

THE EFFECTS OF SPEAKER'S GAZE AND VISIBILITY ON
LISTENERS' RECALL OF VERBAL INFORMATION

by

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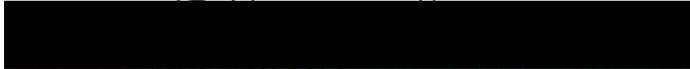
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ABSTRACT

The primary purpose of the study was to examine the effects of a speaker's level of gaze on listeners' recall of verbal information. This study also involved the comparison of communication efficiency across two kinds of media.

Other studies report a significant relationship between higher levels of counsellors' gaze and clients' favourable impressions. On the other hand, the relationship between counsellors' level of gaze and clients' recall of verbal information has largely been ignored.

Fifty-four female undergraduate psychology students at the University of Victoria were randomly assigned to one of three treatment presentation conditions: (a) a high-gazing (HG) visible speaker on TV; (b) a low-gazing (LG) visible speaker on TV; and (c) a non-visible speaker on audiotape (A). Following the treatment, subjects completed a written Recall of Information Questionnaire (RIQ) assessing their recall of specific facts pertaining to the presentation.

Data were analysed using one-way analyses of variance and the Scheffe multiple comparison of means procedure. Recall of information for the presentations resembled a classic serial position effect. Earlier material was recalled significantly better by the low gaze (LG) group than the audio (A) group but not the high gaze (HG) group. Later material was recalled significantly better by the audio (A) group than the high gaze (HG) group but not the low gaze (LG)


group. Though nonsignificant, low gaze (LG) subjects tended to recall consistently more of the important information than did their high gaze (HG) counterparts.

The results of this study indicate that speaker visibility, but not gaze, has a significant impact on the amount of verbal information recalled by listeners. This finding is consistent with previous studies examining the effects of various media on communication efficiency. The implications of the findings in brief information oriented conversations are discussed. Suggestions for future research and limitations of the present study are also discussed.

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CHAPTER I

INTRODUCTION

The value of maintaining direct eye contact in conversation is widely accepted in white North American culture. This is especially true in counsellor training where, "Maintaining good eye contact is another way of saying, 'I'm with you, I want to hear what you have to say'" (Egan, 1982, p.61).

For the most part, research on the function of gaze in social interaction (see Argyle & Cook, 1976) has dealt with the signaling and interpretation of interpersonal involvement, attitudes, and emotions. It appears that increased visual involvement between interactants results in more favourable impressions of the individuals concerned providing that the relationship involves interest, liking, mutual concern and respect for privacy (see Heslin & Patterson, 1982, chap. 2). Similarly, counsellors who use higher levels of gaze with their clients are perceived as more attractive (Lacrosse, 1975), expert and trustworthy (Claiborn, 1979).

While much research has addressed the relationship between gaze and the signalling of interpersonal attitudes and emotions, few studies have looked closely at the relationship between gaze and the transmission of factual information. Specifically, while higher levels of gaze might be associated with more favourable impressions, the relationship between the amount of gaze and the amount of information recalled by the interactants has largely been ignored. This study was designed to investigate the relationship between the amount of a speaker's gaze and the amount of verbal information recalled by listeners.

CHAPTER II

REVIEW OF THE LITERATURE

The following review of literature examines the relationship between gaze, comparative media, and affiliative nonverbal behaviour on subjects' recall of verbal information. A related review focuses on the cognitive functions of gaze avoidance and "random" eye saccades as they relate to the regulation and processing of verbal information. Finally, visual matching and sequencing behaviour in two-person conversations is briefly reviewed. The literature reviewed suggests that visual behaviour in two-person conversations, contains elements of both a deliberate social regulating function, and a more or less nondeliberate information regulating function.

Otteson and Otteson (1979) compared the story-recall performance of children who were administered stories by teachers in either the presence (100%) or absence (0%) of the same teacher's gaze. The authors found a significant positive relationship between the amount of a teacher's gaze and the childrens' story-recall performance. Unfortunately, the gaze conditions were somewhat confounded since the experimenters did not control for the teacher's differential body orientations between the two conditions. That is, during the experiment, the teacher had her body turned slightly towards the presence of gaze group for the duration of the experiment. In effect, what the experimenters tested for were the effects of ignoring versus attending behaviours on childrens' story recall. As such, it is difficult to accept that their findings were contingent only upon the amount of gaze that each group received.

Champness (cited in Argyle & Cook, 1976) investigated the effectiveness of relaying the contents of a business letter with and without vision. He concluded that the information could be conveyed between interactants as quickly and accurately without vision as with vision. In their investigation of recall of verbal information, Imberger and Jones (cited in Argyle & Cook, 1976) found that more information was recalled following a telephone conversation than following a video or face-to-face interaction.

A similar study of cross-media communication was conducted by English and Jelinevsky (1971). Instead of assessing the recall of information across various media, these authors compared the reliability of judging counsellor behaviour (i.e. empathy) under audio, visual and audiovisual observation conditions. Though no significant differences in reliability judgements were found, the judges consistently obtained the highest reliability ratings under the audio condition.

Bourget (1977) studied the effects of "high-delight" feedback (operationally defined as smiling, a very pleased facial expression, maximum eye contact and a pleased tone of voice) versus "low-delight" feedback on interviewees' positive feelings about themselves and willingness to try making relationship changes with a friend. Interviewees in the high-delight condition reported good feelings about themselves significantly more often, and they rated the consultant's recommendations as more sensitive and informative. Interestingly, subjects in the high-delight condition recalled only slightly more of the feedback received than did subjects in the low-delight condition. The results of the high-delight subjects seem consistent with other research findings, but the lack of a significant difference in recall of the specific feedback was surprising. In other words, a recipient of high-delight feedback might feel that the consultant gives more

informative feedback, but this has little to do with whether the client will remember just what the informative feedback was.

Findings such as the above seem to indicate that the actual transmission and recall of verbal information is not particularly enhanced by the presence or visibility of another person, even if that person is displaying affiliative behaviour. The findings of Imberger and Jones (cited in Argyle & Cook, 1976) suggest that information received in the presence of another person may deteriorate as a result of conflicting situational demands. In the audio or telephone condition, the receiver is able to focus his attention on the information being received. On the other hand, the addition of irrelevant (eg. affiliative nonverbal behaviour) visual information may cause the listener to be distracted from the task of listening. A more specific example was provided by P. Duncan (personal communication, September 26, 1984), who noted that, when a tester gazes into the eyes of a subject while administering the Digit Span verbal subtest of the WISC-R, the subject's performance is usually significantly impaired. English and Jelinevsky (1971) effectively sum up these points by suggesting that audio cues alone provide, ". . . enough but not too much material to focus on for purposes of evaluation" (p.512).

