predominantly through speech and gesture, and those non-observant periods. These periods could be coined as being actions and silences.

The performance of one individual is affected by his/her locuter. Research (Borgatta & Bales, 1953; Leik, 1965) conducted which analyzes this phenomena states that the lower the number of acts per unit of time (act-rates) of individuals who partake in several different three-person discussion groups, the lower the act-rate of other participants will be and, the individual's act-rate will be higher. Each individual, however, appeared to possess a maximum act-rate which could be considered a characteristic. This enabled the prediction of an individual's act-rate in a group to be determined ahead of time given that the act-rates of the other members were known as well. The timing of actions also has a dramatic effect on the length of actions of the other person. Body movement, facial expression and looking patterns are all a part of the process of communicating with another individual, yet no precise evidence proves that these functions act as regulatory functions for the recipients. It is possible

that the degree of these movements act as continuous signals to the other person and assists their interaction process. Baggaley and Duck (1976) state that the effects of conflict between message theme and the functional cues of eye contact present a double-bind effect which leaves the other person feeling confused and unable to correctly decode the message. Given the importance of this phenomenon, both in normal behaviour as well as in its assessment, it would be deemed essential that a normal state of functioning be incorporated into television interactions thus providing the opportunity for the viewer to decode the message correctly. This is further emphasized by evidence (Baggaley & Duck, 1976) suggesting that filming conditions have a substantial influence on the behaviour viewed on television. If this is the case, it is possible then that the viewer may react to these distortions by further enhancement about the people and surrounding situations s/he views.

Nonverbal cues also prove to be important, with regard to the educational impact of television, since they provide the viewer the opportunity to react to the situation and speaker(s) being presented. Physical characteristics of an individual, such as height and hair colour, provide cues that influence reactions to educational media productions. These have been documented by Coldevin (1976) in his summary of empirical studies on this topic. Coldevin provides a classification of production variables divided into three

areas:

1)presentation/technical variables 2) content subject matter organization and 3) performer characteristics. Presentation/technical variables consist of camera factors, setting, colour versus black & white, still versus motion pictures, visual/audio-visual reinforcement and speed of presentation. Content/Subject Matter Organization analyses lecture, interview and discussion format, audience reaction inserts, review strategies and direct explanation versus. inserted questions. The third area, performer characteristics, pertains to sex, dress, age, appearance, level of eye content, prestige and prior knowledge of presenter.

The present study falls more into the area of performer variables, more specifically, background reactions of a candidate to a foreground speaker in a television political debate. The shots utilized in the study were close-up and medium angle either of which was used in an over-the-shoulder two-shot. Research in this area suggests that medium to close-up angle shots may influence the perceived "dominance" of the subject being taped (Tiemens, 1970; Mandell & Shaw, 1973). In the present case the close-up shots displayed the foreground speaker from the shoulders up to the top of the head while the medium shot depicted the candidate in the background from the waist to the top of the head. It appears as if a predominance of medium close-up to

close-up shots presents the optimal mix for effective television (Wurtzel & Dominick, 1971-72; Ellery, 1959).

Content subject matter organization was not a factor in the present study since the debate was not of a lecture, interview or discussion format with a moderator. The original debate is classified as a discussion format; however, the edited video-tape contained only shots in which two candidates were speaking and did not include interventions by the moderator.

With regards to performer attributes, there is little research which provides information stating whether or not this is indeed an area which could ultimately influence the attitude of the viewer. The personal characteristics of the three political party leaders could have played an important role in determining who was winning the most votes, however discussion of this area will be minimal. Quite often the viewer is not even aware of personal characteristics which affect their perception, and hence may not be capable of verbally stating what they found attractive or persuasive in nature.

Television can ultimately provide a vast amount of information which is both informative and educational, however, what must be stressed is the format in which this is accomplished. Given that television can be edited and altered to shape a preconceived format, it is possible that these alterations disturb the social behaviour it presents

since it is inconsistent with those that the viewer perceives normally (Baggaley & Duck, 1976). It is also possible that television may unintentionally stress or conceal cues which are necessary for viewers to formulate an assessment of a speaker within a particular function and context. It appears as if the medium distorts normal interactions in real life situations. The opposing argument suggests that given the current styles of television, the viewer is now capable of interpreting and distinguishing between cues which are produced by the medium and those which are components of everyday life.

Baggaley (1980) has shown that reaction shots could prove to be detrimental to the person listening since it provides the opportunity for the television viewer to witness any nonverbal behaviours which could prove to be unacceptable or judged poorly. The information offered by visual reaction shots of other types may also have a substantial effect on viewers' perceptions in general (Baggaley, 1980).

Unfortunately, when two cameras are utilized problems may arise while attempting to cover both speakers whenever they speak. The director cannot, at any given moment, predict exactly when the other person will begin speaking, and this unfortunately accounts for lack of synchronization between auditory and visual elements. The logical structure of the presentation is quite often weakened, ultimately

distracting the viewer as to the unfolding events (Baggaley, 1980). Since television is both an auditory and visual medium it is, at the least, logical that the two components should coincide so that the viewer is provided with an opportunity to analyze the content of the verbal information and the nonverbal behaviours simultaneously. This proposition, however, is open to testing.

Purpose of this Study

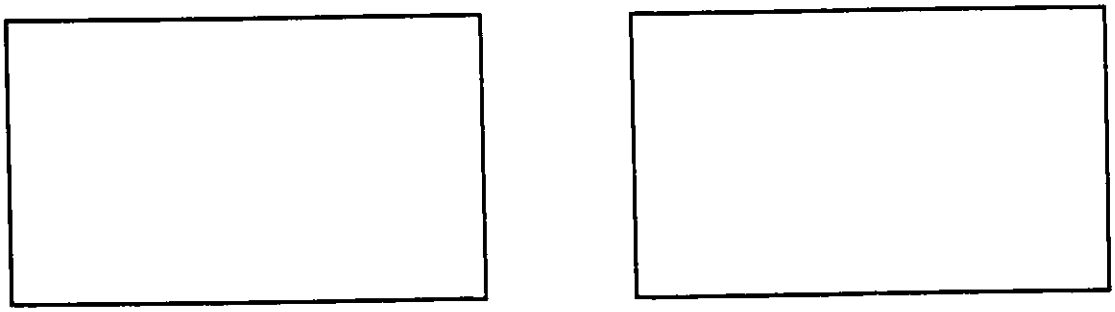
In October, 1988 an unusual opportunity to examine the persuasive effects of non-verbal cues arose in the form of a televised debate on CBC (Canadian Broadcasting Corporation) during the Federal Election campaign for Prime Minister of Canada. The three major political party leaders were Ed Broadbent - NDP (National Democratic Party), Brian Mulroney - PC (Progressive Conservative), and John Turner - Liberal. At that time Brian Mulroney (PC) was the Prime Minister of Canada and was faced with the possibility of handing over this position to one of his political adversaries.

During the debates the production's director utilized over-the-shoulder reaction shots of the three candidates along with various other shots. This proposed study will analyze a videotape of this debate, relating its visual structure to its audience impact. The specific objectives are to determine if:

1. The pictorial treatment differs in relation to any of the three candidates in terms of frequency and length in time of speaking and non-verbal reaction sequences.
2. The subjects' perceptions of any candidate are significantly affected by his over-the-shoulder reaction to the foreground speaker.
3. The subjects' responses changed from pre-test to post-test.

A standard two-shot will constitute the basis for this study as in earlier work by Tiemens (1978) - See Figure 1.

Figure 1: A Standard Two-Shot



The units under analysis in terms of viewers' perceptions, in all cases, will be the behavior displayed either by speaking or non-verbal reactions, of the person in the background.

