Communications
Canada

TECHNOLOGICAL TEST AND SOCIAL EFFECTS OF REMOTE CONFERENCE SYSTEMS

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#67.

CARLETON UNIVERSITY

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TITLE: Technological Test and Social Effects of Remote Conference Systems

CONTRACT: OSU4-0135

DEPARTMENT OF COMMUNICATIONS CONTRACT NO. OSU4-0135

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Department of Psychology
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Introduction

The following pages summarize the work done under this Contract by the principal investigators, their assistants, and the personnel of the Wired City Simulation Laboratory at Carleton University. Two studies are reported in detail, but before these sections are presented some introductory comments are in order concerning the problems investigated under the contract.

The initial statement of purpose involved three related study areas: (1) the effects of self-monitoring in teleconference situations; (2) the effects of monitor size on social-psychological processes participants in teleconferences; (3) the effects of other "hardware" characteristics on the teleconference process.

A study pertaining to area (1) has been completed, and the description of its procedure will follow. The exploratory work conducted in relation to parts (2) and (3) indicated that no useful results would come from following the initial plan as laid down in the contract proposal, and that the initial statements were unrealistically specific. The primary reason is that the physical limits of the equipment available in the Wired City Laboratory did not permit variations of magnitude which would yield significant effects relevant

either for the development of that installation nor to the Department of Communications. More will be said about this in the summary of this report. For the moment, however, it is sufficient to state that an alternative conception of the approach was developed, one in which the teleconference context employed was one which was oriented to problems of teaching. This, of course, is just one of many teleconference contexts, but it was adopted because the basic question asked was (a) relevant for the general aims of the contract concerning the relationship between the user and communications technology, and (b) relevant for the aims of the Wired City Laboratories as they became identified with the Educational Telecommunications Project. Our basic question which amounted to a revised version of the second and third questions was: "In the teleconference learning context, what are the effects of the learner's feelings of control over the source of his information (i.e. the teacher) on his evaluation of the source, and on his evaluation of the teleconference context itself?"

In this report, attention will first be turned to the attempt to answer this question.

I. Audience Control over Information Source and Attitudes Toward the Source and Medium of Communication.[1]

Introduction

This study examines the effect of perceived control on the acceptance of televised instruction. Specifically, this experiment tests the effect of compliance or non-compliance of a lecturer to respond to suggestions on learner attitudes towards the lecturer and towards the medium of television used by the lecturer.

The rise of student enrolments in the '50s and '60s, along with rapid developments in communication technology, led to considerations of methods of improving instruction and making good instruction available to greater numbers. These methods included the use of teaching machines, programmed instruction, CCTV and other instructional technology. Although modern communications developed for purposes of entertainment have produced vast educative changes, our educational institutions have failed to use the same technology effectively. Some remote television teaching experiments have been successful, others failures. Classrooms have been equipped with audio-visual equipment that is seldom used. Now, in the '70s, the introduction of broadband communications has inspired a new awareness of its role in education.

The "Wired City"

The implementation of a Wired City Simulation Laboratory at Carleton University (Coll, 1973) has resulted in a program of humanistic studies focussing, in part, on effects of "hardware"

characteristics on psychological variables. It has also resulted in attention to the use of modern communications technology in the improvement and expansion of learning processes. Personnel of the recently established Educational Communications Project hope that by blending an awareness of past inadequacies with the current state of knowledge of communications technology, along with current understanding of educational psychology, they may realize significant advances in the applicability of educational technology. (Educational Communications Project, 1974).

Televised Instruction

CCTV has been one of the most frequently suggested methods for improving education. Inevitably, the use of CCTV raises two questions. First, do students taking courses by CCTV learn as much? Secondly, do their attitudes compare with those of students receiving regular classroom lectures? In attempts to answer the first question most studies have found no significant differences in the amount learned when comparisons are drawn between T.V. and non - T.V. sections. (Davis, R.N., 1966). Student attitudes toward CCTV, however, tend to be influenced by the interaction of a number of variables.

Many students appear to enter the CCTV experience with a negative attitude toward the T.V. which gradually becomes more positive with experience as they come to accept it. As a part of the educational process other factors such as the lecturer and quality of instruction probably become more important

determinants of student attitudes. A student's acceptance of instructional T.V. will be a function of his attitudes towards the medium and the material transmitted, and towards the learning environment. In this sense, the course and instructor are important determinants of attitudes towards the medium. If a factor then can decrease negative attitudes that have been aroused toward the instructor or content of the lecture it should likely be instrumental in decreasing negative attitudes toward the medium of communication. One such variable may be the perception of control over the environment. It may be hypothesized that if a student feels he can originate behaviour to change the situation, i.e., effect an improvement in content or delivery, he will view the environment (instructor and/or medium) with a more positive attitude.

Attitudes to Instructional Television

In studies of attitudes towards instructional T.V. some have found television "cold, impersonal, remote"; others, "intimate, personal, close, monotonous" (Carpenter, 1958). In all these reactions it was felt that students were assigning qualities to television which should rightly be assigned to the instruction itself. The "medium" becomes the "message".

For televised as well as face-to-face instruction, three variables were found to be of prime importance - teacher, motivation and participation. Investigation of these variables will lead to improvement in televised instruction. Results of

studies at the University of Houston (Evans, 1958) show that if students have a basically negative attitude toward a subject matter area or an instructor they will apparently often displace this attitude towards the T.V. Expressed negative feelings toward television as an instructional medium may often be based on factors not really related to whether or not the course is presented on television. Studies by Greenhill (1958) also found that acceptability of the system is intermixed with attitudes to the course, instructor and method, with the instructor being the crucial variable. Even the use of visual aids was not considered an adequate substitute for the integrating and stimulating role of the lecturer. Goggin (1958) concluded that the ideal T.V. teacher should be proficient and enthusiastic; warm and out-going; adaptable and flexible; creative or resourceful; courageous and confident.

It has been found that motivation plays a greater role in televised instruction than in direct teaching and some reasons have been hypothesized. Grosslight (1958) suspected that it is not the physical distance but the distance perceived by the student that is important, i.e., the psychological distance. The problem of psychological distance in televised instruction would seem an important one for investigation. It may be expected that perception of control over the environment would reduce the psychological distance, thus increasing the motivational value.

The problem of participation is of considerable importance. One of the greatest criticisms of televised teaching is lack of feedback, the inability to respond, hence, a lack of control.

Generally, it has been found that physical variables such as quality of picture and sound have little effect on learning, given instruction which is meaningful and relevant. (In a pretest of a study of the effects of physical variables, such as image size, on social influence in a mediated two-way discussion, there were indications that these variables were ineffective in the prescence of strong motivation and a high degree of participation).

The Perception of Control

The three variables considered important to the educational process - instructor, motivation, participation - may be affected by another variable - perceived causation. A person may see another's behaviour as caused internally (self-motivated) or as externally caused (by influence or coercion). If person A attempts to influence the behaviour of person B and is successful, he may perceive B's compliance as attributable to his external influence. Or he may perceive that his influence attempt was not really affective but that Person B complied because he wished to do so, i.e., his behaviour was internally determined (Decharms, 1968).

Thibaut and Riecken(1955a) studied this interesting distinction between internally and externally perceived locus of

causality, relating perception of social causality with differential status. They confirmed that a higher status person was more often seen as complying with an influence attempt for internal reasons while a lower status person was seen as complying for external reasons. Also, persons seen as complying for internal reasons were liked better than those seen as complying for external reasons. These results show that the effects of a behavioural act depend on whether it is perceived as being internally or externally motivated and that there is a relationship between this perception of locus of causality and the liking - or acceptance of another.

Thibaut and Riecken(1955b) explored this relationship further and proposed that to the extent that one can exercise control over his social environment, that environment is neither threatening or frustrating. Simple deductions resulting from this proposition include the expectations that (1) to the extent that an aggressive act causes a behaviour change in another, the tendency to reject the latter will be reduced; (2) if the criticism is resisted and no behaviour change occurs, the resistor will be rejected more strongly than he would have been initially.

This relationship between control and acceptance was investigated in an unpublished study by Thibaut, Coules and Robinson (1955). Subjects evaluated a lecturer whose lecture was designed to arouse hostility. Criticisms were jotted down by subjects during the lecture and in two treatment conditions they were given to the lecturer. In one condition the lecturer agreed to follow

the suggestions implied in the criticisms, in the other he would not follow the suggestions. In the third condition the criticisms were not shown to the lecturer. He then resumed his talk which was less offensive and more factual. Results showed that in the treatment where presumably the perception of control was induced only 37% changed to more negative attitudes towards the lecturer. Where the subjects did not perceive themselves effective in controlling the situation, 85% of them changed toward rejection of the lecturer. Finally in the treatment where the criticisms did not reach the target, an intermediate proportion (56%) of subjects showed change toward rejection. Thus it is suggested that when a person perceives his aggressive act as effective in controlling the social environment, there is less likelihood that he will reject it than when he perceives his actions as ineffectual. It may be inferred that perception of control is likely to decrease rejection of the social environment.

A study by Decharms and Bridgman (1961) examined the feelings of the student toward a teacher when the student feels that he can have some control in determining the course of events in the classroom situation. Compliance by the teacher signifies to the student that he can originate behaviour to change the situation and was hypothesized to lead to changes in the students' perception of the teacher. Significant results showed that when the lecturer clearly complied to the request he was liked better than when there was no compliance. The results demonstrate important effects of compliance on the part of the lecturer on the behaviour of the group members. Such

compliant leadership behaviour induces inferences concerning the leader's competence and motivation and arouses motivation in the students. A leader who verbalizes his willingness to comply may have a strong influence over the students' morale even if he does not show clearly that he is able to comply. The design was similar to that of Thibaut, Coules and Robinson (1955) but tape recorded lectures were used effecting greater control. The subjects were to listen with the two aims of learning the material and evaluating the lecturer, who was present behind a one-way screen. During the course of the experiment, the subjects were informed that they were not performing well; then they were asked for suggestions to be given to the lecturer which might help them to perform better. The subjects arrived at a group decision to ask for a summary of the lecture. The lecturer responded to this request immediately, and depending on the group, he verbalized either compliance or non-compliance. This constituted the independent variable of verbal compliance on the part of the lecturer. A second independent variable of behavioural compliance was studied for its interaction with the first. Significant changes were attributable to the experimental manipulations on all of the dependent measures.

The present experiment was designed to investigate the effect of compliance or non-compliance with suggestions for improvement of presentation by a lecturer on television, on

attitudes towards the medium of communication. Compliance on the part of the lecturer was expected to lead to changes in the students' perception of him. Based on the findings that attitudes towards instructor or content become the attitudes towards "instructional television", compliance or non-compliance should also vary the students' acceptance of the medium.

It is suggested that the finding of significant differences in attitude toward the medium of communication resulting from perception of some control to change the situation has implications for studies investigating variables which will lead to improved attitudes towards televised instruction. Perception of control can mean greater participation and increased motivation and thus increase liking for the social environment, i.e. instructor and medium.

The hypotheses tested were:

1. Verbal compliance by the lecturer to try to improve his presentation will result in a smaller proportion of subjects showing a change toward rejection of the lecturer in post-lecture ratings (as compared to first impression ratings), and less negative attitudes toward the medium of communication - television.

2. Verbal non-compliance to improve his presentation will result in a greater proportion of subjects showing change to rejection of lecturer and more negative attitudes towards the medium.

3. The group for which the lecturer does not receive suggestions will show a moderate increase towards rejection of the lecturer as aroused by the negative characteristics of the lecture only.