The averting of gaze in communication was noted by Exline and Winters (1965) in their investigation of the effects of cognitive difficulty and cognitive style upon eye to eye contact in interviews. The authors found that increasing the cognitive difficulty of a conversation topic decreased the overall amount of time that a speaker looked at his listener. The authors suggest that the avoidance of eye contact is, ". . . one, more or less conscious, mechanism of reducing the intake of information which is distracting to, or difficult to integrate with, an

ongoing performance" (p.6).

In their review of studies examining the relationship between "random" saccadic eye movement rates and cognitive processes, Erlichmann and Barrett (1983) conclude that studies reporting increases in the rates of eye movements occur in the presence of verbal-linguistic processing, while those reporting decreases in the rates of eye movements occur in the presence of imagery processing. The same authors also tested for the possibility that visual stimulation might influence eye movements during internal cognitive activity but found that varying stimulus complexity and illumination level did not significantly influence the effect.

Evidence from the studies of two-person conversations using naive subjects generally show that individuals look less while talking than while listening (see Argyle & Ingham, 1972). In addition to this sequencing of gaze in conversation, studies show that increased gaze by one interactant is usually met with increased gaze by the other. Responses to increased gaze patterns are reviewed by Cappella (1981) and generally support this kind of visual matching behaviour. Argyle (1969) has also found evidence for response matching in both verbal and nonverbal aspects of communication.

In light of this divergent evidence, it is difficult to predict precisely the effect of a speaker's level of gaze on a listener's recall of verbal information. We have seen that visual behaviour serves an intimacy function and likely, an information regulating function. Concerning the former, Edinger and Patterson (1983) suggest that, ". . . nonverbal behaviour in the service of the intimacy function . . . involves a more deliberate presentation designed to change another

person's behaviour" (p. 50). From Exline & Winter's (1965) perspective, gaze avoidance is a more or less deliberate component behaviour operating in the service of the information regulating function. And finally, Erlichmann and Barrett's (1983) work on "random" eye saccades suggests that there is also a nondeliberate component behaviour operating in the service of the information regulating function.

CHAPTER III

RATIONALE

While the relationship between increased gaze and perceived counsellor attractiveness, expertness and trustworthiness is evident, the relationship between the amount of a speaker's gaze and a listener's recall of information is less obvious. The literature reviewed thus far suggests firstly, that a speaker's increased visual involvement should result in both a listener's matched visual involvement and an overall lower recall of the information received (providing that the information is sufficiently complex to begin with). Secondly, it was suggested that the same information conveyed by a non-visible speaker would result in more information being recalled by a listener.

Expressive and high involvement nonverbal behaviours play an important role in the counselling process (especially at the outset of a relationship), though as Claiborn (cited in Edinger & Patterson, 1983) has suggested, this may become less important than verbal behaviour in subsequent client contacts. But what about brief information oriented sessions? Are higher levels of social involvement behaviours (such as gaze) necessary in these cases and if so, to what extent? Given the potency of gaze in contributing to a social control function (see Edinger & Patterson, 1983), the relatively unknown effects of gaze on what might be called an information control function warrant investigation.

Thus, this study was designed to test the hypothesis that there would be ordered differences between subjects' mean recall of the same verbal information across conditions of (i) a high-gazing visible speaker on TV, (ii) a low-gazing

visible speaker on TV, and (iii) a non-visible speaker on audiotape. It was proposed that recall would be greatest for the audio (A) condition, followed by the low-gaze (LG) and high-gaze (HG) video conditions, respectively.

CHAPTER IV

METHOD

Subjects

The subjects for this study were 54 female undergraduate students between the ages of 18 and 24 years, all of whom were enrolled in the first year General Psychology course at The University of Victoria. It was reasoned that, by having subjects of a similar age and educational status, a certain amount of within subjects variability (i.e. testing experience) might be controlled. In all, 18 subjects were randomly assigned to each of the three experimental conditions.

Potential subjects signed up on sheets that were circulated through three of the course sections. At that time, they were informed that the researcher was looking for volunteers to take part in a study concerning itself with how persons learn information about job finding and marketing themselves in the workplace.

Definition of Terms

Speaker's gaze

In this study, speaker's gaze refers to the looking behaviour of a speaker as if directed at or towards a recipient listener's eyes. As the visible speaker presentations were video-recorded, the speaker's gaze was directed either to the camera lens or off to the side in a "natural" manner while speaking.

Verbal information recall

This term refers to the number of specific facts and ideas about the presentation material, as recalled on a timed pencil and paper test.

Instrumentation

Recall of information questionnaire (RIQ)

A comprehensive, timed pencil and paper test covering the information presented to subjects is included in Appendix A. The RIQ includes a number of both fill-in-the-blank and free-recall items. The questionnaire was administered to a small group of pilot subjects to ensure an adequate time limit and test ceiling. Subjects were given one minute and 30 seconds to work on Part A and eight minutes to work on Part B.

Scoring Procedures

Scoring criteria for the RIQ are included in Appendix B. These criteria were developed on the basis of the kinds of representative answers provided by the subjects themselves, and five judges' quantitative ratings of both these answers and the original stimulus material. All representative subjects' answers were disguised as to their treatment origin. Separate criteria were developed for each of the subportions in the RIQ including Part A, Part B - Rules, and Part B - Tips. The major scoring was done by a graduate student enrolled in the M.A. Education Program at the University of Victoria.

Interrater agreement

Owing to the high objectivity of the scoring criteria, six RIQ's (two per experimental condition) were randomly selected for scoring by another graduate

student enrolled in the M.A. Counselling Program at the University of Victoria. Interrater agreements of 100%, 94% and 93% were obtained for Part A, Part B - Rules and Part B - Tips, respectively.

Apparatus

Video recording equipment

The two gaze conditions were recorded on Sony U-matic Format, 3/4 inch KCA 20 video cassettes, using a Hitachi VK-C 870 colour video camera, and relayed to a Sony U-matic Format (Model 2600), 3/4 inch video recorder via a Hitachi VT-6500A, 1/2 inch portapack video recorder.

Audio recording equipment

The audio condition was recorded on a TDK D-C90 dynamic cassette tape, using a Sony MX-650 six channel stereo microphone mixer, and a Sony TC-5X2 stereo cassette deck. The audio signal from the high gaze (HG) video tape was relayed into the mixer from a Sony U-matic Format (Model 2600), 3/4 inch video recorder.

Video playback equipment

The video conditions were played on a Sony U-matic Format (Model VP 2000), 3/4 inch video recorder, and shown on a 20 inch Electrohome "Capri" colour TV.

Audio playback equipment

The audio condition was played on a Sony TC-205 cassette recorder.