Significance of this Study

In attempting to determine the importance of this study, in relation to educational television, it is important to review the previous research conducted pertaining to nonverbal cues and speakers' reaction and their impact on the viewer. Coldevin (1981) has summarized experimental research pertaining to television presentation variables with the intent of developing a comprehensive framework which would allow message design strategies to be categorized into either production or performer variable categories. These studies were concerned with practical implications for producers and formative evaluators of educational television. As noted earlier, these presentation factors are classified into two areas, namely, 1) Production Variables, which consists of technical variations and content organization, and 2) Performer Variables.

Previous studies of production variables have stated that credibility and attractiveness of presenters were strengthened if the preponderant shot was higher in angle than the corresponding referent shot (McCain et al., 1977). The current study analyses a situation where one political candidate is positioned in the foreground (larger than referent shot) and another in the background (smaller than

referent shot). As well, the screen composition of a shot appears to be perceived differently when it is on the left side of the screen as opposed to the right (Metallinos, 1979). There is, however, little research which confirms this effect with regards to varied presenter visual placement.

The videotape of the political debates being examined in this study presents all candidates either on the left or right side of the screen, and either in the foreground or background. A comparative analysis of these factors will be made between the results of this study and that of Metallinos and Tiemens (1977). In the former study, they compared the usage of both continuous right and left placement conditions on the presenter's credibility, appeal and stability ratings with the results indicating that the left side was more effective.

Performer variables has been stated as being the pivotal crutch (Coldevin, 1981) of educational television production planning, yet little research has been conducted pertaining to the question of "who" or "what" makes a good presenter. Eye contact levels, or the amount of time one looks into the camera or at the other person in the shot, have produced a variety of suggestions for television production handbooks. With regards to televised election debates, it can be noted that eye-contact behaviour is a key element in viewers' evaluation (Davis, 1978). Medium eye-

contact is perceived as adding more precision to the speaker's delivery (Coldevin, 1976; Baggaley et al., 1980) and a profile position as being more effective (Duck & Baggaley, 1975). These findings are an integrated part of the reaction shots presently under analysis in this study.

The aforementioned variables are very important within the production of educational television since the performer may or may not be viewed as attractive or credible and could possibly lack acceptable social skills or graces which may detract from the effect of the message delivery. At this time it is the responsibility of producers to identify possible sources of bias, prior to the program production, by utilizing the numerous options available which could control this process.

By holding both the camera angle (medium) and shot constant (medium close-up to close-up), reaction sequences are of main concern within the present study since they are utilized to display to the viewer the reaction of the political candidate as events transpire. Despite the fact that reaction shots do not necessarily clearly define the program's main message, they do, however, assist in establishing character involvement and demonstrate to the viewing audience a clearer picture of a situation or event (Wurtzel, 1979). At times it may be more important to view the reaction of the person rather than the individual who is

actually speaking.

Each political candidate, in the present study, appeared in two sequences: speaking or non-verbal reaction (in the distance) or speaking (closest to the camera). This analysis is restricted to the effects of the candidate in the distance.

If one political party leader appeared more often in a reaction sequence, with a higher angle, then it is possible that his credibility will increase. In terms of the educational impact on television viewers it is possible that this candidate may be deemed as the most knowledgeable and perhaps capable of transmitting more information. If the producer of the program is aware of this fact it could prove to be beneficial and hence would provide the opportunity to foster an enhanced learning environment.

The experimental research discussed in this section exemplifies the necessity for further analysis of production format within educational television. Coldevin (1981) perceives this research as offering the potential for a guide to be developed for educational and information television operations. Since television is presently incorporated into one's socialization process, it should promote visual literacy and increase learning.

CHAPTER TWO

LITERATURE REVIEW AND OPERATIONALIZATION OF VARIABLES

Tiemens (1978) analyzed the pictorial treatment of the candidates during the 1976 televised debates of Jimmy Carter and Gerald Ford with the intent of determining how each candidate was portrayed by the television medium. He focused upon research findings which related to visual communication and the principles of film and television aesthetics. The results suggested that Ford was viewed as having been biased against which was apparent through composition, camera angle and screen placement. However, it was stated that he did contribute to this bias himself since he maintained less eye contact with the camera and assumed grimmer facial expressions during the reaction shots. The method used by Tiemens consisted of analyzing the visual structure of the image which remained constant. The treatment data was limited to descriptive statistics and non-parametric tests of significance. These results revealed that there was a significant difference in camera angles in the second of the three debates. The composition of two-shots, as one subject is shown in the foreground and the other in the background, resulted generally in a higher vertical placement within the frame of the person appearing closer to the camera. If there is a change in camera height, as suggested in previous research, it is possible to influence the relative vertical screen placement of the two

subjects. Given this factor it was noted that Carter was favoured in the second debate in the two-shot. It seems as though this type of shot from both sides of the stage ultimately manifested the illusion that Carter was taller. Carter tended to appear with more frequency in the reaction shots with Ford using them to his advantage since he kept his eyes glued on Carter when the challenger was speaking. Ford looked at Carter 40 out of 41 times when he was shown in reaction shots. Bretz (1953) argues that placement of the camera in their different positions can enhance the dramatic relationship of one person to another and make one appear to be dominating. More specifically, a larger object would appear to be dominating a smaller one and the person higher in the picture tends to dominate one that is lower down. These factors may or may not be under the conscious control of the TV crew (Baggaley & Duck, 1976).

When manipulation of these elements occurs, people's perception is changed with relatively little awareness of such activity. McCain et al. (1977) have analyzed the development of visual messages in mass media and noted how complex such a procedure can be. The directors of television and film manipulate the verbal and visual content with the hope of focusing the audience's attention and ultimately eliciting a desired result. The majority of research conducted in this field has been geared towards the effect of the verbal or cognitive content of the mass media

messages with the intent of developing a better understanding of media's impact on the process of socialization. In general, film theorists and critics agree that higher camera angles suggest weakness with a lower angle shooting upward appealing to strength, dominance and power of the visual image.

McCain et al. (1977) hypothesized that the variance in vertical camera angle results in distinctive attitudes of recipients of a televised source. This statement was tested and the results confirmed the notion that the speaker's perceived credibility was increased, on three of four dimensions, as a result of the height of the camera angle. These findings suggest that a televised subjects' perceived character, i.e. attractiveness, sociability, composure, and competence, are augmented when being viewed from a higher camera angle as opposed to a lower camera angle.

In summary, former research suggests that televised personalities and newscasters would ultimately benefit from the prepondent shot being higher than the corresponding referent shot. A further recommendation would be to use low angle shots sparingly even though they do increase credibility and attraction.

Guba (1964) discusses how reaction shots increase attention due to the change in visual images. His research states that eye movements tend to cluster about certain areas of the visual field on the television. It appears as

though the most definite tendency is for the viewer to focus on a narrator's face when s/he is present. At times there existed the virtual exclusion of other elements in the scene which were dramatized and as well the tendency to be distracted by nonrelevant elements. There apparently exist systematic transformations of the eyeball in its socket which may be related to attention.

Results of Guba's research indicate that there is a distinctive "surrender" pattern exhibited in response to highly complex or "busy" scenes. The researchers found that there was a need to define a continuum of movements displayed which included "minimovements" and "slides" since there was not sufficient evidence to account for all eye-movement phenomenon. One determining factor of intelligence has been noted to be eye-movement indices, more specifically minimovements and no observable movements as well as several combinations thereof. Finally, it was noted that patterns of movements over time can be analyzed with the intent of proving that there is a relationship between exposure time and maximum learning.