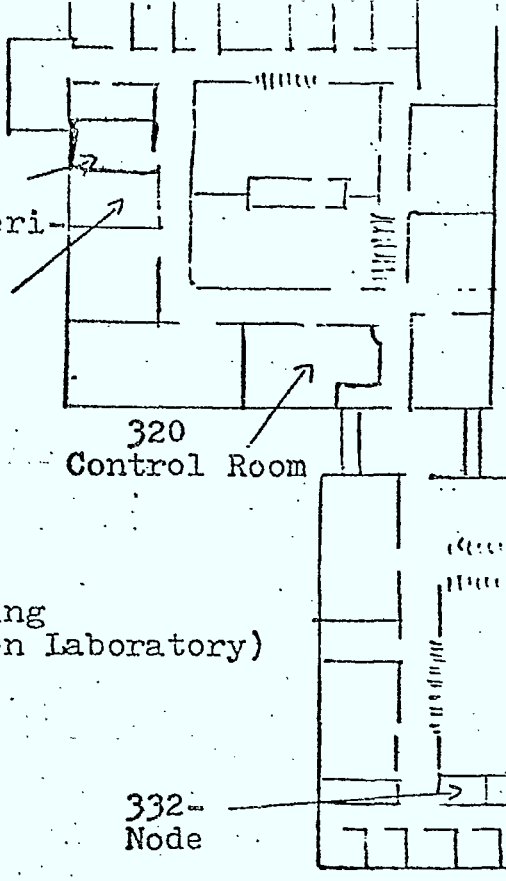
4. Attitudes towards the medium will correspond to attitudes towards the lecturer after the lecture.

METHOD

Overview:

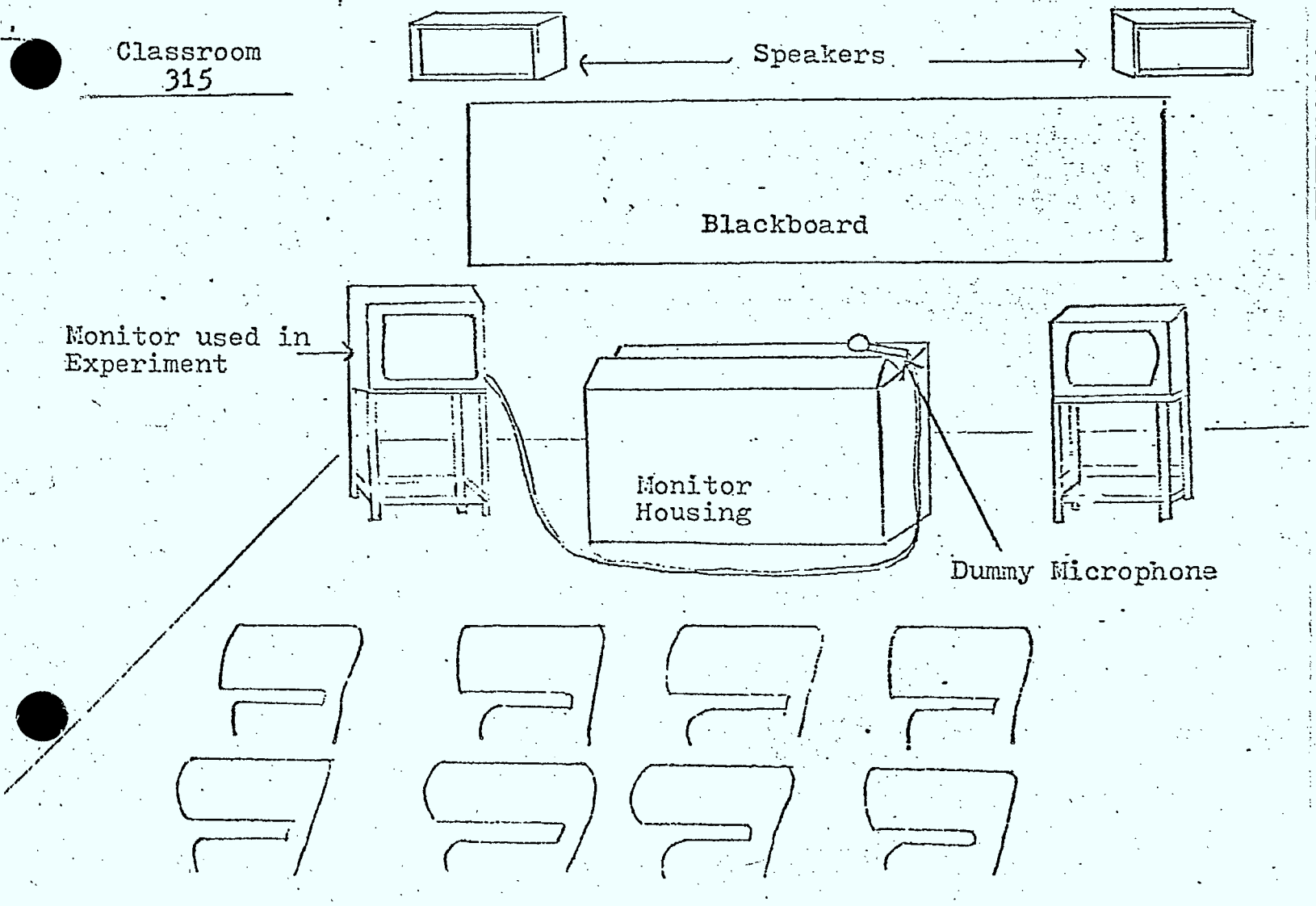
In order to explore the effect of compliance or non-compliance upon attitudes towards the medium the following design was developed. A videotaped lecture was given to subjects in a classroom in the Wired City Simulation Laboratory using a 21" teaching console situated at the front of the room. Picture and sound were controlled by the technologist in the Control Centre down the hall (see diagram A & B). A "dummy" microphone was available to the experimenter for "apparent" communication with the lecturer. Subjects were led to believe that the lecture was being presented live by a visiting lecturer. The study was introduced as part of an on-going program of research in education and technology between Carleton and the Department of Communications; this being one study to help evaluate the effectiveness of a lecturer using the medium of television. The complete "script" used by experimenter in all conditions appears in Appendix 1.

The taped lecture consisted of 3 parts: 1. introduction of the lecturer, who gave a brief outline of his background;



FLOOR PLAN
of third level of
C.J. MacKenzie Building
(Wired City Simulation Laboratory)

Classroom 315



2. a 20-minute lecture designed to arouse negative feelings based on monotony, lack of clarity, boredom; and 3. a final 10-minute lecture, designed to be a slight improvement in content and style, but still in the direction of mediocrity. Use of the videotape allowed for good control across the three conditions - the only variation being the manipulation at the beginning of the 10-minute lecture.

The independent variable was the lecturer's agreement or lack of agreement to try to improve after receiving comments jotted down by the subjects during the first part of the lecture. The dependent variables were attitudes towards the instructor, before and after the manipulation, and attitudes toward the medium of communication, television.

Subjects.

Three sections of 12 subjects each were drawn from an Introductory Psychology class in response to an appeal for subjects made in the Resource Centre. Experimental credit was given for participation.

Procedure

Two sections were subjected to the manipulation, the third served as a control group.

The experimenter introduced the study to the students and announced that she would leave to introduce the guest lecturer on the television. (An assistant was used to remain with the students at this point and also to deliver students' comments to the lecturer

later). While out of the room, the experimenter was seen briefly on the television screen with the lecturer (previously taped). The experimenter returned to the room while the lecturer was giving a brief outline of his background. This manoeuvre was designed to create the atmosphere of a live lecture.

The lecturer's background was planned to establish his status (moderate) and avoid a possible confounding effect. He described some experience in social psychology, leaving school to spend several years in business then returning to the educational environment and psychology, resulting in his visiting colleges and giving lectures. He was addressed as "Mr." to make his background ambiguous enough to allow students to make their own assessment of his status.

After the introduction the lecturer was asked to take a short break and the first impression questionnaire was administered. The lecturer was then asked, over the mike, to go ahead with the lecture. The first part of the lecture consisted of basic topics in psychology - attitude change, cognitive dissonance, Milgram's experiments on obedience - presented in a rather loose, disorganized form, in a flat, monotone voice, with numerous pauses; generally slow and tedious. Subjects were given an opportunity to jot down brief comments about the lecturer with respect to content, delivery, etc. and suggestions for improvements. The comments were collected at the end of this part of the lecture. In the two conditions of compliance (Condition 1) and non-compliance (Condition 2), the assistant left the room with the

comments and subjects were told that they would be delivered to the lecturer to read when he wishes. In the third condition (control) the comments were kept in the room "to be used for research purposes".

Subjects answered three questions about the communication system in order to allow time for the lecturer to look at the comments. These questions were also used to check for negative attitudes towards the lecturer across all conditions before the manipulation. When the videotape came on, in the first two conditions the lecturer was seen looking through some papers. He stated that he had been looking over their comments which seemed to suggest some changes were desired and,(Condition 1), although it would be difficult to change his lecture and style at this stage he would try to improve his presentation; (Condition 2), having given the lecture several times, he was unable to change his style at this stage. In Condition 3 he did not have any papers but simply said he would continue with the lecture.

The second part of the lecture was given which consisted of a discussion of conformity. The lecturer was thanked and subjects were given the post-lecture ratings to complete. In each condition, half of the subjects were given the lecturer rating first, half were given the medium rating first, to provide an opportunity to examine the effects of order.

MEASURE

The assessment of the lecturer consisted of a Personality Rating Scale similar to that used by Thibaut and Riecken (1955b).

It was designed to measure the degree to which a subject accepts an instigator of hostility (in this study, a boring lecturer) as a likeable, admirable person. This Acceptance scale is clearly evaluative in nature, the poles of each item being deliberately loaded with terms that have positive and negative social values, eg., "honest - deceitful", "democratic - snobbish", "clear - thinking - muddleheaded", and so forth. Some of the items measured the perceived strength of the lecturer to withstand influence, to resist suggestions to change. The actual form of each item was that of a single question, followed by six alternative responses representing degrees of departure from the extremes. The positive end of the pole was scored 1 - 3, the negative end, 4 - 6. A box labelled "not enough information to judge" was provided in an effort to avoid receiving a lot of invalid responses. The rating scale was administered at the beginning of the experiment to obtain a first impression assessment and again after the manipulation. The two scales would provide a measure of change toward acceptance or rejection of the lecturer.

To test attitudes toward the medium, the Semantic Differential developed by Osgood and Associates (1957), was used as the measuring instrument. This instrument has been highly validated, and has yielded considerable information about effective responses to a wide variety of stimuli. An adaptation of this instrument by Paul Guild (Educational Communications Project, 1974) had been used to tap such responses to a system as a means for communicating with another person. Additional scales, thought to

be particularly appropriate but not found on the list of scales developed by Osgood were included. Subjects could check one of five divisions scored positive - negative (1-5) with "3" being a neutral position.

A cognitive instrument tested by Champness (November, 1972) was administered along with the Semantic Differential to obtain opinions about the medium as useful and satisfactory for various purposes. Five of the scales were given at the beginning of the experiment with the first impression rating to obtain pretest opinions. A question was included to determine previous experience with instructional television. As a check on the manipulation, subjects were asked on the final questionnaire if they felt the second lecture was any different and if so, if better or worse. The complete set of questionnaires appears in Appendix 2.

RESULTS

The three conditions are designated as Compliance (Condition 1), Non-Compliance (Condition 2). The three main sources of information were a) the first impression rating of the lecturer (L1), b) the post-experimental rating of the lecturer (L2), and c) the rating of the medium (M). A measure of acceptance was obtained on these questionnaires in terms of the proportion of positive responses, i.e., responses of 1 - 3 on L1 and L2, and of 1 - 2 on M. The difference in acceptance between L1 and L2 gave a measure of change which was compared across the three conditions. Means for each subject were obtained on the 3 measures to produce a grand mean for each measure.

Means and variances were calculated for individual adjective pairs. Attitudes towards the medium were divided into 3 categories of strength a) Strongly b) Moderately c) Slightly. Certain items were found to be highly agreed upon by subjects in each condition. From certain scales an evaluative factor was summed and analyzed for both lecturer and medium.

Some exploration was made of the order effects of the post-experimental measures and their correlations.