Treatment Conditions

Video conditions

A colour, life size (head and shoulder region) speaker looking 84% of the time while talking (HG condition) versus 47% of the time while talking (LG condition) was employed. The percentage of looking while talking for the low gaze (LG) condition was determined from the results of the Argyle & Ingham (1972) experiment using unacquainted dyads of naive student subjects at an interaction distance of approximately 1.5 metres. For a male-female (MF) sex combination (male speaker), the percentage of looking while talking is approximately 52%. For the HG condition, a level of 84% was employed in order to spread the percentage of difference between the conditions as much as possible while at the same time approximating the normal higher end of the range for visual involvement. Any effects found for less extreme manipulations would likely be more meaningful in comparison to say the 0% versus 100% levels employed by Otteson and Otteson (1979).

The video conditions were viewed by judges to ensure that there were no apparent confounding variables other than gaze (i.e. voice tempo, inflections, facial expression) distinguishing the two presentations. The stimuli were viewed from approximately 1.5 metres, which was the same distance employed in the Argyle and Ingham (1972) study.

Audio condition

The audio stimulus consisted of the audio soundtrack recorded from the HG videotape. As this study predicted stronger results (i.e. higher recall) from the LG condition, it was appropriately conservative to use a recording of the HG videotape for the audio (A) condition. The A stimulus was played to subjects in

the same lab setting, at the same volume as used in the LG and HG conditions.

Presentation material

The material, "Eight 'Young People' Rules", was adapted from Girard's book, *How to Sell Yourself* (1979). The information is addressed to those of college age who are stepping out into the work world. The material was selected for three reasons. First, it is addressed to the age group of this study, and second, it contains relevant, interesting and practical information that could be easily used by a counsellor. Third, the material is not overly complex or technical, but it is novel. This factor, combined with the demands of a test situation, for the purposes of this study can be construed as a reasonably complex task (see Appendix C for an outline of the presentation material).

The stimulus tapes were approximately two minutes and 48 seconds in length for the LG condition and approximately two minutes and 44 seconds for both the HG and A conditions.

Procedure

All subjects were randomly and individually assigned to one of the three treatment conditions. Prior to receiving instructions and treatment, the subjects were informed both of the voluntary nature of their participation and of their right to withdraw from the study at any time. Following this, they were verbally given a brief outline of the agenda, and an opportunity to ask questions (a sample script for the procedures is included in Appendix D).

Video conditions

Upon entering the lab, subjects were seated across from the video monitor in a comfortable chair. The monitor and image of the counsellor was set up so that it appeared as though he were sitting at approximately the same eye level as that of the subjects. Following the preliminary verbal orientation, subjects were given instructions to attend closely to the presentation. The experimenter turned on the video tape and left the lab. Following the presentation, the experimenter returned to the lab, directed the subject to a desk, and administered Part A of the RIQ. The experimenter remained in the lab while the subjects completed Part A of the RIQ, but left while subjects completed Part B. A short debriefing period regarding the experimental manipulation followed the testing.

Audio condition

For subjects in the A condition, the same procedure employed for the video conditions was used except that the audio cassette recorder was set up in place of the video monitor.

CHAPTER V

RESULTS

The means and standard deviations of the post-treatment RIQ total scores are presented in Table 1.

A one-way analysis of variance was used to test for over-all treatment effects on subjects' RIQ total scores (see Table 2). The results indicated no significant over-all treatment effect, $F(2,51)=.90$, $p>.25$.

Subsequently, a series of one-way ANOVAS were conducted to test for treatment effects on subjects' RIQ subscores including Part A, Part B - Rules(R) 1-8, Part B - Tips(T) 1-8, and Part B - Rules & Tips combined (RT) 1-8. The means and standard deviations for these subscores scores are presented in Appendix E. The ANOVA results indicated significant treatment effects for R1, $F(2,51)=4.63$, $p<.05$ (see Table 3); RT1, $F(2,51)=5.28$, $p<.01$ (see Table 4); and RT8, $F(2,51)=3.49$, $p<.05$ (see Table 5). Marginal but nonsignificant results were found for the following subscores: T1, $F(2,51)=3.10$, $.05<p<.10$ (see Table 6); and T8, $F(2,51)=2.49$, $.05<p<.10$ (see Table 7).

Post hoc comparisons of the treatment means were made using the Scheffe multiple comparison of means procedure. Results indicated that the LG condition was significantly different from the A condition for R1 and RT1, and that the A condition was significantly different from the HG condition for RT8.

The mean recall scores for R, T and RT were converted to percentages and are presented in Figures 1, 2 and 3, respectively. These serial position curves

indicate that recall was greatest at the beginning and end of the presentation list (primacy-recency effect - see Harcum, 1975). Treatment effects were also the most apparent at these two points. The recency portion of the recall curves show that the predicted superior performance by the A subjects occurred over the HG and not the LG subjects. The primacy portion of the recall curves show that subjects in the A condition had the poorest performance in comparison to the LG subjects. Subjects in the A condition showed little difference in performance in comparison to the HG subjects. Figure 1 also shows the clearest tendency (though non-significant) for subjects in the LG condition to outperform subjects consistently in the HG condition across the eight rules. These differences averaged about 8.4% and ranged from 3.6% to 20.0%.

Table 1

Means and Standard Deviations of RIQ Total Scores by Treatment Condition

	Treatment Condition ^a		
	HG	LG	A
\bar{X}	20.06	22.83	21.61
SD	5.65	7.29	5.53

Note. HG = High Gaze; LG = Low Gaze; A = Audio.

^an = 18 per condition

Table 2

*Analysis of Variance of Recall of Information Questionnaire
Total Scores by Treatment Condition*

Source	SS	df	MS	F
Between Conditions	69.78	2	34.89	.90 *
Within Conditions	1967.72	51	38.58	
Total	2037.50	53		

* $p > .25$

Table 3

Analysis of Variance for Rule 1 Scores by Treatment Condition

Source	SS	df	MS	F
Between Conditions	13.44	2	6.72	4.63 *
Within Conditions	74.06	51	1.45	
Total	87.50	53		

* $p < .05$

Table 4

Analysis of Variance for Rule 1 and Tip 1 Combined Scores by Treatment Condition

Source	SS	df	MS	F
Between Conditions	26.78	2	13.39	5.28 *
Within Conditions	129.22	51	2.53	
Total	156.00	53		

* $p < .01$

Table 5

Analysis of Variance for Rule 8 and Tip 8 Combined Scores by Treatment Condition

Source	SS	df	MS	F
Between Conditions	8.11	2	4.06	3.49 *
Within Conditions	59.22	51	1.61	
Total	67.33	53		

* $p < .05$

Table 6

Analysis of Variance for Tip 1 Scores by Treatment Condition

Source	SS	df	MS	F
Between Conditions	2.33	2	1.16	3.10 *
Within Conditions	19.17	51	0.38	
Total	21.50	53		

* $.05 < p < .10$

Table 7

Analysis of Variance for Tip 8 Scores by Treatment Condition

Source	SS	df	MS	F
Between Conditions	1.04	2	0.52	2.49 *
Within Conditions	10.61	51	0.21	
Total	11.65	53		

* $.05 < p < .10$

Figure 1

Mean Percentage of Recall for Rules by Treatment Condition.