Studies of the structure of TV debates have demonstrated that the usage of reaction shots enhances even further the perception that a vigorous argument or fight transpires between two candidates or rather more intense a confrontation (Messaris et al., 1979). Quite often the role of the television director in shaping the perceptions of

those audience members viewing the event is overlooked. The non-viewers rely on opinions which are ultimately improved and enhanced by television-based accounts.

The overall pattern noted by Messaris et al., (1979) was that the reaction shot (predominantly close-up of the opponent) is the most effective switching technique in which a director can emphasize potential challenge and combative spirit in the debate situation. The nonverbal behaviour is deemed to be very informative in determining exactly where speakers immediate attention focus lies. During the 1976 Presidential debate under discussion, the speakers were seen looking at the panellists for a large amount of time. This ultimately did not provide the opportunity for the between-candidate confrontation and hence was predetermined to be the format of the debate. Given the nature of the debate one could speculate that under more relaxed conditions a variety of different behaviours would have occurred. It was very apparent that the organizers discouraged direct confrontation thus de-emphasizing the nonverbal component of the debate.

Messaris et. al. (1979) noted the existence of differences among the three debates. The second debate's reaction shots accounted for the greater frequency of switching. More than twice the number of reaction shots were found in the second debate as opposed to the other two. The most frequently reaction shot used was the two-shot, in

all the three debates, where the speaker appears in the foreground and his opponent appears in the background. It was due to this greater use of close-up shots in Debate II that viewers tended to perceive there to be a vigorous fight transpiring between the two candidates. Close-up shots of the opponent's responses serve as an unambiguous cue and reinforced the emphasis upon the confrontation. A close-up can magnify the evidence of this response much more than a two-shot is capable of doing. Baggaley (1980) states that if a person is listening in a reaction shot it provides an opportunity for the viewers to witness all nonverbal behaviors, thereby leaving one to pass judgement in determining whether it is unacceptable or in poor judgement.

Hypotheses

Since it was a national debate, each candidate should have been entitled to equal participation in the total amount of air time. Based upon the foregoing research, the following hypotheses will be investigated:

1. There will be no significant difference in the frequency and length of speaking or non-verbal reaction sequences attributed to each political candidate.

2. There will be no significant difference in the percentage of votes obtained for each political candidate when they are either engaging in speaking or non-verbal reaction sequences during the debate.
3. There will be no significant shifts between pre and post treatment perceptions of the winning candidate.

Rationale for Hypotheses

It could be assumed that if one political party leader was the recipient of more or less attention from the camera that this would possibly affect the viewers' perceptions and henceforth may alter their opinions. Whether the amount of reaction sequences presented for one candidate was greater than or less than the other does not necessarily hint at what the viewer may be thinking. If for example, one political leader is viewed twice as often as the others, it cannot be assumed that he will be seen more favourably; in fact the opposite may be true. In this instance exposure does not necessarily signify popularity but rather, depending on the behaviour displayed in the reaction sequence, could prove to have an adverse effect.

The literature review discussed how viewers perceptions can be affected by the type of camera angle utilized (Mandell & Shaw, 1973; Tiemens, 1978; etc.). The responses

from subjects using the Program Evaluation Analysis Computer System (PEAC) while viewing the edited videotape, (which consisted of all the over-the-shoulder two-shots), and the subjects' responses to the pretest and posttest would determine whether or not their perceptions were altered by camera factors. If in fact the latter was the case then it would clearly signify that these forms of manipulation could ultimately afford the producer the opportunity to affect the political outcome of any given party leader's future.

Operational Definition of Variables

Production Variable:	a definitive process, method or technique of television production (Coldevin, 1981).
Performer Variable:	presenter characteristics which may influence the effectiveness of a given program (Coldevin, 1981).
Speaking Sequence:	depicts the person in the background within a speaking role. (no audio track)

Non-Verbal Reaction: Non-verbal reactions refers to gestures, (no audio track), eye-movement etc.

Reaction Sequence: A sequence consists of a standard over-the-shoulder shot in which the subject is photographed in either a bust or waist shot with another subject's shoulder in the foreground. It induces depth in the shot.

Two Shot: Standard shot used throughout the debate in which one subject is shown in the foreground and the other in the background. This usually results in a higher vertical placement within the frame of the person appearing closer to the camera.

CHAPTER THREE

PROCEDURES

Experimental Material

The treatment consisted of viewing a twenty-two minute videotape of extracts from the English TV Debate of October 25, 1988. The tape featured all of the over-the-shoulder two-shots presented in the course of the ninety-minute debate. All of these shots were presented in this edited version in the sequence in which they appeared in the televised debate.

Subjects

The population and sample tested consisted of University students enroled at Concordia University; permission was obtained to use an undergraduate Commerce class with 14 students, and a graduate class in Educational Technology consisting of 11 students, for this purpose. The selection of these two groups was based upon the availability of individual usage of class time periods and the consent of the teacher.

Production of Edited Videotape

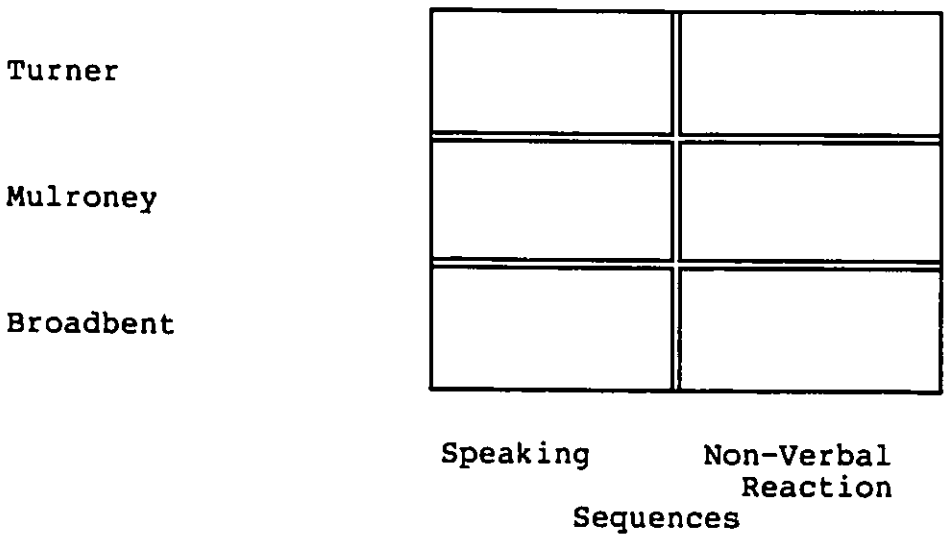
The twenty-two minute edited videotape was extracted from a videotape of the three hour live debate aired in October 1988. The researcher edited out all the two-shot over the shoulder shots and eliminated the sound effects (no

volume) according to how they appeared in the original debate. The auditory channel was eliminated so as to decrease interference in trying to determine if the viewer perceptions were affected by the non-verbal reaction sequences and/or speaking sequences.

Research Design

A within-subject experimental design using a pretest and post-test was employed resulting in a 3 x 2 factorial design (Tuckman, 1972) with two intact classes, namely frequency of shots (Broadbent, Mulroney and Turner) x Speaking versus Non-Verbal Reaction (Figure 2).

Figure 2: Factorial Design



The diagram of the experiment is as follows:

$XO_1 : X_{1,2,3}: \quad Y_{1,2,3} : Z_{1,2,3} \quad : \quad O_2:$

O_1 Pre-test

$X \; X_{123}$ represents the different sequences in which Broadbent, Mulroney and Turner appeared.

$X \; Y_{123}$ are the sequences in which the candidates are speaking.