Manipulation Checks

Following the first part of the lecture, before the manipulation, it was expected that subjects in all conditions would feel equally negative towards the lecturer. Two questions were asked as a check on this effect and, also, to allow time for the criticisms to be delivered to the lecturer. In answer to the question whether they thought the communications system was a distraction, the following means were derived from scores of 1 - 5, representing NOT AT ALL ----- A GREAT DEAL:

Condition 1	-	2.1
Condition 2	-	3.3
Condition 3	-	3.5

Asked if they would like to have more lectures on television, all were quite negative in all conditions, indicating that the taped lecture did apparently arouse negative feelings as planned.

A check on the manipulation was made in the question "Did you feel the second lecture was different?" In all conditions, as many subjects seemed to feel it was better as those who felt it was no different. Three subjects in the compliance condition expressed the opinion that the lecture improved as a result of the lecturer's agreement to try to follow their suggestions. The second part of the lecture apparently was ambiguous enough to correspond to the students' own perception.

Acceptance - Rejection

Responses on the three questionnaires were scored positive or negative and the proportion of positive responses were recorded for each subject as a measure of acceptance (Appendix 3). A measure of change was calculated by subtracting scores for each subject in the L2 rating from scores in the L1 rating. The means and standard deviations for these measures of change appear in Table 1. A Kruskall-Wallis one way analysis of variance was conducted on the measure of change.

Table 1

Means of the Measures of Change in Ratings of Lecturer

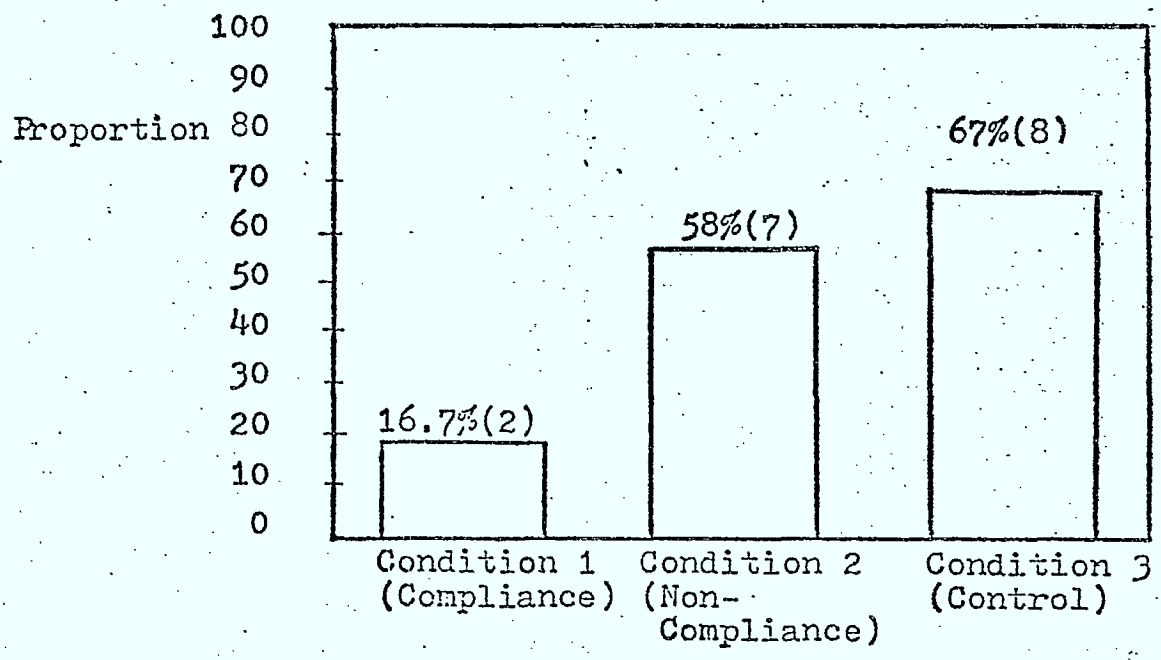
Compliance	Non-Compliance	Control
$\bar{X}$ = 0.059	$\bar{X}$ = -0.024*	$\bar{X}$ = -0.116
S.D. = 0.168	S.D.= 0.201	S.D. = 0.198

* A - sign indicates a change in a negative direction; a + sign, a change in a positive direction.

Since the direction of the difference was predicted in advance, a one - tailed test of significance was used. The observed value of H (4.3) fell just short of the critical value of 4.6 required for significance at the .05 level.

Table 2 illustrates the proportions of each group changing to rejection of the lecturer. A χ^2 test on the numbers of subjects changing to rejection the lecturer produced significance at the .025 level on a one-tailed test ($\chi^2 = 6.97$, df = 2 $P < .025$).

Table 2: Proportion of Subjects Changing to Rejection of Lecturer Following the Manipulation (Based on Measures of Acceptance)



Ratings of the medium after the lecture suggest a trend to greater acceptance by the Compliance group (Condition 1) than by the other two groups. This corresponds to a similar degree of acceptance of the lecturer by the same group, although the medium seems to suffer greater rejection than the lecturer across all conditions as observed in Table 3.

Table 3: Proportion of Subjects Accepting Lecturer and Medium After Manipulation.

	Compliance (1)	Non-Compliance (2)	Control (2)
L2	83%	58%	66%
M	33%	16.7%	16.7%

A comparison was made of the evaluation assessment of instructional television after the manipulation with the first impression assessment. An increase in the number of subjects indicating negative views was evident in all conditions.

Analysis of the means for each measure

Means were calculated for each subject on each of the measures, Lecturer 1, Lecturer 2 and Medium. Positive means for lecturer ratings L, and L2 are those ≤ 3.5. Total sample means of lecturer and medium ratings were computed and are given in Table 4.

Table 4: Total Sample Means for Each Measure

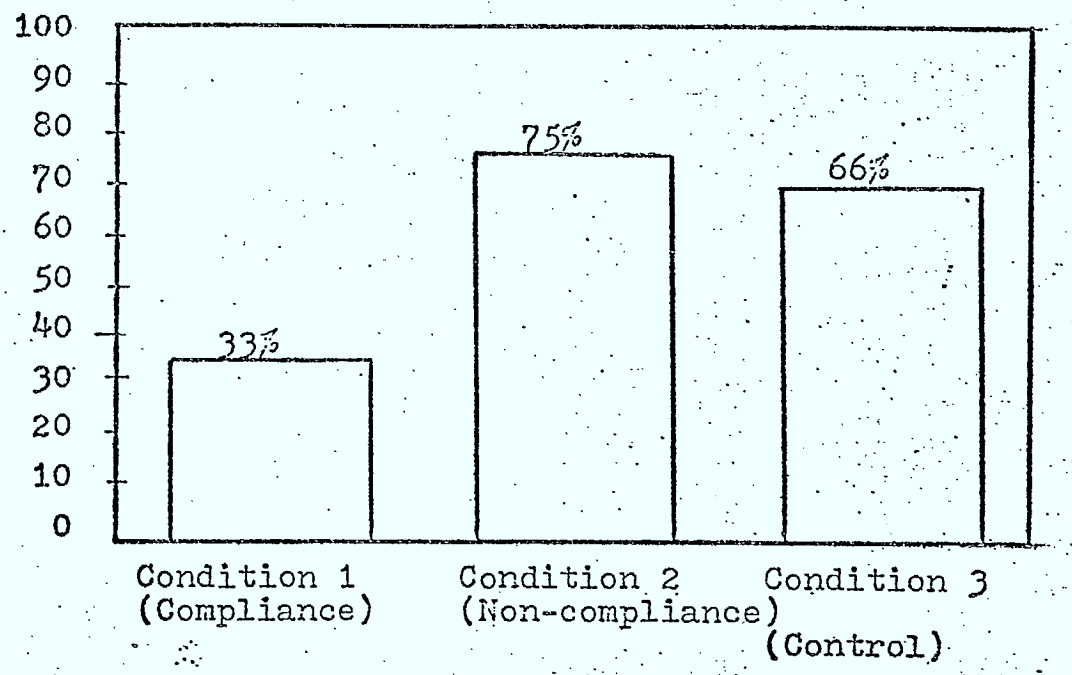
	Compliance (1)	Non-Compliance (2)	Control (3)
L1	3.06	3.35	2.86
L2	2.99	3.39	3.27
M	3.05	3.37	3.46

Note: Increase in magnitude is an increase in negativity. For L1 and L2, 1 - 3 is a positive response, 4 - 6 is a negative. For M, 1 - 2 is a positive response, 3 is neutral, 4 - 5 is negative.

The small differences between sample means for L1 and L2 faintly suggest a change to a more positive response in the compliance group and to a more negative response in the other two conditions but these differences (+.07, -0.04, -0.41) were non-significant.

The difference between means for each subject was obtained by subtracting the mean of L2 from the mean of L1. Table 5 shows the proportions of subjects changing to rejection of the lecturer as a difference between means.

Table 5: Proportion of Subjects Changing to Rejection of Lecturer as a Difference between L2 and L1 Means.



Generally, in Tables 2 and 5, Condition 1 appears to change less to rejection of the lecturer. A χ^2 test conducted on the number of subjects changing to rejection based on the means was significant at the .05 level ($\chi^2 = 4.8$, df = 2, $p < .05$) on a one-tailed test.

Analysis of Adjective Pairs

Means and variances were calculated for individual adjective pairs on the three measures. The means for the two

lecturer ratings were graphed for comparison across the three conditions (see Appendix 4, Figure 1 and Figure 2). Separate graphs were plotted for each condition showing the two means for each adjective pair (see Figures 3,4,5, Appendix 4). Those pairs showing a difference of more than 0.5 were circled and listed in Appendix 5. The Compliance group showed a change to more positive attitudes in considering him more flexible, tolerant of criticism, desirable as a friend, firm; and negative about his sense of humour and knowledge of subject (although the latter was still rated positively at 2.5). The Non-Compliance group felt he was considerably more stubborn, less democratic, less desirable as a friend, less tolerant of criticism as well as somewhat less modest and less agreeable. These attitudes are consistent with the expectancies of the hypothesis. The control group expressed a change to negative attitudes in more adjective-pairs particularly in assessing the lecturer as more muddleheaded, cold, lacking assurance, not knowing how to handle students and dull; but were more positive in thinking him firm.

The means for adjective-pairs on the medium rating are graphed in Appendix 6. Attitudes towards the medium were divided into those that were felt strongly $\begin{matrix}\geq 3.6\\ \leq 2.4\end{matrix}$, moderately $\begin{matrix}3.2 - 3.6\\ 2.4 - 2.8\end{matrix}$ or slightly (2.8 - 3.2) for each condition (see Appendix 7). The proportion of adjective-pairs scored negatively are noted in Table 6.

Table 6: Proportion of Adjective Pairs Scored Negatively on Rating of Medium

	Strongly Negative	Moderately Negative	Slightly Negative
Condition 1	62½%	57%	50%
Condition 2	83%	80%	20%
Condition 3	87½%	92%	40%

Subjects showed a high degree of agreement on certain of the 35 dimensions, as defined by a relatively low variance on these items (<.65). In Condition 1 the agreement was on items with positive or neutral means (1 - 3.9); in the other two Conditions subjects were in high agreement on some adjective pairs with negative means (4 - 4.9), eg., insensitive, unsociable, unemotional, uninspiring, cold. (See Appendix 8.) A problem in the use of the Semantic Differential is the difficulty in determining if respondents are demonstrating individual differences in their experiences with the system or simply have different concepts of the adjective descriptors. Both factors may contribute to high variability in certain responses. Some of these adjective pairs (variance >1.25) were warm - cold, interesting - dull, understandable - confusing, informative - uninformative, public - private. One might have expected "interesting - dull" to be of low variance, particularly when the lecture was designed to be dull. High variances in the

scores may have produced the non-significant differences between means. It was possible that favourable and complimentary responses were induced by some respondents attempting to give the evaluation that they perceived as being expected, such as interesting, informative; thus increasing the variance. This type of response disposition has been suggested by Orne, (1962).