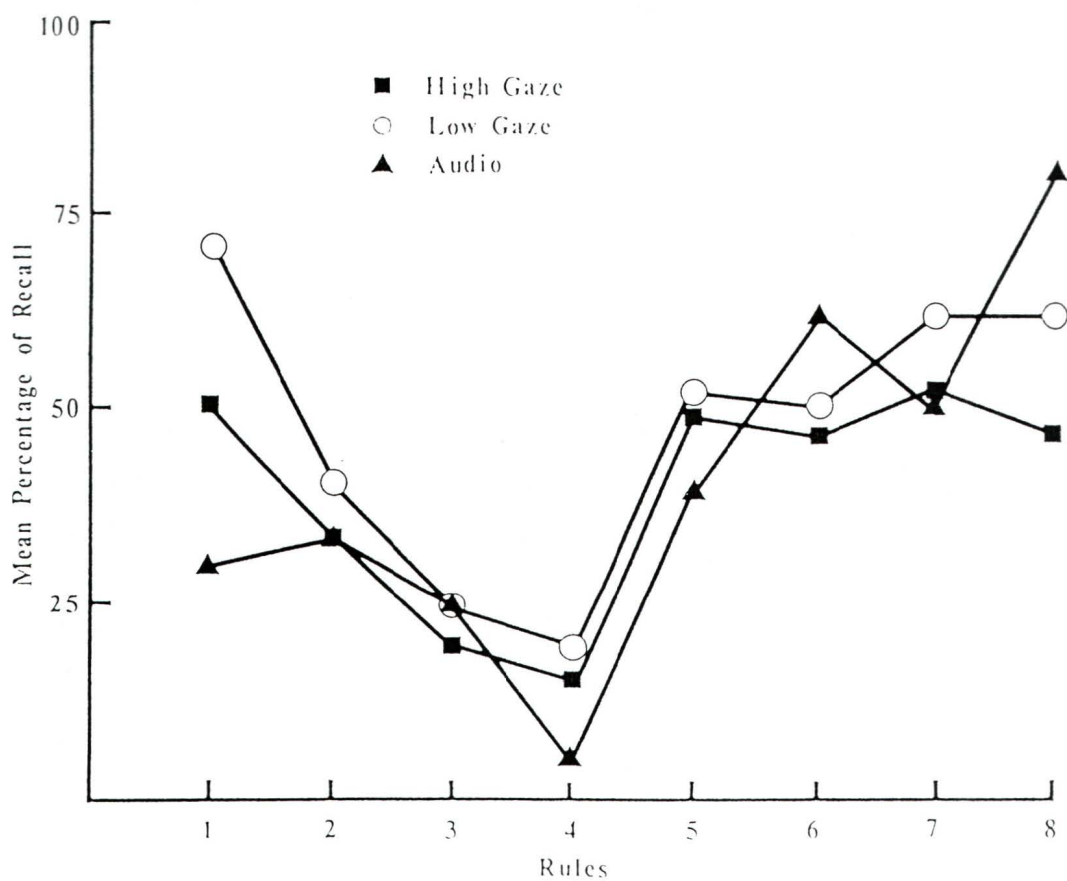


Figure 2

Mean Percentage of Recall for Tips by Treatment Condition.