$X \; Z_{123}$ are the sequences in which the candidate displayed only non-verbal behaviour.

O_2 Post-test

Variables

Independent: Non-verbal reaction versus speaking sequences of all the over-the-shoulder background shots in the three-hour debate.

Dependent:

A) Frequency and length of time of each type of sequence occurrence.

B) Frequency of audience perception that a given politician was winning the most votes in a given sequence.

C) Pre and Post treatment perception of winning candidate.

Treatment Presentation and Testing

The data were collected through the moment-by-moment responses of the computer-based analysis system called the Program Evaluation Analysis Computer System (PEAC) designed by PEAC Media Research Inc.

The PEAC System was a joint venture by the Ontario Educational Communications Authority in Canada and the Children's Television Workshop. This method of obtaining second-by-second measurement of individual responses was a cost-effective approach to conducting formative evaluation on television programming. It consists of 40 or more response units along with a central microcomputer and peripherals which can be pre-programmed to collect and store data which can be retrieved at a later time. Various forums have utilized the PEAC System such as TV Ontario, (Nickerson, 1979) to evaluate their educational programming, as well as the Republican Party in political elections during the 1980's (Baggaley, 1986).

This method of data collection is a valuable tool to producers, especially in TV commercials, since it provides the opportunity to analyze second-by-second evidence of appeal and persuasiveness. As well it can readily be utilized when designing political campaigns in trying to determine the detailed impact of campaign strategies or candidates (Baggaley, 1986). As Baggaley (1986) states this

may also lead to abusive usage, however it is anticipated that educational broadcasters will use the PEAC System with the same interest and enthusiasm as advertising and propagandist colleagues do.

The subjects were given a pretest and were asked to answer three questions which focused on what political party leader they thought ranked first, second and third during the actual three-hour television debate in October 1988 (see Appendix I). Upon completion of this pretest, they then viewed the edited twenty-two minute videotape and responded to the question, "Who, from one moment to the next, is winning the most votes?". They pressed one of three buttons designated on the hand-held units, which store the information and which was fed into the PEAC computer, thus enabling the determination of who was perceived as winning (Broadbent, Mulroney or Turner). The final aspect of the experiment consisted of stopping the videotape and retrieving the hand-held units whereupon a post-test was distributed with questions focusing upon politics and voting in general, personal data and once again, who they perceived as coming in first, second and third during the English TV Debate in October 1988 (Appendix II).

The data obtained from subjects' responses to the first three questions (who was perceived as first, second and third) was no longer a factor in the present analysis since there was no change from pretest to post-test (See Appendix

III).

Internal validity was controlled for since all elements of the edited videotape remained unchanged. The method of testing followed the same procedure for both groups and the contents of the pre and post-test as well as videotape were also identical. The subjects were tested in March 1989 which was five months after the original live television debate and therefore may have been expected to have known the debate and election outcome. This is a major weakness and/or constraint within the study since the data were collected five months after the actual televised debate. Selection did not prove to be a problem since the two groups of subjects were not systematically different. They were all university students who had viewed the original live television debate. Testing was a problem since the same pre and post-test with no control group was used. However, the manner in which the instrumentation was utilized (PEAC System) did not vary from one group to the other.

Data collection, through print-based material and also microcomputer facilities, did not allow for maturation to occur since instructions and method of recording responses were clear, simple and innovative. The PEAC System enabled second-by-second reactions of the subjects to be recorded through the hand-held response units. Baggaley (1982) has referred to this method of data collection as being a useful advance in this technological field. The effects of second

changes could therefore be determined with relation to attitudes and learning by students merely pressing a button. In this study students did exactly that and as well answered a pre-test and post-test which made the testing time to equal thirty-five minutes.

The dependent measures were created through the use of the PEAC System. Second-by-second responses were recorded through the hand-held units; the highest number of votes gained by each politician at any one point during each shot was calculated (i.e. his "number of votes" during each shot).

Coding of Data

The data were categorized based on the type of reaction sequences being presented at the corresponding point in the videotape. This allowed for comparison between both the overall and round-by-round frequency of appearances (either within a speaking or non-verbal role) as well as students' perception of specific candidates.

Within the analysis, shots within the video which were four seconds or less were eliminated, (too short for the viewer to decode and internalize) and also those which portrayed the political candidate in the background as both speaking and non-verbal reacting during the same sequence. Reasoning for the latter stems from the need to distinguish

between the affect on the subjects of either speaking or non-verbal reaction sequences. The length of these shots may have also had an affect on the recording of viewers' responses since the time frame may have allowed for one shot to run into another and could ultimately produce a carry-over effect.

The task presented to the subjects was to determine who was winning the most votes from one moment to the next by pressing a button on the hand-held units of the PEAC System. The "winner" of each shot was determined by taking the average number of votes for each candidate which was recorded by the PEAC System. In cases where two candidates were tied for first place the shot was eliminated from the statistical analysis since the emphasis was on the "winner" and not if they were being perceived by the subjects as being equal.

The debate consisted of three discussions in each round, for a total of three rounds. Each candidate appeared twice in every round. The coding of shots was determined by the scheme below with the subjects' responses, as to who was winning the most votes, being matched with each shot and their appropriate code which reveals the position and behavior exhibited by the candidate.

The sequence of the candidates appearances in each of the three rounds are as follows:

Discussion 1 - Mulroney vs Turner

Discussion 2 - Turner vs Broadbent

Discussion 3 - Mulroney vs Broadbent

The codes for the various shots, as the candidates appeared, have been numbered from one to twelve and are as described below:

A) Mulroney was in the background and Turner was in the foreground. If Mulroney was speaking the code is (1) and if he was displaying non-verbal reactions it is (2).

B) Turner was in the background and Mulroney was in the foreground. If Turner was speaking the code is (3) and if he was displaying non-verbal reactions it is (4).

C) Broadbent was in the background and Turner was in the foreground. If Broadbent was speaking the code is (5) and if he is displaying non-verbal reactions it is (6).

D) Turner was in the background and Broadbent was in the foreground. If Turner was speaking the code is (7) and if he was displaying non-verbal reactions it is (8).

E) Broadbent was in the background and Mulroney was in the foreground. If Broadbent was speaking the code is (9) and if he was displaying non-verbal reactions it is (10).

F) Mulroney was in the background and Broadbent was in the foreground. If Mulroney was speaking the code is (11) and if he was displaying non-verbal reactions it is (12).

Data Analysis

Chi-square tests were used to examine significant differences in the frequency of candidates' presentation.

A One-Way ANOVA with 3 levels (one for each politician) was utilized in attempting to determine if the videotape had an effect on viewers' voting responses during the debate. All tests were conducted with a confidence level of 0.05.

CHAPTER IV

RESULTS

The results in this chapter are presented in sequential order of hypotheses so as to allow for a coherent presentation and structured format.

NUMBER OF SPEAKING VERSUS NON-VERBAL REACTION SHOTS

Table 1 shows the total shots for each political party leader for the three rounds of the Debate.

Table 1

Total Speaking and Non-verbal Reaction Sequences for Each Political Party Leader

	Frequency of Shots		
Type of Reaction Shot	Broadbent	Mulroney	Turner
Speaking Sequence	13	25	22
Non-Verbal Reaction Sequence	14	24	8

The Chi-Square test (speaking and non-verbal reaction sequences for each party leader) in Table 1 revealed significant differences in the total number of two-shots for the three hours of the debate (Chi-square = 8.05, df = 2,

$p < .05$). This pattern was significantly biased toward Mulroney who received 49 shots versus 30 and 27 for Turner and Broadbent respectively.