Order of Post-Manipulation Measures

In each condition half of the subjects had been given the Lecturer rating before the Medium rating and half were given the ratings in the opposite order. This variation in order seemed to have some effects on acceptance or rejection of medium and lecturer. In the compliance condition acceptance of the medium seemed to be greater when the medium was rated first: 43% acceptance compared to 20% acceptance of the medium when the lecturer was rated first. Conditions 2 and 3 showed no differences in acceptance of the medium.

Acceptance of the lecturer appeared to be greater in Condition 2 (Non-Compliance) when the medium was rated first: 83% compared to 33%, suggesting a possible catharsis effect. When subjects were able to dispel their negative feelings toward the medium the residual hostility was reduced. Table 7 illustrates these effects. It must be noted that the sample size was reduced to approximately 6, thus diminishing the credibility of the results.

Table 7: Effect of Order of Lecturer and Medium Ratings on Acceptance

	Acceptance of Lecturer	
	Lecturer Rated First	Medium Rated First
Condition 1	80% (5)*	86% (7)
Condition 2	33% (6)	83% (6)
Condition 3	66% (6)	66% (6)

	Acceptance of Medium	
	Lecturer Rated First	Medium Rated First
Condition 1	20% (5)	43% (7)
Condition 2	16.7% (6)	16.7% (6)
Condition 3	16.7% (6)	16.7% (6)

* Number of subjects.

Correlation of Lecturer and Medium Ratings

Correlations between lecturer and medium ratings could not be determined with the means of these measures due to the different methods of scoring each (L2 was rated 1 - 6, M was rated 1 - 5). However, the measures of acceptance for these

questionnaires were correlated using Spearman's rank order correlation. The correlation was conducted on the total sample in each condition and then on the portion of the sample which rated the medium first, and the portion rating the lecturer first. The total sample correlations were low: Condition 1, $\rho = 0.34$, Condition 2, $\rho = 0.42$, Condition 3, $\rho = 0.52$ (see Appendix 9). Correlations between the measures were higher when the medium was rated first, (.61, .77, .60) suggesting, that whatever the attitude towards the lecturer, positive or negative, it was dispelled towards the medium first and then the lecturer. When the lecturer was rated first, the correlation was low in Conditions 1 and 2, (-.29, .46). The relatively positive attitudes toward the lecturer by the compliance group do not seem to carry over to the medium. Condition 3, not receiving the manipulation, had high correlations, particularly when the lecturer was rated first ($\rho = .93$). It would seem in this sense that the attitudes expressed toward the medium were the same as those expressed towards the lecturer.

Evaluative Factor

It had been decided to examine the evaluative factor as derived by Osgood (1957) as a measure of attitude towards the medium. The scales which have been found to produce this factor are good - bad (the traditional evaluative factor), fair - unfair, pleasant - unpleasant, successful - unsuccessful (Evans, 1958). Table 8 shows the means of these scales. The means appear to be consistent within each condition and differences shown generally between conditions in previous analyses were evident.

Table 8: Means of the Evaluative Factor for the Medium

Adjective pair	Condition 1	Condition 2	Condition 3
Good - bad*	2.9	3.3	3.3
Fair - unfair	2.7	3.3	3.3
Pleasant - unpleasant	2.8	3.5	3.8
Successful - unsuccessful	2.8	3.0	3.5
Total Means:	$\bar{X}$ = 2.8	$\bar{X}$ = 3.3	$\bar{X}$ = 3.5

* traditional evaluative factor

Positive response = 1 - 2 Negative Response = 4 - 5

Although the acceptance sub-scale of 15 items in the Personality Rating Scale was designed to be evaluative by Thibaut and Riecken (1955b), an evaluative factor for the lecturer had been formed by the experimenter consisting of 5 items felt to be intuitively representative of an assessment of the lecturer and his ability as a teacher. These items were selected to relate closely to those of the evaluative factor for the medium. They measure acceptance as well as resistance and punitiveness.

The means of this evaluative factor suggest the hypothesized

differences between conditions, a slight change in a positive direction in Condition 1, a small change in a negative direction in Conditions 2 and 3 (Table 9), but these differences were non-significant.

Table 9: Means of the Evaluative Factor for the Lecturer

Adjective Pair	Condition 1		Condition 2		Condition 3	
	L1	L2	L1	L2	L1	L2
accepts criticism - intolerant of criticism	3.3*	2.4	3.2	3.8	1.6	2.8
Democratic - snobbish	2.3	2.4	2.9	3.8	1.8	2.3
desirable as friend - undesirable as friend	3.6	2.9	3.3	3.8	2.7	3.4
flexible - stubborn	3.3	2.7	2.9	3.9	2.2	3.3
competent - incompetent	2.4	2.7	3.1	3.3	2.4	3.1
Total Means:	3.0	2.6	3.1	3.7	2.1	3.0

* Positive response = 1 - 3
Negative response = 4 - 6

To summarize, the manipulation of verbal compliance produced a significant difference in the proportion of subjects in that

group rejecting the lecturer, as compared to greater proportions rejecting him in the other two groups. Analysis of the means for the measures produced non-significant results, but a similar differential trend was suggested. The same trend was suggested in attitudes toward the medium but was non-significant, possibly due to more negative initial attitudes toward the medium. An analysis of an evaluative factor for medium and lecturer was suggestive of this trend of a more positive evaluation by the Compliance group. Rating the medium first appeared to result in more favourable attitudes toward the medium by the Compliance group and more favourable attitudes toward the lecturer by the Non-Compliance group. It also seemed to result in a higher correlation between the lecturer and the medium measures.

DISCUSSION

Two previous studies had produced significant effects on verbal compliance on the acceptance of and liking for a lecturer. Such compliance causes the subject to feel he has some control over the environment and he is thus less likely to reject it. This study set out to produce the same effect of verbal compliance or non-compliance on not only acceptance of a lecturer but of the medium of communication - television - used by the lecturer. As attitudes toward television teaching have been found to be the attitudes toward the teacher or content of the lecture it was expected that the manipulation of verbal compliance by the lecturer to improve his delivery would produce greater acceptance of the medium itself.

Attitudes Toward The Lecturer

Analysis of the lecturer ratings, using the measure of acceptance suggest a difference in acceptance of the lecturer between Condition 1 (Compliance), and Conditions 2 and 3 (Non-Compliance and Control). Significant differences occurred in the proportion of subjects changing to rejection of the lecturer after the manipulation (Table 2). These results are reminiscent of the results of Thibaut, Coules and Robinson (1955) whose proportions were 37%, 85% and 56%. The proportions in this study were lower - a possible effect of the lecture itself and/or of the medium.

A measure of change, obtained as the difference in the two lecturer ratings, fell just short of statistical significance between Conditions.

Proportions based on comparison of means also showed a significant difference ($p < .05$) between the compliance condition and the other two groups (Table 5). These proportions were slightly different from those of Table 2 and closer to those obtained by Thibaut, Coules and Robinson (1955). Since they were calculated from the means rather than the "measure of acceptance", these proportions are possibly more empirical. Comparison of total sample means showed no significant differences between conditions, possibly due to high variance.

Examination of individual scales on the lecturer rating revealed more positive attitudes by the Compliance group. The

characteristics of "flexible", "tolerant of criticism" were particularly related to the manipulation. Negative characteristics described by the Non-Compliance group seemed to suggest the effect of non-compliance (stubborn, snobbish, antagonistic, intolerant of criticism).

The significant differences in the proportions of subjects changing to rejection of the lecturer give qualified confirmation to the hypothesis that verbal compliance by the lecturer to try to improve his presentation results in a smaller proportion of subjects changing toward rejection of the lecturer. The descriptive adjectives showing the greatest change add support to the hypothesis.

In most tabulations, the proportions and means of the Non-Compliance group, who were frustrated in their attempt to control the behaviour of the lecturer, were slightly higher than those of the control group. The difference may be a function of a relatively heightened hostility in this group as a result of the lecturer's unwillingness to comply.

Attitudes Towards the Medium

Analysis of the medium ratings showed the same differential effect as with the lecturer (Table 3) but with much lower proportions of subjects accepting the medium. There were slight differences between the grand means of Compliance and Non-Compliance but these were non-significant.

Subjects in all conditions felt the medium to be strongly informative, but impersonal, insensitive, unemotional and uninspiring.

Other characteristics seemed to be affected by the experimental manipulation. The compliance group found the television medium more reliable, fair, cooperative, clear, wise. The other two groups felt it was more formal, unfriendly, unsociable, remote, constrained, rough, unpleasant, disagreeable, foolish, bad.

The adjective - pairs forming the evaluative factor for the medium appear to be representative of these attitudes (Table 8). As has been found by other researchers the "good - bad" scale was itself representative of this factor.

Although there were no statistically significant differences in attitudes towards the medium, the results appear to suggest a differential trend between conditions similar to that found with respect to attitudes towards the lecturer. Attitudes towards the medium were more negative than towards the lecturer, even on the first impression ratings. Studies have found that college students are generally more negative toward instructional television than either elementary students or adults (Schramm, 1960), a possible explanation in this study.
Thibaut and Coules (1952) found in two experiments that subjects showing initial hostility show less change than do initially friendly subjects. This proposition may have been effective in this study resulting in less change in attitudes toward the medium as a result of the manipulation.

Order Effects of the Post - Manipulation Measures

Varying the order of the lecturer and medium ratings appeared to have some effects, although sample size was reduced. Acceptance of the medium was differentially affected for the Compliance group: when the medium was rated first, it was rejected less than when the lecturer was rated first. As the results suggest, those subjects able to originate behaviour resulting in the lecturer's willingness to comply show more post - experimental friendliness. This friendly or positive attitude appears to affect attitudes toward the medium when it is rated first, resulting in greater acceptance of the medium.

The subjects in the Non-Compliance group, whose effort to control was thwarted, were found to demonstrate a possibly heightened hostility toward the lecturer. This hostility was apparently displaced toward the medium when it was rated first, resulting in greater acceptance of the lecturer than when the lecturer was rated first and was the object of the hostility. This is suggestive of a "catharsis"effect. In the context of social communication, the "catharsis" hypothesis is stated as follows: the communication of hostility through overt aggressive behaviour directed toward a (personal) instigator will tend to reduce the residual hostility toward that instigator. (Dollard, Doob, Miller, etal, 1939). It was with this theory that Thibaut and Riecken (1955b) began their investigation of the

relationship between control and acceptance. The "catharsis" effect has been the center of a great deal of controversy as it is difficult to prove that this is actually the reason for the reduced hostility. A hint of such effects resulting from variation of the order of the questionnairs (with only 6 subjects per group) might be a recommendation for further studies in this area.

Comparison of Acceptance of Medium and Lecturer

Since different scoring ranges were used in the scales of the lecturer and medium questionnaires, the means could not be compared. This was an error in the design and should be corrected in any replication. However, it was possible to conduct correlation tests on the measures of acceptance of lecturer and medium.

It was hypothesized that attitudes towards the medium would correspond to attitudes towards the lecturer after the lecture. There was, in this study, little correlation between the measures for the total sample. However, when the samples were divided into those rating the medium and those rating the lecturer first, the correlations between the measures were higher when the medium was rated first. The correlation was significant for the Non-compliance condition. It would appear that attitudes toward the lecturer, particularly when negative, were displaced towards the medium first and maintained for the lecturer rating. When the lecturer was rated first, the correlation was low, particularly for the Compliance group with their

more positive attitudes toward the lecturer. These were not conveyed to the medium.

There is a faint suggestion from these results and from the effects of varying order that attitudes toward the medium correspond to the attitudes toward the lecturer when the medium is rated first. The credibility of this effect is low due to the small sample and the generally negative attitudes toward the medium.

Improvements in Design

As has already been suggested, the design could be improved by using the same-sized scales for the ratings of the medium and lecturer for correlational purposes. Larger samples are recommended for more significant comparison of groups. The manipulation itself may have been a reason for the few significant results. In this study, subjects jotted down comments about the lecturer without knowing that they would be given to him. This may have weakened the manipulation. In the Decharms and Bridgman study (1961) subjects actually had an opportunity to discuss together how the lecture could be improved so that they would learn better and a joint recommendation for the lecturer to summarize was passed on to him. It might be expected that the effect of compliance would be greater under these conditions. Also, a learning test would provide a greater need for improvement and thus more hostility would likely result

from non-compliance.