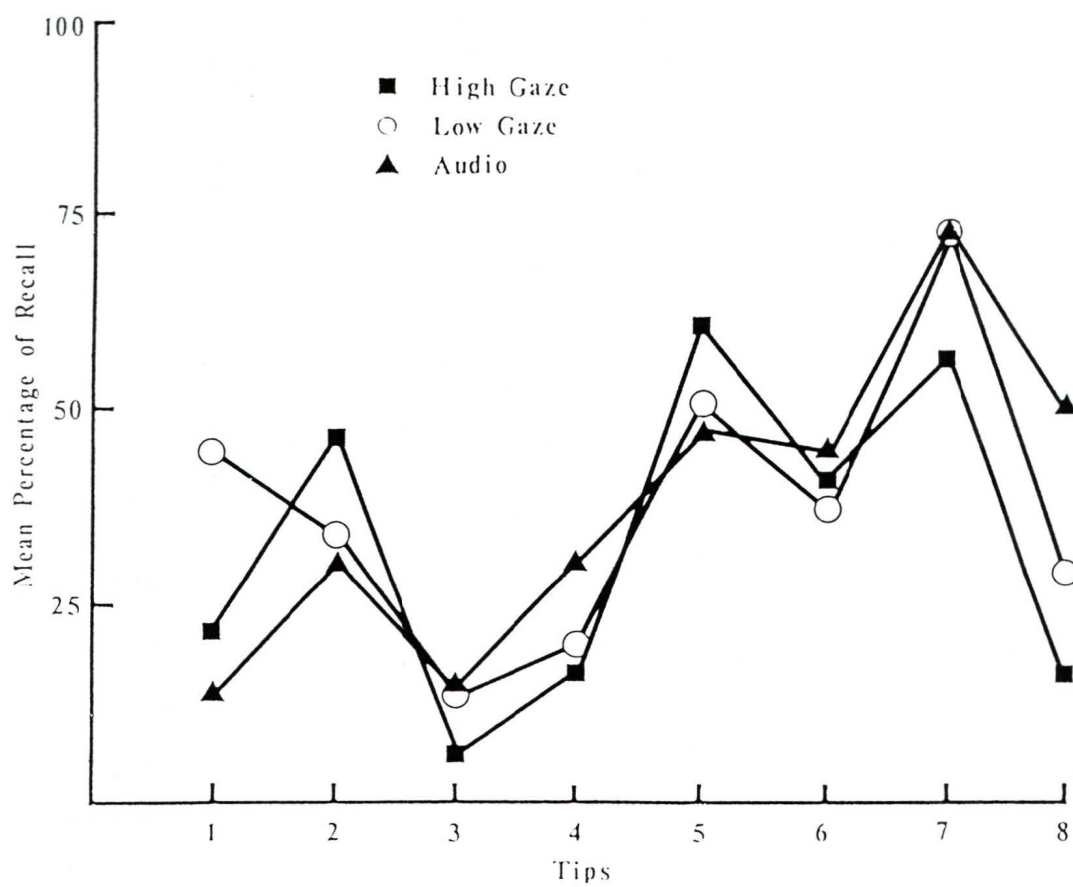
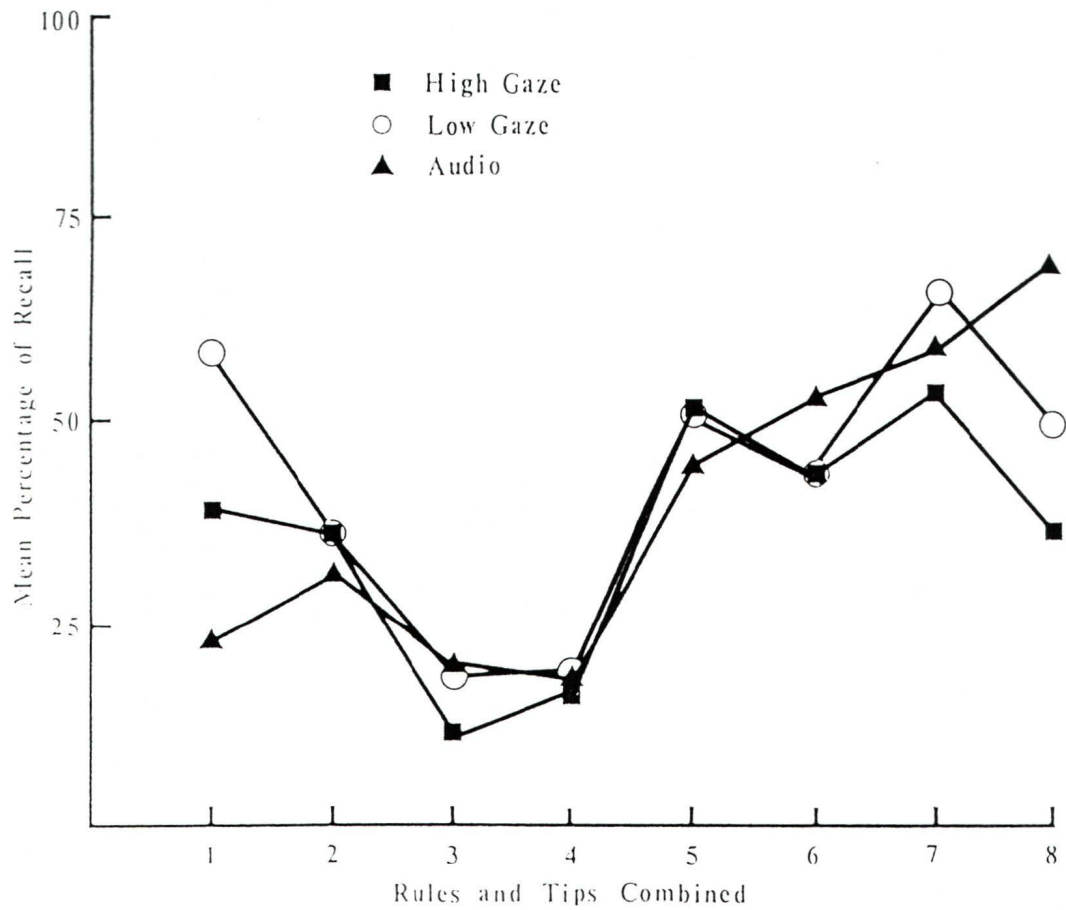


Figure 3

Mean Percentage of Recall for Rules and Tips Combined by Treatment Condition.



CHAPTER VI

DISCUSSION

The primary purpose of this study was to compare the effects of a speaker's level of gaze on listeners' recall of verbal information. By utilizing audio and audiovisual presentation formats, this study also allowed for the comparison of communication efficiency across two kinds of media.

The results of the study failed to support the hypothesis that verbal information conveyed by a low-gazing (LG) speaker would be recalled more accurately by listeners than the same information conveyed by a high-gazing (HG) speaker. On the other hand, the results gave partial support to the hypothesis that verbal information would be recalled more accurately when presented by a non-visible speaker (audio condition) in comparison to a high-gazing visible speaker (video condition). These latter results are consistent with the findings of Imberger and Jones (cited in Argyle & Cook, 1976), except that in the present study an audio-cassette was substituted for the telephone. Another difference is that the present study utilized a pre-recorded one-way speaker interaction format as opposed to a two-way interaction format.

The lack of a significant gaze effect emerging is by no means discouraging. As already indicated in Figure 1, subjects in the LG group consistently outperformed their HG counterparts across the eight rules. Since the rules themselves were the primary focus of both the speaker's presentation and the RIQ, the possibility of validating this finding through further experimental study would seem worth pursuing.

The bimodal serial position curves in Figures 1-3 are representative of the serial position effects obtained in free-recall experiments involving the learning of word lists. Data obtained from this kind of task typically show that recall is the greatest for words presented at the end of the list, followed by those words at the beginning of the list, and least for those in the middle portion of the list (see Lachman, Lachman & Butterfield, 1979). Hence, the absence of significant treatment effects across the mid-portions of the recall curves is perhaps more reflective of the serial-position phenomenon than any lack of treatment potency per se.

The inferior performance by the audio group at the onset of the rules was a surprising finding. In retrospect, one possible explanation is that, as the speaker made a transition from the prologue (Part A) to the rules (Part B), his glances or facial expressions may unintentionally have acted to emphasize that a topical shift was about to occur. This might have communicated (more than just tone of voice) that the listener should ready herself for incorporating (the important) new material (see Kendon, 1967). That the A group's performance quickly levelled off to about the same performance as that of the LG and HG group by Rule 2 indicates that a quick accommodation was made in spite of the apparent lack of visual cues. On the other hand, the superior performance of the A group over the HG group at the end of the serial list is possibly due to the fact that the absence of visual information at this point allowed the listeners to focus exclusively on the verbal information being presented. This finding is consistent with both the expectations of this study and the findings of Imberger and Jones (cited in Argyle & Cook, 1976).

The nonsignificant tendency for the LG subjects to recall more verbal information (i.e. rules) than the HG subjects is worth considering at this point. Statistically, it is hardly necessary to explain differences in means where the standard deviations associated with the means are often larger than the means themselves (see Appendix E). Theoretically however, one hypothesis is that the listeners in the video conditions did match the levels of gaze shown by their respective speakers and that this effect of restricting (or not restricting) "random" eye saccades caused the observed differences. While it might be tempting to argue this position, there is no empirical evidence to prove this given that the listeners' visual behaviour was not recorded. Post-experimentally, casual questioning by the researcher revealed that some subjects in the LG condition did wonder why the speaker was looking off so much and as a result, they too ended up looking off (i.e. matching). The HG subjects noted fewer such observations and tended to view the speaker's visual behaviour as quite natural and not really out of the ordinary.