Further analysis revealed that there were no significant differences (Chi-square = 3.90, df=2, NSD) in the speaking sequences for each candidate (Broadbent received 13 shots versus 25 and 22 for Mulroney and Turner respectively). However, the non-verbal reaction sequences revealed the opposite (Chi-square = 8.51, df = 2, $p < .05$), thereby suggesting that there is a difference between candidates' exposure (Mulroney received 24 shots versus 14 and 8 for Broadbent and Turner respectively) with Mulroney being significantly favored.

Table 2

Speaking and Non-verbal Reaction Sequences by Political Party Leader for Round 1

Type of Reaction Sequence	Broadbent	Mulroney	Turner
Speaking Sequence	5	9	9
Non-Verbal Reaction Sequence	4	10	2

Table 2 shows the data utilized in the analysis of the Chi-Square test in Round 1 whereby the results for the total number of both speaking and non-verbal reaction sequences were not significant (Chi-square = 5.22, df = 2, NSD).

As well, the results for the speaking sequences produced no significant differences, (Chi-square = 1.30, df = 2, NSD) between candidates. However, the non-verbal reaction sequences were found to be statistically significant (Chi-square = 6.49, df = 2, $p < .05$), thereby suggesting that there is a difference between the number of non-verbal reaction shots per candidates with Mulroney being favoured over both Turner and Broadbent.

Table 3

Speaking and Non-verbal Reaction Sequences by Political Party Leader for Round 2

Type of Reaction Sequence	Broadbent	Mulroney	Turner
Speaking Sequences	3	6	4
Non-Verbal Reaction Sequences	6	7	1

No significant difference (Chi-square = 3.54, df = 2, NSD) was found between total speaking sequences and non-verbal reaction sequences for Round 2. The same finding held for individual analysis of both the speaking sequence (Chi-square = 1.06, df = 2, NSD) and the non-verbal reaction sequences (Chi-square = 4.42, df = 2, NSD).

Table 4

Speaking and Non-verbal Reaction Sequences by Political Party Leader for Round 3

	Frequency of Shots		
Type of Reaction Sequence	Broadbent	Mulroney	Turner
Speaking Sequences	5	10	9
Non-Verbal Reaction Sequences	4	7	5

Table 4 shows that the results from Round 3 revealed no significant difference between candidates with regards to the total number of speaking and non-verbal reaction sequences (Chi-square = 2.43, df = 2, NSD). No significant differences were found between all three candidates appearing in speaking sequences, (Chi-square = 1.74, df = 2, NSD) as well as non-verbal reaction sequences (Chi-square = 0.86, df = 2, NSD).

The significant differences in total number of speaking versus non-verbal reaction sequences noted in Table 1 are thus mainly derived from the unequal distribution of scores in Round 1, particularly those accrued to the non-verbal reaction sequences.

Table 5

Dyad Comparison of Total Speaking and Non-verbal Reaction Sequences: Mulroney versus Turner

Type of Reaction Shot	Mulroney	Turner
Speaking Sequences	25	22
Non-Verbal Reaction Sequences	24	8

The total speaking and non-verbal reaction sequences for each candidate was compared with the results suggesting that Mulroney and Turner are not being presented equally (Chi-square = 4.84, df = 1, $p < .05$). (Mulroney appeared in 49 shots while Turner was in 30 out of the 3 rounds of the debate).

Further analysis revealed that no significant differences occur between Mulroney and Turner with regard to number of speaking sequences (Chi-square = 0.18, df = 1,

NSD). The non-verbal reaction sequences, however (Chi-square = 8.0, df = 1, $p < .05$), show Mulroney significantly more represented than Turner.

Table 6 shows the total speaking and non-verbal reaction sequence for Mulroney versus Broadbent. The results significantly favour Mulroney (Chi-square = 6.36, df = 1, $p < .05$) who appeared in 49 shots while Broadbent was in 27 out of the 3 rounds of the Debate.

Table 6

Dyad Comparison of Total Speaking and Non-verbal Reaction Sequences: Mulroney versus Broadbent

Type of Reaction Shot	Mulroney	Broadbent
Speaking Sequences	25	13
Non-Verbal Reaction Sequences	24	14

Further analysis revealed that significant differences appear between Mulroney and Broadbent with regard to the number of speaking sequences (Chi-square = 3.78, df = 1, $p < .05$). The non-verbal reaction sequences, however (Chi-square = 2.62, df = 1, NSD) show Mulroney and Broadbent

with no significant difference.

Interestingly, the total speaking and non-verbal reaction sequences for Turner versus Broadbent produced no significant differences (Chi-square = .1578, df = 1, NSD). Turner appeared in 30 shots while Broadbent was in 27 out of the 3 rounds of the debate (Table 7).

Table 7

Dyad Comparison of Total Speaking and Non-Verbal Reaction Sequences: Turner versus Broadbent

Type of Reaction Shot	Turner	Broadbent
Speaking Sequence	22	13
Non-Verbal Reaction Sequence	8	14

Further analysis revealed that no significant differences occur between Broadbent and Turner with regard to the number of speaking sequences (Chi-square = 2.3, df = 1, NSD). The non-verbal reaction sequences also proved to be non-significant (Chi-square = 1.62, df = 1, NSD).

Length of Sequences for Each Candidate

Broadbent has a total of 186 seconds compared to Mulroney with 464 seconds (the greatest time) and Turner 351 seconds. Even though there appears to be considerable difference between Broadbent's total time with regards to Mulroney and Turner (Table 8), Table 9 shows that no significant differences were found between the total time sequences for each candidate.

Table 8

Total Time Sequences for Each Candidate
Three Rounds

Type of Reaction Shot	Broadbent	Mulroney	Turner
Speaking Sequence	100	312	293
Non-Verbal Reaction Sequence	86	152	58

Table 9

One-Way ANOVA for Total Time Sequences of Each Candidate Three Rounds

Source	SS	df	MS	F
A	13,030.89	2	6,515.45	9.19
S	8,784.22	2	4,392.11	
A x S	2,836.44	4	709.11	
Total	24,651.56	8		

However, upon analysis of the speaking only sequences a significant difference was noted ($F = 16.84$, $df = 2$, $p < .05$), but the total time for the non-verbal reaction sequences proved not to be significantly different ($F = 3.61$, $df = 2$, NSD).

Subjects' Voting Responses During Debate

Table 10 demonstrates who was winning the most votes, whether it was in a speaking or non-verbal sequence. It appears as though when Turner is in the background and in a speaking sequence, he is as effective as Mulroney, and both candidates are more effective than Broadbent. When Turner is in the distance and is in a non-verbal reaction sequence, he is tied with Broadbent ($n = 12$). It is interesting to

note that Mulroney only received votes when he is viewed in a speaking sequence.

Table 10

Subjects' Voting Responses to Candidates During the Debate by Type of Reaction Shot

Type of Reaction Sequence	Broadbent votes	Mulroney votes	Turner votes
Speaking Sequences	8	18	18
Non-Verbal Reaction Sequences	3	0	3

Overall, it appears as if Turner wins the most percentage of votes (33 vs 72 and 84). Table 11, however, shows that these differences are not significant when comparing the overall total percentage of votes. Yet, upon further analysis the votes obtained during speaking sequences proved to be significant ($F = 14.95$, $df = 2$, $p < .05$) while the non-verbal reactions did not ($F = 3.50$, $df = 2$, NSD).

Table 11

ANOVA Comparing the Percentage of Votes for Each Political Party Leader (Broadbent vs Mulroney vs Turner)

Source	SS	df	MS	F
A	-1,903.83	1	-1,903.83	1.83
S	9,000.33	2	4,500.17	
A x S	-2,079.67	2	-1,039.83	
Total	5,016.83	5		

And as Table 12 indicates, the distribution of votes did not change from the pretest to the posttest.