As some effects of varying the order of the post-manipulation measures were evident, a definite decision would have to be made as to this order. An interesting study would have a condition which would omit the rating of the lecturer and a comparison made of the rating of the medium with other conditions.

SUMMARY

This study explored the effects of perception of control in a mediated learning situation on attitudes toward the lecturer and medium. Preliminary research was cited that suggested the following proposition: perception of control resulting from agreement by a lecturer to follow suggestions of the students is likely to decrease rejection of the learning environment, i.e., lecturer and medium of television used by lecturer.

In the present experiment, the manipulation was the verbal compliance or non-compliance of the lecturer to follow suggestions. The main dependent variables were pre - and post - experimental measures of acceptance of the lecturer and a post-experimental measure of acceptance of the medium.

Analysis showed that the manipulation produced significant effects in the proportions of subjects rejecting the lecturer. Effects based on a comparison of means were non-significant.

Analysis of the acceptance - rejection of the medium were

non-significant but suggestive of a differential trend. Attitudes toward the medium were generally more negative than toward the lecturer.

Further examination of the order of the post-experimental measures and of correlation were suggestive of some possible effect of varying the order.

It may be concluded that some support was given to the hypothesis that compliance on the part of the lecturer will lead to changes in the students' perception of him, specifically, to less rejection. Confirmation cannot be given to the hypothesis that compliance will have a similar effect on attitudes to the medium, although the results showed suggestive trends. The hypothesis that post-experimental attitudes toward the medium will correspond to attitudes toward the lecturer was not confirmed. Results were mildly suggestive of this proposition but more research in this area is recommended.

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APPENDIX 1

Introduction and Remarks to Subjects

(Introduced self and assistant)

E: The study you have volunteered for is part of an ongoing program of research in education and technology between Carleton and the Department of Communications. Referred to as the Educational Communications Project, it emphasizes the basic concern with the processes of communication and the role of these processes in education. Efforts are being made to show that learning processes can be increasingly more effective and stimulating through communications technology. This is one study to help us evaluate the effectiveness of a lecturer using the medium of television. In a moment you will see and hear a lecture on this television by a visiting lecturer. The picture and sound are being controlled by our Technologist in the control room.

I'm going to leave you for a few minutes so that I can introduce our lecturer to you over the television. (Introduction of lecturer and lecturer's remarks about his background. E returns).

Thank you, Mr._____. Before you go on, we'll take a short break to give the students an opportunity to comment on their first impressions.

(Picture off).

Part of this study involves making a first impression of the lecturer - rating him to the best of your ability from what you have seen and heard as well as answering a few questions about your experience with and impressions of instructional TV. Read the instructions carefully. Answer only questionnaire I. Then turn it over on the right side of your desk.

(Questionnaire I completed)

You now have Questionnaire II on which you are to evaluate the lecturer during his lecture. Do not put your names on the paper. We want the comments to be anonymous. I'll ask Mr._____ to continue now.

We are ready, Mr._____.

(Picture on; Lecturer gives 20 minute lecture, ending with - "I am going to take a break now and come back")

Thank you Mr._____.

I'll collect the questionnaire II now.

(Condition 1 and 2) My assistant, _____, is going to take them to Mr._____ so that he may have an opportunity to look at them if he wishes.

(Condition 3) They will be used for our research.

(Give out Questionnaire 3) Now on this 3rd questionnaire would you answer a few questions to evaluate the communications system please.

If everyone has finished the questionnaire please lay it face down on Questionnaire I.

Mr._____ whenever you're ready.

(Picture on)

(Lecturer gives 10 minute lecture).

Thank you, Mr._____, we appreciate your coming to speak to us today. (Picture off).

And now would you complete this final questionnaire (IV) to evaluate the lecturer and the system. Please complete them in the order given.

The Questionnaires

The purpose of this questionnaire is to assess the lecturer you have just heard. On the basis of the information you now have, please rate the lecturer to the best of your ability. The scales are designed to assess feelings and thoughts about the lecturer. There is a box for each item stating "not enough information to judge". Please use it only if you do not have some feeling or expectation about the lecture on that item. Work rapidly through the scales without pausing more than a few seconds on each one and without returning to one you have already completed. Place an X at the point on the scale which you consider most appropriate.

e.g.

good ___:___:_X_:___:___:___ bad not enough information

Please place an X on the scale to correspond to your feeling about the lecturer you have just seen and heard.

								not enough information to judge
modest	___	___	___	___	___	___	conceited	☐
nervous	___	___	___	___	___	___	relaxed	☐ "
dependable	___	___	___	___	___	___	undependable	☐ "
clear thinking	___	___	___	___	___	___	muddleheaded	☐ "
deceitful	___	___	___	___	___	___	honest	☐ "
flexible	___	___	___	___	___	___	stubborn	☐ "
warm	___	___	___	___	___	___	cold	☐ "
knows subject	___	___	___	___	___	___	unfamiliar with subject	☐ "
antagonistic	___	___	___	___	___	___	agreeable	☐ "
decisive	___	___	___	___	___	___	lacks assurance	☐ "
will go far	___	___	___	___	___	___	will not get ahead	☐ "
democratic	___	___	___	___	___	___	snobbish	☐ "
knows how to handle students	___	___	___	___	___	___	doesn't know how to handle students	☐ "
desirable as a friend	___	___	___	___	___	___	no desire to know him better	☐ "
accepts criticism	___	___	___	___	___	___	intolerant of criticism	☐ "
lacks effort	___	___	___	___	___	___	tries hard	☐ "
interesting	___	___	___	___	___	___	dull	☐ "
firm	___	___	___	___	___	___	easily influenced	☐
sense of humour	___	___	___	___	___	___	lacks sense of humour	☐ "
informative	___	___	___	___	___	___	uninformative	☐ "
competent	___	___	___	___	___	___	incompetent	☐ "

Please place an X on the scale to correspond to your feeling about television as an instructional aid.

Television as an instructional aid will be useful to

Improve communication of information

not at all ___:___:___:___:___ a great deal

Improve quality of lectures

not at all ___:___:___:___:___ a great deal

Increase efficient use of class time

not at all ___:___:___:___:___ a great deal

Provide greater information resources

not at all ___:___:___:___:___ a great deal

Diminish importance of instructor

not at all ___:___:___:___:___ a great deal

Have you had a lecture on television before?

yes or no ☐

Evaluation of Lecturer (Please jot down brief comments during the lecture)

DELIVERY

CONTENT

OTHER

SUGGESTIONS FOR IMPROVEMENT

Did you feel the second part of the lecture was any different from the first part? yes or no ☐

If yes,

a) Was it better or worse? ☐

b) Why did it differ?

Evaluation of Communications System

Did you feel that the communications system over which you have just had a lecture was a distraction?

not at all ___:___:___:___:___ a great deal

Would you like to have more lectures on this system?

none ___ some ___ all ___

Can you suggest any improvements in the communication system that you feel would make it more useful, adaptable or informative for purposes like those operative today?

BIPOPLAR ADJECTIVE CHECKLIST

Please place an X on the scale to correspond to your feeling about the communications system over which you have just received a lecture.

relaxed	___:___:___:___:___	uneasy
closed	___:___:___:___:___	open
public	___:___:___:___:___	private
free	___:___:___:___:___	constrained
intimate	___:___:___:___:___	remote
rough	___:___:___:___:___	smooth
slow	___:___:___:___:___	fast
cooperative	___:___:___:___:___	competitive
pleasant	___:___:___:___:___	unpleasant
unsatisfactory	___:___:___:___:___	satisfactory
agreeable	___:___:___:___:___	disagreeable
cold	___:___:___:___:___	warm
meaningful	___:___:___:___:___	meaningless
passive	___:___:___:___:___	active
secure	___:___:___:___:___	insecure
personal	___:___:___:___:___	impersonal
easy	___:___:___:___:___	difficult
hazy	___:___:___:___:___	clear
foolish	___:___:___:___:___	wise
informative	___:___:___:___:___	uninformative
successful	___:___:___:___:___	unsuccessful
untrustworthy	___:___:___:___:___	trustworthy
informal	___:___:___:___:___	formal
friendly	___:___:___:___:___	unfriendly
insensitive	___:___:___:___:___	sensitive
sociable	___:___:___:___:___	unsociable

boring ___:___:___:___:___ interesting

comfortable ___:___:___:___:___ uncomfortable

emotional ___:___:___:___:___ unemotional

confusing ___:___:___:___:___ understandable

good ___:___:___:___:___ bad

unfair ___:___:___:___:___ fair

complicated ___:___:___:___:___ simple

inspiring ___:___:___:___:___ unspiring

unreliable ___:___:___:___:___ reliable

Do you feel that the use of Instructional Television will alter the learning process by:

IMPROVING COMMUNICATION OF INFORMATION

not at all ___:___:___:___:___ a great deal

INTRODUCING ADDITIONAL VIEWPOINTS FROM OTHER "EXPERTS"

not at all ___:___:___:___:___ a great deal

MEETING INDIVIDUAL NEEDS OF STUDENTS

not at all ___:___:___:___:___ a great deal

INCREASING EFFICIENT USE OF CLASSTIME

not at all ___:___:___:___:___ a great deal

HOLDING STUDENTS' ATTENTION

not at all ___:___:___:___:___ a great deal

FACILITATING LEARNING

not at all ___:___:___:___:___ a great deal

PROVIDING GREATER INFORMATION RESOURCES

not at all ___:___:___:___:___ a great deal

DIMINISHING THE IMPORTANCE OF THE INSTRUCTOR

not at all ___:___:___:___:___ a great deal

IMPROVING THE QUALITY OF LECTURES

not at all ___:___:___:___:___ a great deal

Please place an X on the scale to correspond to your feeling about the lecturer you have just seen and heard.

			not enough information to judge
modest	___:___:___:___:___:___	conceited	☐
nervous	___:___:___:___:___:___	relaxed	☐ "
dependable	___:___:___:___:___:___	undependable	☐ "
clear thinking	___:___:___:___:___:___	muddleheaded	☐ "
deceitful	___:___:___:___:___:___	honest	☐ "
flexible	___:___:___:___:___:___	stubborn	☐ "
warm	___:___:___:___:___:___	cold	☐ "
knows subject	___:___:___:___:___:___	unfamiliar with subject	☐ "
antagonistic	___:___:___:___:___:___	agreeable	☐ "
decisive	___:___:___:___:___:___	lacks assurance	☐ "
will go far	___:___:___:___:___:___	will not get ahead	☐ "
democratic	___:___:___:___:___:___	snobbish	☐ "
knows how to handle students	___:___:___:___:___:___	doesn't know how to handle students	☐ "
desirable as a friend	___:___:___:___:___:___	no desire to know him better	☐ "
accepts criticism	___:___:___:___:___:___	intolerant of criticism	☐ "
lacks effort	___:___:___:___:___:___	tries hard	☐ "
interesting	___:___:___:___:___:___	dull	☐ "
firm	___:___:___:___:___:___	easily influenced	☐
sense of humour	___:___:___:___:___:___	lacks sense of humour	☐ "
informative	___:___:___:___:___:___	uninformative	☐ "
competent	___:___:___:___:___:___	incompetent	☐ "

APPENDIX 3

List of Acceptance Quotients Expressed as the Proportion of Positive Responses.