This takes us back to the original question of just how much visual involvement is necessary for recall in brief information oriented conversations? The findings from this study suggest that, over the course of a verbal presentation, the amount of visual involvement makes no significant difference. On the other hand, the tendency for LG subjects to recall slightly more of the important information (i.e. rules) throughout the presentation list (see Figure 1) suggests one practical consideration. While giving information, advice, instructions or a directive (see Ivey, 1983) to a client, a counsellor might consider looking less while talking thus allowing the client to focus on the verbal message (since establishing a relationship would be of less importance here). Another

consideration involves the difference between the A and HG groups' performance in the recency portions of the free-recall curves (see Figures 1-3). If the results of the A group can be equated with no-gaze, then we might expect that less gaze at the end of a list of instructions will least likely interfere with the listener's retention at this point. However, it appears as though some visual involvement is better than none for engaging a listener's attention before commencing with a list of facts or information. The reason for this is uncertain, but one could surmise that early visual involvement might serve to "prime" or engage the listener's attention.

Implications and Suggestions for Future Study

The major contribution of this study is the fact that a sound attempt was made to isolate gaze as the independent variable, and that the selected levels approximated more realistic levels in comparison to Otteson and Otteson's (1979) 0% and 100% levels. In fact, the 84% level of looking while speaking was very close to the the counsellor's natural level of gaze as recorded in early practice taping sessions.

Future research in this area may benefit from utilizing more than two levels of gaze in their design. Had both lower and higher levels been added to this study, greater and perhaps significant differences might have been observed.

Additionally, the use of a live speaker trained to consistently vary his or her level of gaze could also result in a more robust gaze effect. Necessity would require that the speaker remain unaware of the hypotheses underlying this kind of research.

Finally, it would be worthwhile to include a sample of male subjects in future studies to determine what effects, if any, differing levels of speaker's gaze would have on their recall performance.

Limitations of the Present Study

The major limitation of this study is that there were no observations made of the subjects' visual behaviour during treatment. This effort was not undertaken because of the time and expense required to conduct such a study. Exline and Fehr (1982) also noted both the intrusiveness and difficulty involved in measuring and recording subjects' gaze in the laboratory. In recording subjects' visual behaviour, one may actually be recording their responses to being observed instead of their responses to the independent variable.

Secondly, in relation to the gaze hypothesis, it is difficult to generalize the findings of this study to situations involving both co-interactants and/or live interactants - co-interactants because this study only examined a one-way interaction, and live interactants because this study utilized a video-recorded speaker.

Thirdly, the facts that both no treatment differences were found for Part A and that the majority of subjects judged this prologue as irrelevant to the main topic body (Part B), means that a total of one minute and 30 seconds elapsed before subjects could be tested for their recall of the rules. Without this lapse, it is quite possible that greater treatment effects may have emerged in the data.

Finally, the lack of a male sample makes it difficult to generalize the findings of this study beyond a female population of listeners. The fact that males

typically engage in lower levels of mutual gaze (with male co-interactants) could mean that both levels of gaze employed by this study's counsellor would be perceived or responded to as higher range visual involvement. Hence, predicted recall performance would likely be poorer at both gaze levels for male subjects.

Additional Post-experimental Measures

Awareness of speaker's gaze

Post-experimentally, subjects in the two video conditions were asked to indicate whether or not they were aware of the amount of time (ie. %) the speaker looked at them while talking. If yes, they were asked to estimate the amount of time by marking an "X" on a 10 centimetre line with levels demarcated in 25% intervals from 0-100%. If no, the subject was asked to guess and estimate the amount of time by marking an "X" on a similar 10 centimetre line. A sample of the Awareness of Speaker's Gaze Questionnaire is included in Appendix F. Only three out of 36 subjects indicated that they were not aware of the speaker's looking behaviour. Appendix G shows the means and standard deviations of the LG(47%) and HG(84%) subjects' awareness of gaze estimates. As can be seen from the data, the LG group tended (on average) to overestimate gazetime, and their estimations were considerably more variable in comparison to their HG counterparts, $F(13,15)=3.02$, $p<.05$. High-gaze subjects tended to underestimate the speaker's level of gaze, and their estimates remained more uniform. These biased or skewed estimates may, in fact, illustrate a tendency for persons to "correct" for a speaker's too high or too low level of gaze by subjectively quantifying it within a more appropriate or expected range of social behaviour.

Hours TV per week and recall

Subjects in the video condition were also asked to indicate the amount of time per week (on average) that they spend watching TV. It was reasoned that more experienced television viewers might show a tendency towards greater recall. Pearson Correlation analyses were computed on the subjects' RIQ total scores and RIQ subscores and indicated no significant relationship between how much subjects watch TV and how much of the information they recalled.

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APPENDIX A

Recall of Information Questionnaire (RIQ)

RECALL OF INFORMATION QUESTIONNAIRE

Subject No. _____

Condition _____

PART A

Instructions: Please read the statements carefully and fill in the blanks with the answers as you remember hearing them. Take a guess at the answer if you can't recall exactly.

1. The author of the book that the counsellor referred to is named,

_____ .
(first name) (last name)

2. The book that he wrote is entitled _____ .

3. The author coined what he calls, "Eight _____ Rules".

4. The author holds the Guinness Book of Records distinction as the

_____ .

5. This distinction was valid up until the year _____ .

6. The author sold _____ in _____ .
(number) (items) (period of time)

END OF PART A

RECALL OF INFORMATION QUESTIONNAIRE (Cont'd)

Subject No. _____

Condition _____

PART BInstructions: READ CAREFULLY BEFORE PROCEEDING

Below, list the rules that the counsellor discussed. Write the rule in the space provided then try and recall the main points/tips that were discussed under each rule. Point form answers are fine but try to recall as closely as possible what the main points mentioned were. (Hint: List the rules first then come back and elaborate).

Rule 1.Rule 2.Rule 3.

Rule 4.

Rule 5.

Rule 6.

Rule 7.

Rule 8.

END OF PART B

APPENDIX B
Scoring Criteria for Recall of Information Questionnaire
(RIQ)

SCORING CRITERIA

PART A

1. Joe Girard - 2 points
 - 1 point - Joe
 - 1 point - Girard (correct spelling not necessary)
2. How to Sell Yourself - 2 points
 - 1 point - Sell Yourself . . . Selling Yourself
 - 0 point - How to . . .
3. Young People - 2 points
 - 1 point - Young . . . Youth
 - 1 point - Person's . . . People
4. World's Number One New Car Salesman - 3 points
 - 1 point - World . . . World's
 - 1 point - Number 1 . . . Best . . . Most Effective .
. . . Most . . . Top . . . Greatest
5. 1979 - 1 point
 - 1 point - '79
6. 1425 New Cars One Year - 4 points
 - 2 points - 1425
 - 1 point - 14____ . . . 14,250 . . . 14,025
 - 1 point - New Cars (must say new)
 - 1 point - One Year . . . 1 Year . . . Year
. . . Twelve Months

SCORING CRITERIA

PART B - RULES

If a rule is imbedded in the tips, then score it according to the criteria given for the rules. Do not score it again when you score for the tips.