Pre-Post Test Comparison of Perception of Winning Candidate

Table 12

Pretest and Posttest Comparison of Subjects' Perception of Winning Candidate in the Debate

	Broadbent	Mulroney	Turner	Unsure
Pretest	3	4	16	2
Posttest	3	4	16	2

Thus it appears that even though Mulroney had appeared significantly more in non-verbal reaction sequences than either Turner or Broadbent with Turner winning more of the percentage of votes during the debate. The result was reinforced by no change in the perception that Turner was the clear winner, both before and after the treatment. Broadbent was initially deemed as being the clear-cut winner of the debate by the media. However, as more feedback and information were gathered, the press and electronic media placed Turner within this role. This previous knowledge could possibly explain why, within this study, subjects had viewed Turner as being superior.

Individual analysis showed that no significant differences emerged between candidates as to amount of speaking sequences; and only during Round 1 did significant differences emerge between political candidates on non-verbal reaction sequences.

Notably, however, 88% of the voting took place during the speaking sequences (Table 10). And given that there was a significant difference between the total number of speaking sequences, this suggests that non-verbal reactions had virtually no effect on voting. This could be directly related to the fact that speaking sequences (705 seconds) were much greater than the non-speaking (296 seconds).

CHAPTER V

CONCLUSION AND DISCUSSION

Conclusion

The purpose of this study was to test three hypotheses with regards to the televised Canadian Election Debate which was held in October 1988. The intent was to examine the persuasive effects of reaction sequences, as they arose in the form presented, between the leaders of Canada's three main political parties. This study analyzed a videotape of this debate and related its visual structure to its audience impact. The specific objectives were to determine if pictorial treatment (reaction sequences) of the three political party leaders differed in relation to any one of the three candidates, and if the subjects' perceptions of any candidate were actually affected by the reaction sequences. The results are discussed in relation to the original hypotheses.

Hypothesis 1: There will be no significant difference in the frequency and length of speaking or non-verbal reaction sequences attributed to each political candidate.

The pictorial treatment (reaction sequences) of the three political party leaders revealed the following:

(1) There was a significant difference found between the total numbers of speaking and non-verbal

reaction sequences for the 3 rounds which were attributed to the non-verbal reaction sequences located in Round 1 of the 3-hour debate. In all 3 rounds the difference in the amount of speaking sequences for each candidate proved not to be significant.

(2) The difference between the total amount of shots in which Mulroney and Turner appeared was statistically significant, and was attributed to the non-verbal reaction sequences.

(3) There was a significant difference found in the total number of speaking and non-verbal reaction sequences in which Mulroney and Broadbent appeared, attributable to the speaking sequences.

(4) The comparison of total amount of shots in which Turner and Broadbent appeared proved not to be significant.

(5) No differences existed between the total time sequences for each candidate. However, further analysis indicated that differences in the speaking sequences were significant while the non-verbal were not.

In testing the first hypothesis, thus it was determined that the frequency of pictorial treatment (speaking and non-verbal reaction sequences) did differ and all the candidates

were not displayed the same. As well, the length of speaking sequences for each candidate were significantly different, while the non-verbal reaction sequences were not.

Hypothesis 2: There will be no significant difference in the percentage of votes obtained for each political candidate when they are either engaging in speaking or non-verbal reaction sequences during the debate.

Subjects' perceptions of candidates in relation to camera angles produced the following results:

(1) In analyzing the percentage of votes each candidate obtained it appeared as though Turner was tied with Mulroney when in a speaking sequence; as well Turner was tied with Broadbent when in a non-verbal reaction sequence.

(2) When testing the foregoing conclusion, statistical tests reveal that there was no significant difference between the percentage of votes for the three rounds for each political party leader. There was however, a significant difference between the total percentage of speaking versus non-verbal reaction sequences; and almost 90% of voting took place during the speaking sequences.

Hypothesis 3: There will be no significant shifts between pre and post treatment perceptions of the winning candidate.

Given the constant responses by the subjects on the pretest and posttest, it appears as if screen placement did not have an effect on their perceptions.

In summary the results indicate that: (a) there is a significant difference between the pictorial treatment (reaction sequences) of the three political leaders in relation to one another; (b) subjects' perceptions of any candidate were not affected by speaking and non-verbal reaction sequences despite the fact that they clearly chose Turner as winning the most percentage of votes, both within speaking sequences and tied with Broadbent in the non-verbal reaction sequences; (c) no significant differences existed between the total time sequences for the three candidates; (though a difference was noted during the speaking sequences) and; d) no significant shift between pre and post treatment perceptions of the winning candidate was noted.

It can thus be concluded that reaction sequences did not affect the second-by-second perceptions of who was winning from one moment to the next. As well, it is to be

noted that there was a significant difference between the amount of votes each political party leader received during the speaking sequences from the subjects during the debate.

Discussion

Throughout the analysis there was one factor which was noted to be of interest and that was the number of shots in which Mulroney appeared in comparison to the two other candidates. Whether Mulroney was in a speaking or non-verbal reaction sequence, he appeared more often thus providing the opportunity for the viewers (subjects) to notice his reactions either verbally or non-verbally (no audio).

It is possible that Mulroney's exposure could have been beneficial or detrimental depending on the reactions displayed. Given the results of this study, however, it cannot be claimed that reaction shots were detrimental to Mulroney. Baggaley (1980) indicates that evidence of a person's reaction shots provides an opportunity for the viewers to witness a greater repertoire of nonverbal behaviors, than evidence of speaking shots alone would provide.

There were several opportunities which arose when the number of shots Turner appeared in were close to those of Mulroney. This, however, does not indicate that these two

candidates were in the same position with regard to the viewers' perception. Further statistical examination of this factor provided results which indicated that Turner did not appear more favourably when engaging in a non-verbal reaction sequence in comparison to a speaking sequence. Given this it is possible that Turner may have affected viewers' perceptions, when comparing him to Mulroney, through more attractive verbal and nonverbal cues.

The viewers' (subjects') perception of who was winning the most votes proved to be Turner despite the fact that he appeared less often than Mulroney. Again this could be attributed to screen placement as noted earlier. It is also possible that the nonverbal behaviour played a role in these results, however, this factor was not analyzed in the study. As well, perhaps Turner appealed to the viewers more than Mulroney.

Metallinos' et al. (1979) research provided some evidence suggesting that if the visual image appears on the left side of the screen, visual retention is greater than if the image was on the right side. Turner appeared, throughout the debate, on the left side of the screen in both speaking and non-verbal reaction sequences as did Broadbent. Mulroney, on the other hand, switched from either side and appeared in both the foreground and background of the shot.

Despite the fact the Mulroney appeared in more shots

than the other two candidates, he still came very close to obtaining the percentage of votes obtained by Turner (by 5 votes) and managed to surpass Broadbent by 17 votes. This would indicate that screen composition could be a determining factor of viewers' perception however this cannot be confirmed or denied within the constraints of the present study.

However, the results of the present study do coincide with those of Messaris et al. (1979) who found there exists the possibility that nonverbal behaviour enables the viewer to perceive that a confrontation was actually taking place between the two candidates. It is not known whether displaying such shots is intentional or not, on the part of the director, however it does indicate the studio directors and camera-men tend to emphasize the details of aggressiveness and tension deliberately by selecting such shots.