Condition 1 (Compliance)

Ss	L1	L2	Measure of Change	Medium
1	.25	.50	+.25*	.45
2	.75	.90	+.15	.95
3	.78	.87	+.09	.96
4	1.00	1.00	0.00	.97
5	.66	.43	-.23	.15
6	.53	.72	+.19	.10
7	.80	.95	+.15	.35
8	.08	.11	+.03	.41
9	.82	.50	-.32	.08
10	.75	.95	+.25	.13
11	.68	.76	+.08	.32
12	.56	.63	+.07	.62
	$\bar{X}$= .64	$\bar{X}$= .69		$\bar{X}$= .45

* + denotes change in direction of acceptance
  - denotes change in direction of rejection

Condition 2 (Non-Compliance)

Ss	L1	L2	Measure of Change	Medium
1	.66	.66	0.00	.10
2	.80	.78	-.02	.23
3	.70	.76	+.06	.25
4	.44	.82	+.38	.78
5	.50	.25	-.25	0.00
6	.66	.71	+.05	.38
7	.48	.43	-.05	.33
8	.55	.24	-.31	.22
9	.80	.66	-.14	.73
10	.46	.32	-.14	.11
11	.52	.25	-.27	.41
12	.45	.71	+.26	.35
	$\bar{X}$= .59	$\bar{X}$= .55		$\bar{X}$= .32

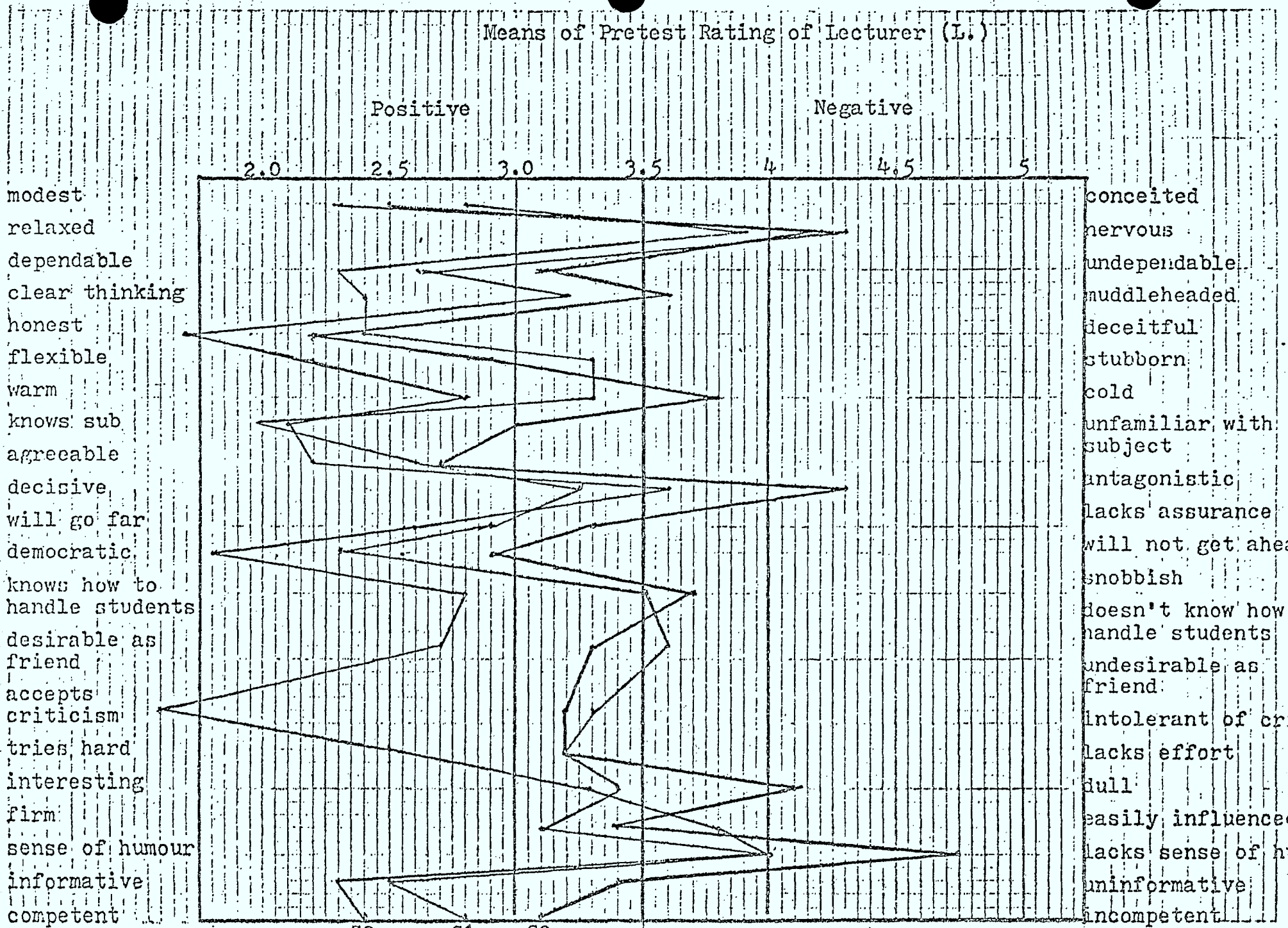
Condition 3 (Control)

Ss	L1	L2	Measure of Change	Medium
1	.65	.12	-.53	.23
2	.52	.37	-.15	.12
3	.71	.52	-.19	.24
4	.80	.90	+.10	.50
5	.85	.64	-.21	.24
6	.82	.89	+.07	.27
7	.71	.45	-.26	.06
8	1.00	.85	-.15	.12
9	.70	.52	-.18	.29
10	.85	.67	-.18	.12
11	.78	.79	+.01	.65
12	0.00	.28	+.28	0.00
	$\bar{X}$= .70	$\bar{X}$= .58		$\bar{X}$= .24

Summary of Means of Measures of Acceptance

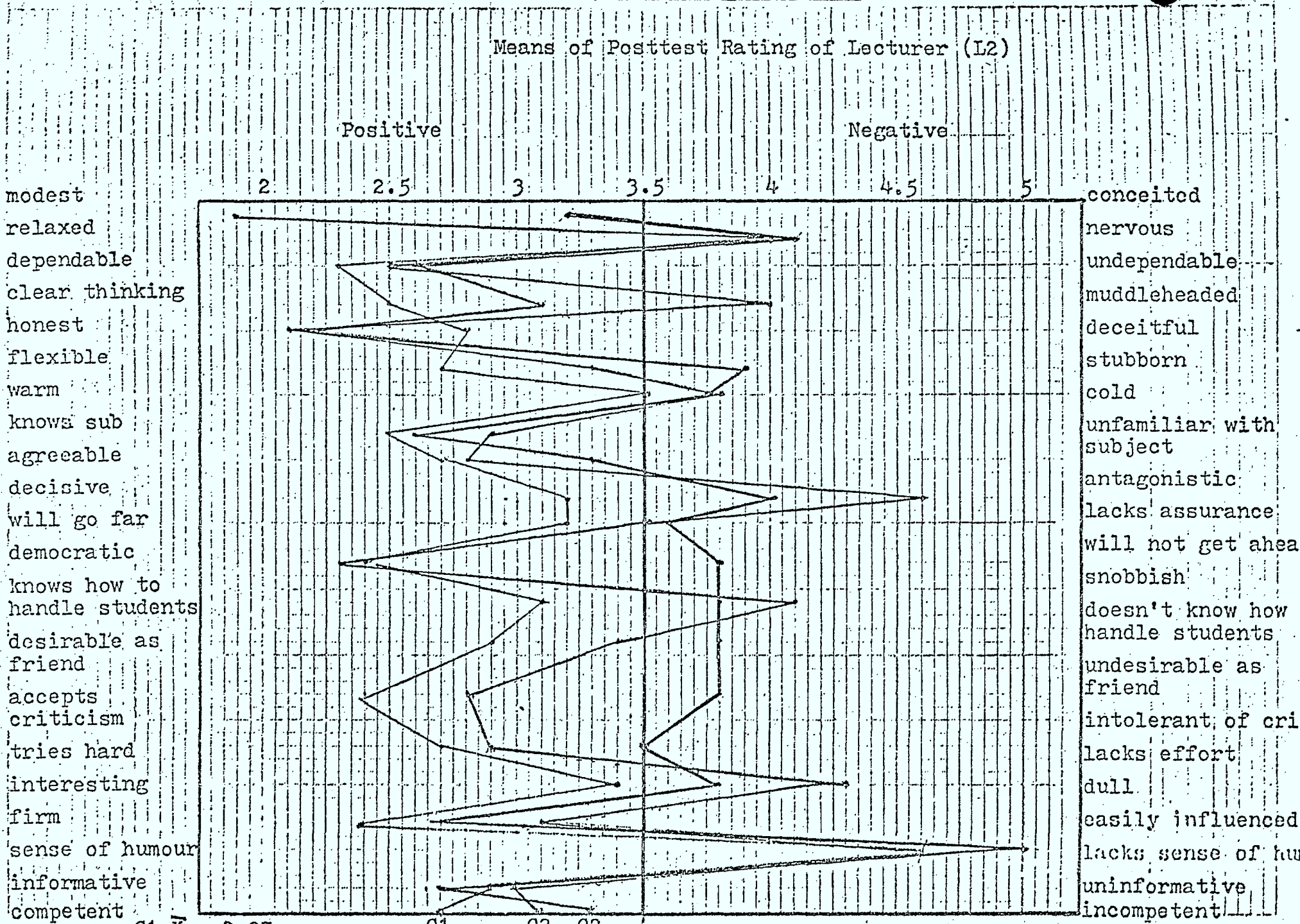
	C1	C2	C3
L1	.64	.59	.70
L2	.69	.55	.58
M	.45	.32	.24

APPENDIX 4 (Figure 1)



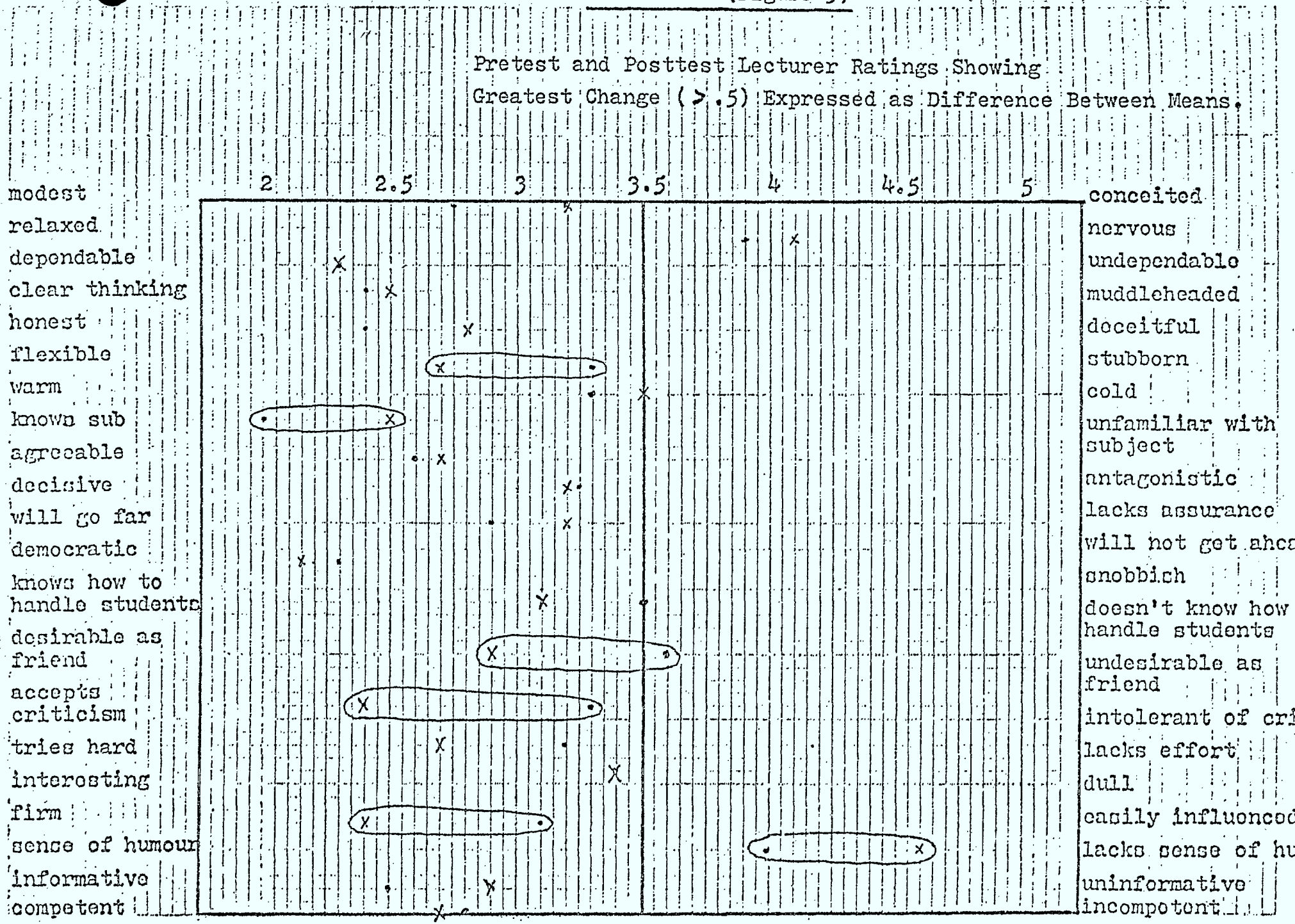
C1 $\bar{X}$ = 3.00
C2 $\bar{X}$ = 2.72
C3 $\bar{X}$ = 3.36

APPENDIX 4 (Figure 2)



APPENDIX 4 (Figure 3)

Pretest and Posttest Lecturer Ratings Showing Greatest Change (> .5) Expressed as Difference Between Means.