1. Be Glad You're Young - 3 points
 - 2 points - A phrase indicating and/or stating that you should be pleased . . . lucky . . . happy . . . take advantage of the fact that you are young . . . youthful.
 - 1 point - Youth . . . Youthful . . . You are Young
 - 1 point - Be Glad . . . Happy
2. Set High Goals for Yourself - 3 points
 - 2 points - A phrase indicating and/or stating that you should set goals . . . standards . . . measures for yourself, and that they are high.
 - 1 point - Goals . . . Set Goals . . . Standards
3. Be a Young Whirlwind - 3 points
 - 2 points - Be a Whirlwind . . . Human Whirlwind
 - 1 point - Whirlwind
4. Offset Your Lack of Experience - 3 points
 - 2 points - A phrase indicating and/or stating that you lack experience . . . are inexperienced and that you should offset . . . make up for . . . acknowledge . . . not worry about it.
 - 1 point - Lack of Experience . . . Inexperience . . . Experience
5. Hide Your Feelings - 3 points
 - 2 points - A phrase indicating that opinions . . . negative emotions/feelings shouldn't be expressed . . . should be left left behind . . . shouldn't be revealed . . . should be kept to oneself.
 - 1 point - Emotions . . . Feelings . . . Opinions

6. Watch Your Language - 3 points
2 points - A phrase indicating that language . . .
speech . . . verbal skills (not English)
is important . . . should be watched . .
. considered.
1 point - Language . . . Speech . . . Verbal Skills
0 point - English
7. Keep Your Eyes Open - 3 points
2 points - A phrase that indicates your eyes and
that they should be kept open . . . used.
1 point - Eyes . . . Look Around
8. Be Persistent - 2 points
1 point - Person only says persistent . . .
persistence.

SCORING CRITERIA

PART B - TIPS

In scoring the tips, points are given if the subject's response generally conveys understanding of the tip(s) discussed. Sample responses are given below each rule.

1. Be Glad You're Young (2 points maximum)
 - 1 point - being open to new ideas
 - 1 point - young people need to be trained for the management positions of tomorrow
2. Set High Goals for Yourself (3 points maximum)
 - 1 point - too many extracurricular involvements can result in your grades slipping
 - 1 point - bring your marks up
 - 1 point - demonstrate you can set high goals for yourself and live up to them
3. Be a Young Whirlwind (3 points maximum)
 - 1 point - human whirlwinds always seem to find the time to sell themselves
 - 1 point - scheduling your activities . . . putting idle moments to work
 - 1 point - maximum output . . . top performance
4. Offset Your Lack of Experience (3 points maximum)
 - 1 point - it's hard getting that first job when you have no previous experience
 - 1 point - the saying, "It's not what you know but who you know."
 - 1 point - get to know someone who works at or knows someone who works at the place you'd like to get into
5. Hide Your Feelings (2 points maximum)
 - 1 point - you want to show feelings of enthusiasm and/or confidence in your interview
 - 1 point - if you dislike something about the interviewer (eg. politics, clothes) don't show it

6. Watch Your Language (3 points maximum)
 - 1 point - using good old plain English
 - 1 point - put yourself in the interviewer's shoes and ask yourself what you'd like to hear
 - 1 point - expressing yourself simply and clearly

7. Keep Your Eyes Open (2 points maximum)
 - 1 point - items around the interviewer's office let you know something about their interests
 - 1 point - making one of the interviewer's interests yours too . . . common ground

8. Be Persistent (1 point maximum)
 - 1 point - the persistence you show in looking for a job is a good indicator of the persistence you'll show on the job

APPENDIX C

Script of Stimulus Material

SCRIPT OF STIMULUS MATERIAL

The script for the stimulus material is in the form of relaying advice via a story. It will be framed as a counsellor saying to a client, the following:

Counsellor: You know, concerning your looking for employment, something I read not too long ago by a fellow named Joe Girard might be of some help. In a book called, *How to Sell Yourself*, Joe coined what he calls, "Eight 'Young People' Rules". These rules are based on years of practical and successful selling experience. As a matter of fact, Joe holds the Guinness Book of Records distinction as the world's number-one new car salesman - up until 1979 the last I heard. He sold fourteen hundred and twenty-five new cars in one year alone - that's just about four per day, if he worked every day! Anyway, let me run through these rules for you one at a time.

First of all, Be Glad You're Young. Along with your youth and openness to new ideas, businesses know they have to hire young people and move them into the key management positions of tomorrow.

Next, Set High Goals for Yourself. It's easy to get overloaded with extracurricular involvements and let your grades slip. If this is your situation, bring up those marks and show prospective employers you have the ability to set high goals and live up to them.

Next, Be a Young Whirlwind. Joe has observed that human whirlwinds always seem to find more time to sell themselves than others. By scheduling your activities and putting idle moments to work, you'll soon find yourself performing

at maximum output.

Next, Offset Your Lack of Experience. The concern of how to crack that first job when you have no track record can be a real problem. You know the saying, "It's not what you know, but who you know", well frankly, it pays to cultivate someone who works at or knows somebody that works at the same place you'd like to get into.

Next, Hide Your Feelings. The only feelings that belong in a job interview are those of enthusiasm and confidence. If you dislike the interviewer's politics, clothes, way of talking or whatever, don't show it - or as Joe says, "You might blow it."

Next, Watch Your Language. I'm not referring to using profanities but to the practice of using good old plain English. If you are seeing a person for a job, place yourself in that person's shoes and ask yourself what you'd like to hear. Expressing yourself simply and at the same level is the goal here.

Next, Keep Your Eyes Open. If you look around the interviewer's office you're likely to see an assortment of personal and meaningful items like photographs, awards and the like. These let you know something about the person's interests and hobbies. If you make at least one of the interviewer's interests yours too, you'll be developing some valuable common ground.

And finally, Be Persistent. The kind of persistence you demonstrate in looking for a job, is a good indicator of the kind of persistence you'll likely demonstrate on the job.

APPENDIX D

Script for Gaze and Visibility Study

SCRIPT FOR GAZE AND VISIBILITY STUDY

Hello (subjects's name), thanks for coming in today. Please have a seat here and I'll fill you in on our agenda. First of all, I'd like to remind you that your participation in this study is voluntary, and that you retain the right to withdraw from the study at any time.