A bias existed towards Mulroney whereby the total number of shots proved to be significant as well as the non-verbal reactions. This raises the question as to whether or not Mulroney was intentionally presented in more non-verbal reaction shots than the other two candidates. And if so, it is possible that Turner was perceived more favorably in these discussions than Mulroney. Increased exposure within any position will ultimately provide the opportunity for the viewer to become more aware of the candidate's lack of

composure, inability to respond to questions and/or comments and as well to view physical characteristics which may be deemed unattractive. If Mulroney was intentionally presented more than the other candidates, these aforementioned factors would have an effect on viewers' perceptions and hence possibly alter their actual political voting choice.

Overall, it appears as if several factors could have affected the study such that these results were obtained. Perhaps if a larger sample of subjects were utilized the question addressing differences in pictorial treatment (reaction sequences) in relation to one another could have varied. The decision rendered was to state that all candidates were not displayed equally. The comparison of Mulroney and Turner's total number of shots for the three rounds suggests that there exists a bias in the number of camera shots (not known if intentional or not on the part of the producer). Ultimately this could have affected Mulroney's chance of being perceived as winning the most votes.

Even this sample size did provide some valuable hints as to where and why television viewers were affected by non-verbal behaviours during the actual live debate in 1988. Broadbent appeared the least often out of all the three candidates when he was either speaking or non-verbal reaction, yet after the debate both print and electronic

media claimed that he had won. Bretz's (1953) research argues that placement of the camera in their different positions can enhance the dramatic relationship of one person to another and therefore appear to be in a dominating situation. More specifically, a larger object would appear to be dominating a smaller one and the person higher in the picture tends to dominate one that is lower down. It is possible that these results could be confirmed by the techniques and statistical testing utilized in the present study if this specific factor was analyzed in greater detail.

One other area which could have affected the outcome of this study was the fact that viewers had to rely basically on nonverbal cues and messages in attempting to determine who was winning the most votes (no audio track was utilized). Baggaley & Duck (1976) have stated that the effects of conflict between message theme and the functional cues of eye contact can present a double-bind effect. This leaves the other person feeling confused and unable to correctly decode the message.

Reaction shots (over-the-shoulder two-shots) do not allow the viewer (subjects) the opportunity to see the other person's reaction (candidate appearing in the foreground with side-profile or back to the camera). Baggaley and Duck's (1975) research emphasized how shooting conditions have a substantial influence on the behaviour viewed on

television. The viewer, or in this case, subjects, could possibly have reacted to these distortions such that they affected their perceptions when answering the research question. Given the nature of the treatment, namely a twenty-two minute edited videotape, it is possible that these distortions were magnified since the subsequent reactions to each shot did not follow.

Another factor to consider is individual subjects' attention or lack thereof. There is no way of ensuring that buttons are not being pressed merely for the sake of fulfilling the demands made by the researcher.

If the audio track had been incorporated into the testing the results may also have varied. This addition to the study could have provided more information as to whether or not non-verbal behaviours do affect viewers' perceptions. In this manner if the results were similar to those under discussion, it could be concluded that the oral content does not affect the decoding and interpretation of the visual messages of an event. The alternative conclusion could be that there is a difference and hence it could be suggested that the oral messages are more effective in altering and shaping viewers' perceptions.

One factor which was not analysed in detail in the present study, but could prove for subsequent research, was the switching of Mulroney from the left side of the screen to the right. Metallinos & Tiemens (1977) have conducted

research which states that appeal and stability of ratings, in relation to presenter's credibility, was more effective on the left side of the screen. Turner appeared only on the left-side of the screen while Broadbent was always on the right. This may have enhanced the subjects' perception of Turner and hence may have diminished that of Broadbent and most of all Mulroney.

Practical Implications for ETV

The present study has provided the opportunity to explore the effects of reaction sequences on viewers' perceptions. It does not necessarily refute or agree with previous research conducted in this area; rather it demonstrates the variability to be faced when attempting to analyze complex factors inherent to human behaviour (i.e. reactions and perceptions). The learning process is an on-going event with television's role meant to be positive in nature.

Schramm (1977) discusses how the television medium has clearly proven its usefulness in relation to its ability to teach as well as a teacher. The focus of concern, however, is how to use a particular medium in producing the most effective and desired learning outcome. With regards to television it appears as if a large part of the answer is hidden in the varied production techniques and presentation methods.

The implementation of research information, derived from numerous studies within educational television, is a relatively new phenomenon. For a number of years producers and television broadcasting companies may not have been aware of the affect that production and presenter variables have on the viewers' learning process. Today this attitude is less prevalent in the U.S. than in Canada (Tiemens, 1978)

since researchers there analyze these factors with more frequency when preparing their political candidates for television debates as well as televised public appearances.

If one were to compare U.S. and Canadian televised debates the difference would be all too obvious and hence would speak for itself. The U.S. debates are very structured and sterile in nature with little or no confrontation occurring whereas the Canadian debates are vigorous and verbose in nature. Time allotment for each candidate is strictly adhered to in U.S. debates and the camera is usually focused only on the candidate who is speaking at the time. Canadian debates are quite the opposite with time allotments rarely abided by and the camera often depicts two candidates reacting to each others comments.

By revealing this type of quality information, through the PEAC System, the production of educational messages would be enhanced and ultimately provide the opportunity to increase the viewers' awareness and learning. Without doubt, such devices will be utilized more frequently in the future for research purposes such that the giant television broadcasting corporations seriously analyze the benefits of producing quality, information and educational television for all its viewers.

Hopefully, the results of this study will assist in the

formulation of educational messages when developing material for all aspects of television. Through such efforts television can improve its role as an educational tool in the quest of raising the consciousness level of all sectors of the viewing population.

REFERENCES

Argyle, M. & Kendon, A. (1967). The Experimental Analysis of Social Performance. In Berkowitz, L. (ed). Advance in Experimental Social Psychology, 3. New York: Academic Press.

Argyle, M. (1975). Bodily Communication. New York, New York: International Universities Press Inc.

Baggaley, J.P. & Duck, S. W. (1975). Experiments in ETV: Further Effects of Camera Angle. Educational Broadcasting International, 8 (4).

Baggaley, J.P. & Duck, S. W. (1976). Dynamics of Television. Farnborough, Saxon House: Lexington Books.

Baggaley, J.P., Ferguson, M. and Brooks, P.(1980). Psychology of the TV Image. New York: Praeger Publishers.

Baggaley, J.P. (1982). TV Production Research and Media Development. Media in Education and Development, 3.

Baggaley, J.P. (1986). Formative Evaluation of Educational Television. Canadian Journal of Educational Communication, 15.

Borgatta, E.F. & Bales, R.F. (1953). Interaction of Individuals in Reconstituted Groups. Sociometry, 16.

Bretz, Rudy (1953). Techniques of Television Production. New York: McGraw-Hill.

Coldevin, G.O. (1976). Comparative Effectiveness of TV Production Variables. Journal of Television, 2(3).

Coldevin, G.O. (1981). Experimental Research in Television Message Design: Implications for ETV. PLET, 18(2).

Davis, Leslie K. (1978). Camera Eye-Contact by the Candidates in the Presidential Debates of 1976. Journalism Quarterly.

Duck, S.W. (1974). Frequency of Eye Contact as a Function of Stress and Strength of Relationship. IRCS Research on Psychology, 2.

Duck, S.W. & Baggaley, J. (1975). Experiments in ETV: Effects of Camera Angle. Educational Broadcasting Intl., 8.

Ellery, J.B. (1959). A Pilot Study of the Nature of Aesthetic Experiences Associated with Television and its Place in Education. Wayne State University. Detroit.

Guba, E., Wolf, W., DeGroot, S., Knemeyer, M.,VanAtta, R., and Light, L. (1964). Eye Movements and TV Viewing in Children. AV Communication Review, 12.