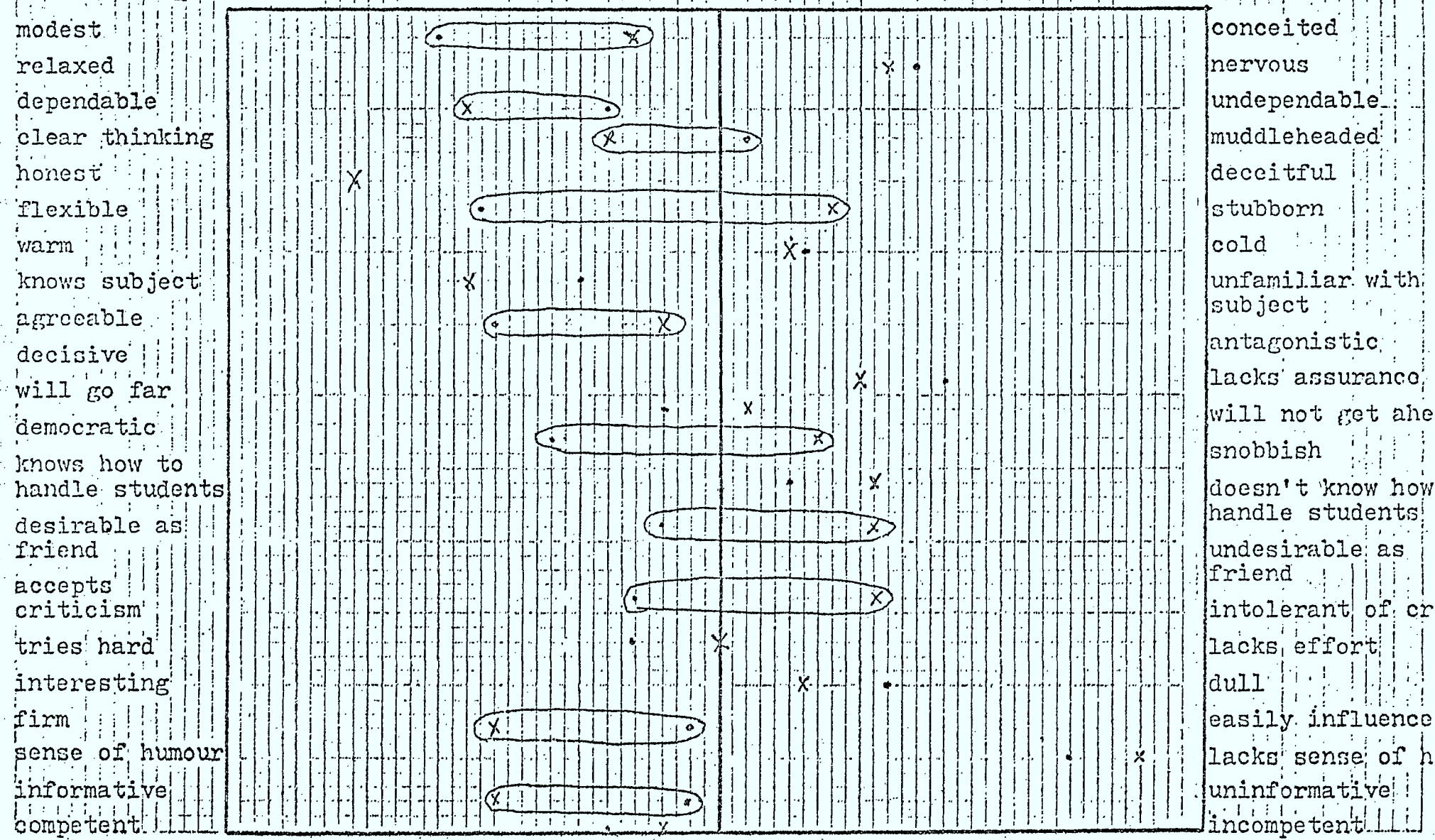
Condition (Compliance)

• Pretest score

x Posttest score

APPENDIX 4 (Figure 4)

Pretest and Posttest Lecturer Ratings Showing Greatest Change (>.5) Expressed as Difference Between Means

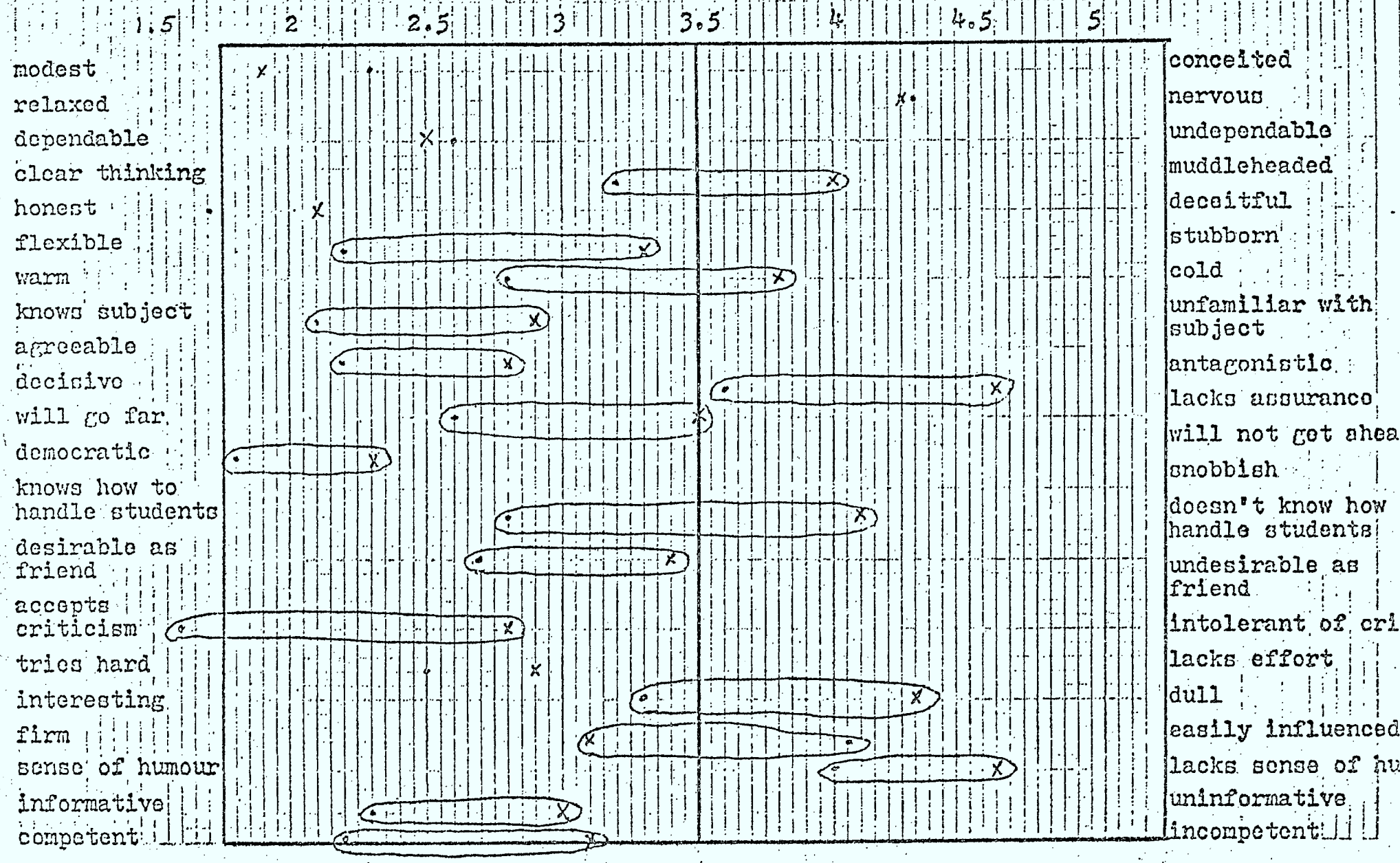


Condition 2 - (Non-Compliance)

∘ Pretest score
x Posttest score

APPENDIX 4 - (Figure 5)

Pretest and Posttest Lecturer Ratings Showing Greatest Change (>.5) Expressed as Difference Between Means.



Condition 3 (Control)

• Pretest score
× Posttest score

APPENDIX 5

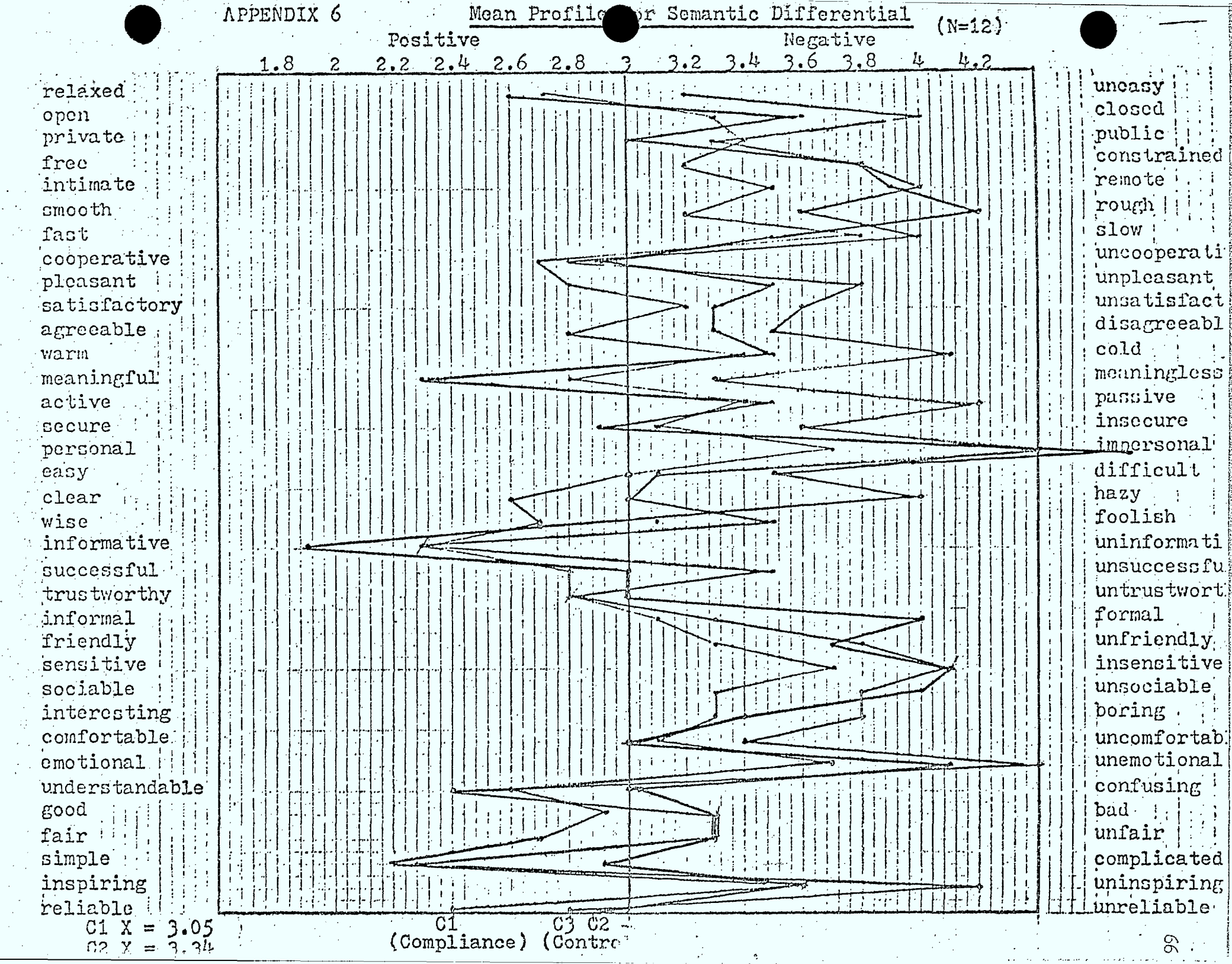
Scales on Lecturer Ratings Showing Greatest Change (> .5)