Now, as I mentioned in your class, this is a study assessing how persons learn information about job finding and marketing themselves in the workplace. Today, you're going to be given a short presentation concerning how you might successfully market yourself in the workplace. After the presentation, I'll be asking you some questions. I won't be in the room with you during the presentation, which is just a few minutes in length, but I'll be back just as soon as it is over. Any questions before we start? Fine.

Now, before I turn on the TV/tape recorder, remember that my instructions for you are to please attend closely to the presentation. (Experimenter turns on monitor/tape recorder and leaves lab. At the end of the presentation, the experimenter returns, turns off the monitor/tape recorder, and asks the subject to be seated at the desk).

Testing

Now, this is Part A of my questionnaire for you. It's a timed test. You have one minute and 30 seconds to work at it from the time you turn it over. The instructions are printed at the top of the test. Read them carefully as they'll help you to get through the test easier. Okay, turn over and begin. (Following the

allotted time, the experimenter indicates the time is up, takes Part A from the subject and gives the subject Part B of the questionnaire). Now, like Part A, the instructions are printed at the top of the test. Do read them over carefully before you begin. You have eight minutes to work on Part B. I'll be out of the room during that time but will return to finish up things with you. Okay, turn over and start. (Experimenter leaves room).

Debriefing

(Experimenter indicates briefly, what the experiment was about). If you would like to be contacted regarding preliminary findings from this study in March or April, please leave your name and phone number on this sheet. A copy of the "Eight 'Young People' Rules" will also be available for you at that time.

Finally, if you know anyone else participating in this study, please don't discuss the nature of the experiment with them until they've completed it, okay? Thanks for helping me out (name). (Experimenter shows subject out).

APPENDIX E

Means and Standard Deviations of RIQ Subscores by Treatment Condition

Table E-1

Means and Standard Deviations of RIQ Scores for Part A by Treatment Condition

	Treatment Condition ^a					
	HG		LG		A	
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
Part A	5.22	2.41	5.50	2.87	5.89	2.57

Note. HG = High Gaze; LG = Low Gaze; A = Audio.

^an = 18 per condition.

Table E-2

Means and Standard Deviations of RIQ Scores for Rules 1-8 by Treatment Condition

	Treatment Condition ^a					
	HG		LG		A	
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
R1	1.50	1.29	2.11	1.08	0.89	1.23
R2	1.00	1.14	1.22	1.22	1.00	1.08
R3	0.56	1.10	0.72	0.96	0.72	1.07
R4	0.44	0.92	0.56	0.92	0.17	0.51
R5	1.44	1.29	1.56	1.20	1.28	1.02
R6	1.39	1.24	1.50	1.25	1.83	1.34
R7	1.56	1.10	1.83	1.15	1.50	1.04
R8	0.94	1.00	1.22	0.81	1.56	0.87

Note. HG = High Gaze; LG = Low Gaze; A = Audio; R = Rule.

^an = 18 per condition.

Table E-3

Means and Standard Deviations of RIQ Scores for Tips 1-8 by Treatment Condition

	Treatment Condition ^a					
	HG		LG		A	
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
T1	0.44	0.51	0.78	0.73	0.28	0.57
T2	1.22	1.00	1.00	0.97	0.89	0.76
T3	0.17	0.38	0.39	0.70	0.44	0.62
T4	0.50	0.61	0.61	0.70	0.94	0.80
T5	1.17	0.62	1.00	0.69	0.94	0.64
T6	1.22	0.65	1.11	0.58	1.33	0.59
T7	1.11	0.88	1.44	0.70	1.44	0.51
T8	0.16	0.38	0.28	0.46	0.50	0.51

Note. HG = High Gaze; LG = Low Gaze; A = Audio; T = Tip.

^an = 18 per condition.

Table E-4

Means and Standard Deviations of RIQ Scores for Rules and Tips Combined 1-8 by Treatment Condition

	Treatment Condition ^a					
	HG		LG		A	
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
RT1	1.94	1.67	2.89	1.52	1.17	1.58
RT2	2.22	1.90	2.22	1.80	1.89	1.45
RT3	0.72	1.32	1.11	1.49	1.17	1.47
RT4	0.94	1.11	1.17	1.29	1.11	1.02
RT5	2.61	1.24	2.56	1.72	2.22	1.44
RT6	2.61	1.24	2.61	1.33	3.17	1.34
RT7	2.67	1.46	3.28	1.45	2.94	1.35
RT8	1.11	1.23	1.50	0.99	2.06	1.00

Note. HG = High Gaze; LG = Low Gaze; A = Audio; RT = Rule and Tip Combined.

^an = 18 per condition.

APPENDIX F

Awareness of Speaker's Gaze Questionnaire

AWARENESS OF SPEAKER'S GAZE QUESTIONNAIRE

Subject No. _____

Condition _____

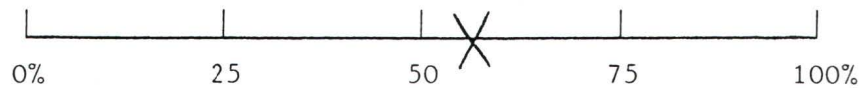
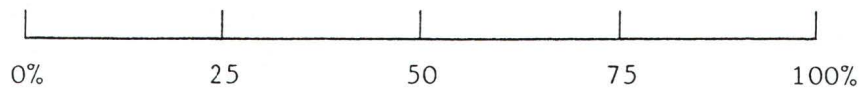
1. Were you aware of the amount of time (ie. percentage) that the counsellor spent looking at you while he was talking?

YES

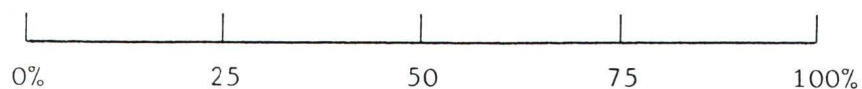
NO

(circle)

2. If YES, indicate the total estimated percentage of time the counsellor was looking at you by marking an "X" on the line below the sample.

SampleYour Response

3. If NO, take a guess at how much time (ie. total percentage) you think the counsellor spent looking at you while talking by marking an "X" on the line below (see Sample above).

Your Response

APPENDIX G

Means and Standard Deviations of the High Gaze and Low Gaze Subjects'

Awareness of Gaze Estimations

Table G-1

Means and Standard Deviations of the High Gaze and Low Gaze Subjects' Awareness of Gaze Estimations

Group	N	\bar{X}	SD
HG(84%)	16	74.19	16.21
LG(47%)	14	59.07	28.17

Note. HG = High Gaze; LG = Low Gaze.

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THE EFFECTS OF SPEAKER'S GAZE AND VISIBILITY ON
LISTENERS' RECALL OF VERBAL INFORMATION

Author



Signature

GREGORY EDWARD MCCALLUM

Name

August 12, 1985

Date