Hovland, C.I., Janis, I.L. and Kelly .H.(1953). Communication and Persuasion. New Haven, Yale University Press.

Keppel, Geoffrey & Saufley, William H. Jr. (1980). Introduction to Design and Analysis - A Student's Handbook. New York: W.H. Freeman & Company.

Leik, R.K. (1965). Type of Group and Probability of Initiating Acts. Sociometry, 28.

Mandell, L.M. & Shaw, D.L. (1973). Judging Camera Angle and Bodily Activity. Journal of Broadcasting, 17(3).

McCain, T.A., Chilbert, J. & Wakshlag, J. (1977). The Effects of Camera Angle on Source Credibility and Attraction. Journal of Broadcasting, 23(3).

McMillan, James H. & Schumacher, S. (1984). Research In Education - A Conceptual Approach. Toronto, Ontario: Little, Brown and Company.

Merritt, Bishetta D. (1984, November). Jesse Jackson and Television: Black Image Presentation and Affect in the 1984 Democratic Campaign Debates. Paper presented at the 70th Annual Meeting of Speech Communication Association, Chicago, Illinois.

Messaris, P., Eckman, B. & Gumpert, G. (1979). Editing Structure in the Televised Versions of the 1976 Presidential Debates. Journal of Broadcasting 23(3).

Metallinos, N. (1975). Composition of the TV Picture: Some Hypotheses to Test the Forces Operating with the Television Screen. Educational Communication and Technology Journal, 27.

Metallinos, N. and Tiemens, R.K. (1977). Asymmetry of the Screen: The Effect of Left Versus Right Placement and Television Images. Journal of Broadcasting, 21(1).

Nickerson, Rand (1979, June). The Formative Evaluation of Instructional Television Programming Using the Program Evaluation Analysis Computer (PEAC). In J. Baggaley (ed). Experimental Research in Educational Television. Newfoundland: Memorial University of Newfoundland.

Schramm, W. (1977). Big Media - Little Media. Beverly Hills, California: Sage Publications.

Siegel, S. (1956). Nonparametric Statistics For Behavioral Sciences. New York: McGraw-Hill Book Company Inc.

Tiemens, R.K. (1970). Some Relationship of Camera Angle to Communicator Credibility. Journal of Broadcasting, 14.

Tiemens, R.K. (1978). Television's Portrayal of the 1976 Presidential Debates: An Analysis of Visual Content. Communications Monographs, 45.

Tuckman, Bruce W. (1972). Conducting Educational Research. New York: Harcourt Brace Jovanvich.

Wurtzel, A. H. and Dominick, J.R. (1971-72). An Evaluation of Television Drama: Interaction of Acting Styles and Shot Selection. Journal of Broadcasting, 16.

Wurtzel, A.H. (1979). Television Production. New York: McGraw-Hill.

Zettl, H. (1968). The Study of Television Aesthetics. Educational Broadcasting Review, 2, P. 36-40.

Zettl, H. (1984). Television Production Handbook. Belmont, California: Wadsworth Publishing Company.

APPENDIX I

Pretest

TV DEBATE STUDY:

The first 3 questions relate to the English TV debate which took place in October 1988 between the Canadian party leaders, Ed BROADBENT, Brian MULRONEY, and John TURNER. Please answer the questions based on your knowledge of the debate, whether you saw it or not.

1. Which of the three party leaders do you feel won the debate? (Check one name only):

   [3] BROADBENT [4] MULRONEY [16] TURNER [2] Unsure

2. Which of the three party leaders do you feel came 2nd in the debate? (Check one name only):

   [10] BROADBENT [9] MULRONEY [3] TURNER [3] Unsure

3. Which of the three party leaders do you feel came 3rd in the debate? (Check one name only):

   [10] BROADBENT [10] MULRONEY [3] TURNER [2] Unsure

* What is your hand-unit number?
(Look on the lower edge of the unit) [ ]

APPENDIX II

Posttest

TV DEBATE STUDY:

* What is your hand-unit number?
  (Look on the lower edge of the unit) [ ]

Once again, the next 3 questions relate to the English TV debate, which took place in October 1988 between the Canadian party leaders, Ed BROADBENT, Brian MULRONEY, and John TURNER. Please answer the questions based on your knowledge of the debate, whether you saw it or not.

4. Which of the three party leaders do you feel won the debate? (Check one name only):

   [3] BROADBENT [4] MULRONEY [16] TURNER [2] Unsure

5. Which of the three party leaders do you feel came 2nd in the debate? (Check one name only):

   [7] BROADBENT [9] MULRONEY [6] TURNER [3] Unsure

6. Which of the three party leaders do you feel came 3rd in the debate? (Check one name only):

   [13] BROADBENT [9] MULRONEY [1] TURNER [2] Unsure

7. Do you feel that TV leaders' debates are an important part of election campaigns?

   [ ]Not important [ ]Fairly important [ ]Very important

8. How did you vote in the recent Canadian election?

   [ ]PC [ ]Liberal [ ]NDP [ ]Other [ ]Wouldn't Vote

9. How did you feel about the result of the recent Canadian election?

   [ ] Pleased [ ] Didn't care [ ] Unhappy

10. If a Federal Election were held today, for which party would you vote?

[ ]PC [ ]Liberal [ ]NDP [ ]Other [ ]Wouldn't Vote

11. Which of the three party leaders would you currently prefer to see as Prime Minister of Canada?

[ ] BROADBENT [ ] MULRONEY [ ] TURNER [ ] Unsure

12. Would you please indicate your age?

[ ]18-24 [ ]25-30 [ ]31-35 [ ]36-40 [ ]41-45 [ ]46+

13. Would you please indicate your sex?

[ ] Male [ ] Female

WITH THANKS!

APPENDIX III

Shot Coding Scheme

There are three discussions in each round, for a total of three rounds, and each candidate appears twice in every round. The sequence of the candidates appearance in each of the three rounds is as follows:

Debate 1	-	Mulroney	vs	Turner
Debate 2	-	Turner	vs	Broadbent
Debate 3	-	Mulroney	vs	Broadbent

The codes for the various shots, as the candidates appear, have been numbered from one to twelve and are as described below:

A) M
T

SHOTS: 1 - Speaking Sequences
2 - Non-Verbal Reaction Sequences

Mulroney is in the background and Turner is in the foreground. If Mulroney is speaking the code is (1) and if he is displaying non-verbal reactions it is (2).

B) T
M

SHOTS: 3 - Speaking Sequences
4 - Non-Verbal Reaction Sequences

Turner is in the background and Mulroney is in the foreground. If Turner is speaking the code is (3) and if he is displaying non-verbal reactions it is (4).

C) B
T

SHOTS: 5 - Speaking Sequences
6 - Non-Verbal Reaction Sequences

Broadbent is in the background and Turner is in the foreground. If Broadbent is speaking the code is (5) and if he is displaying non-verbal reactions it is (6).

D) T
B

SHOTS: 7 - Speaking Sequences
8 - Non-Verbal Reaction Sequences

Turner is in the background and Broadbent is in the foreground. If Turner is speaking the code is (7) and if he is displaying non-verbal reactions it is (8).

E) B
M

SHOTS: 9 - Speaking Sequences
10 - Non-Verbal Reaction Sequences

Broadbent is in the background and Mulroney is in the foreground. If Broadbent is speaking the code is (9) and if he is displaying non-verbal reactions it is (10).

F) M
B

SHOTS: 11 - Speaking Sequences
12 - Non-Verbal Reaction Sequences

Mulroney is in the background and Broadbent is in the foreground. If Mulroney is speaking the code is (11) and if he is displaying non-verbal reactions it is (12).