Expressed as Difference Between Means

	Compliance	Non-Compliance	Control
Change to Positive	flexible	dependable	firm
	accepts criticism	firm	
	firm	informative	
	desirable as friend*	clearthinking	
Change to Negative	knows subject	conceited	muddlehead
	lacks sense of humour	stubborn*	stubborn
		antagonistic	cold*
		snobbish*	unfamiliar with subj
		undesirable as friend*	lacks assu ance
		intolerant of criticism*	antagonist
			will not g ahead
			snobbish
			doesn't kn how to ha students*
			undesirabl friend
			intolerant criticism
			dull*
			lacks sens of humour
			uninforma
			incompete

* actual change from negative to positive or positive to negative response.

APPENDIX 6 Mean Profile for Semantic Differential (N=12)



APPENDIX 7

Attitudes to Medium

STRONGLY ≥3.6 neg. ≤2.4 pos.	MODERATELY 3.2-3.6 neg. 2.4-2.8 pos.	SLIGHTLY 2.8-3.2
C1		
slow (-)	remote (-)	uncomfortable (-)
impersonal (-)	cold (-)	formal (-)
insensitive (-)	passive (-)	constrained (-)
unemotional (-)	unfriendly (-)	rough (-)
uninspiring (-)	unsociable (-)	unsatisfactory (-)
informative (+)	boring (-)	unsecure (-)
simple (+)	relaxed (+)	good (+)
reliable (+)	closed (-)	pleasant (+)
5/8 neg.	public (-)	aggeeable (+)
	cooperative (+)	meaningful (+)
	clear (+)	successful (+)
	wise (+)	trustworthy (+)
	understandable (+)	= 3.0 easy- 6/1
	fair (+)	difficult
	8/14 neg.	
C2		
constrained (-)	closed (-)	foolish (-)
remote (-)	slow (-)	cooperative (+)
rough (-)	unpleasant (-)	secure (+)
impersonal (-)	unsatisfactory (-)	simple (+)
lazy (-)	disagreeable (-)	reliable (+)
formal (-)	cold (-)	
unfriendly (-)	passive (-)	= 3.0
insensitive (-)	difficult (-)	public succe
unsociable (-)	boring (-)	successful
unemotional (-)	bad (-)	confortable
meaningful (+)	unfair (-)	understandable
informative (+)	uninspiring (-)	trustworthy
10/12 neg.	relaxed (+)	
	12/15 neg.	

STRONGLY	MODERATELY	SLIGHTLY
C3 closed (-) constrained (-) remote (-) slow (-) unpleasant (-) cold (-) passive (-) impersonal (-) unfriendly (-) insensitive (-) unsociable (-) boring (-) unemotional (-) uninspiring (-) informative (+) simple (+) 14/16 neg.	public (-) rough (-) unsatisfactory (-) disagreeable (-) meaningless (-) insecure (-) foolish (-) unsuccessful (-) formal (-) uncomfortable (-) bad (-) unfair (-) understandable (+) 12/13 neg.	uneasy (-) difficult (-) cooperative (+) trustworthy (+) reliable (+) 2/5 =3.0 lazy

APPENDIX 8

Low Variance Items on "Medium" Rating

Subjects were in strong agreement (.65) on the following items. The mean shows positive or negative score.

Compliance	$\bar{X}$	σ^2
rough	(3.2)	.09
cooperative	(2.7)(+)	.38
pleasant	(2.8)(+)	
impersonal	(3.7)(-)	.41
wise	(2.7)(+)	.38
informative	(2.3)(+)	.46
active	(3.4)	.52
secure	(3.1)	.64
unemotional	(3.7)(-)	.64

Non-Compliance	$\bar{X}$	σ^2
cooperative	(2.9)(+)	.59
easy	(3.5)	.58
hazy	(3.8)(-)	.31
wise		
trustworthy	(2.8)	.50
unfriendly	(3.7)(-)	.31
insensitive	(4.1)(-)	.27
unsociable	(4.0)(-)	.33
unemotional	(4.1)(-)	.44
good	(3.3)	.03
fair	(3.3)	.44
uninspiring	(3.6)(-)	.62

Control	$\bar{X}$	σ^2
constrained	(3.8)(-)	.31
slow	(4.0)(-)	.50
cooperative	(2.8)(+)	.43
unpleasant	(3.8)(-)	.31
cold	(4.1)(-)	.11
passive	(4.1)(-)	.54
insecure	(3.6)(-)	.22
impersonal	(4.4)(-)	.56
insensitive	(4.1)(-)	.61
unemotional	(4.4)(-)	.39
uninspiring	(4.2)(-)	.36

Strongly negative adjectives are underlined.

APPENDIX 9

Summary of Correlations on Post-Experimental Measures of Acceptance of Lecturer and Medium Using Spearman's Rank Order Correlation.

	Total Sample	Medium Rated First	Lecturer Rated First
Compliance	.34	.61	-.20
Non-Compliance	.42	.77*	.46
Control	.52*	.60	.93*

* Significant at .05 level on a one-tailed test.

II. Teleconferencing and Self-Monitoring

The purpose of this study was to investigate how persons in a two-person interaction made use of self-feedback monitors during mediated communication in the Wired City Laboratory. Of specific interest was the influence of the distance of the self-feedback monitor from the subjects.

Method

Subjects

Sixty male and female undergraduates from the introductory psychology course at Carleton University participated in the study.

Apparatus

Each subject was seated in a node of the Wired City Laboratory. The equipment configuration used in the terminal is diagrammed in Figure 1. The centre monitor was used to present stimuli to one participant. The self-feedback monitor allowed the participant to monitor his own behavior during interaction; the other monitor allowed the participant to monitor his partner. The cameras were situated in such a way that self-monitoring glances were recorded as outward movements of the eyes and monitoring of one's partner was recorded as inward eye movements. Finally, two self-monitor postions, near and distant, were employed.

Procedure

Pairs of subjects were assigned to one of the following experimental conditions: 1) near self-monitor, 2) distant self-monitor, 3) no self-monitor. Five same-sex, and five mixed-sex pairs were

tested in each condition. Participants were asked to perform two experimental tasks during the mediated interaction. In one task subjects were instructed to "arrive at a common story" in response to a vague, unstructured picture from the Thematic Apperception Test. The second task required participants to "come to a common solution" to two human relations problems. Fifteen minutes was allowed for each of these tasks. Task order was randomized.

After finishing these tasks, the participants were asked to complete a personality measure of self-monitoring tendency (Snyder, 1974), and to provide self-report data on their reactions to the mediated communication system. Participants worked on these tasks independently, with visual and audio communication between one another eliminated.

Dependent Measures

The number of glances toward the self-feedback monitor and toward the monitor containing other's image were recorded. Transcripts of subjects' responses on the TAT and the human relations task were scored for creativity by an independent judge. The relationship between the personality measurement of self-monitoring and the use of the self-feedback monitor was also of interest. Data analysis is still in progress on the videotapes of these sessions. A report being prepared for publication will be submitted to the Department of Communications upon its completion.

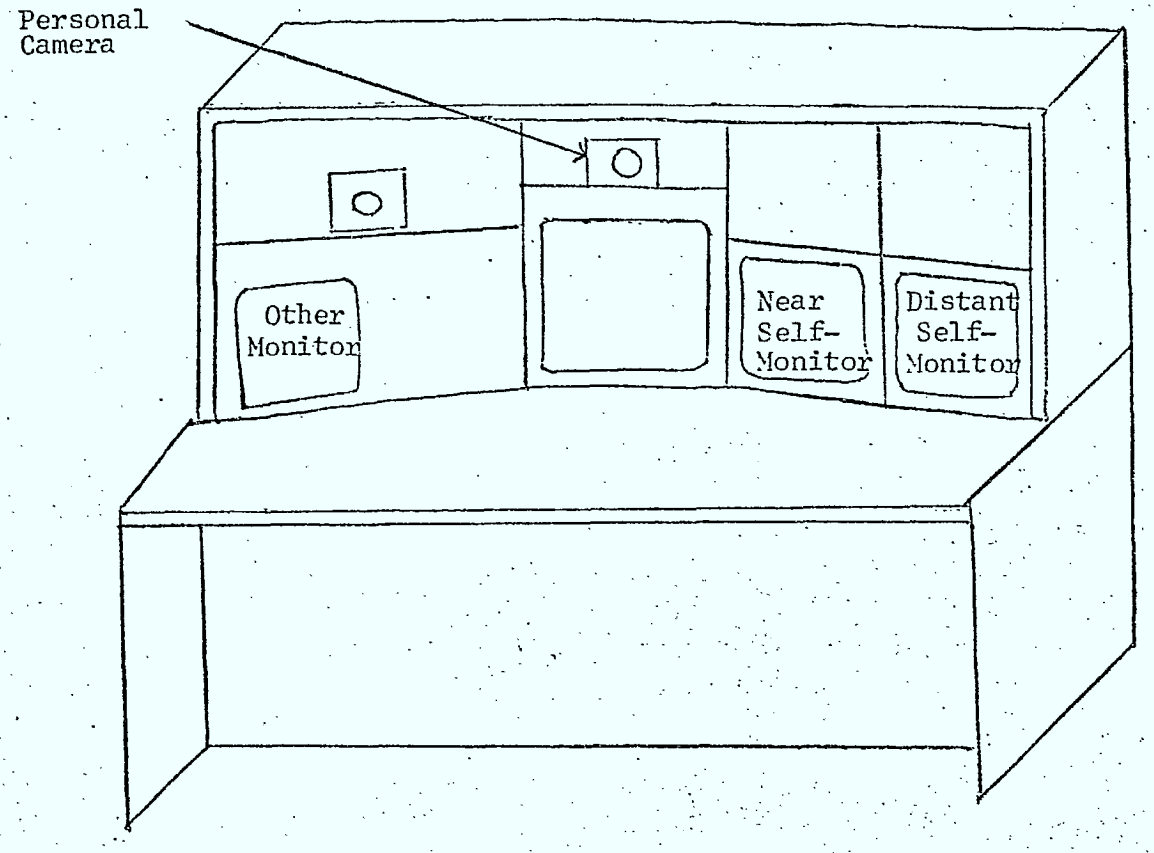

Personal
Camera
Other
Monitor
Near
Self-
Monitor
Distant
Self-
Monitor

Figure 1

Footnotes

1. The study as reported has been submitted as an Honors Thesis in Social Psychology to Carleton University by Shirley Morrison.

STRICKLAND, LLOYD H.
— TECHNOLOGICAL TEST AND SOCIAL EFFECTS OF REMOTE CONFERENCE SYSTEMS.