1989

The influence of eye gaze on perceptions of dominance

Michelle Ann Rodvold
San Jose State University

Order Number 1339644

The influence of eye gaze on perceptions of dominance

Rodvold, Michelle Ann, M.A.

San Jose State University, 1989

U·M·I
300 N. Zeeb Rd.
Ann Arbor, MI 48106

THE INFLUENCE OF EYE GAZE ON PERCEPTIONS OF DOMINANCE

A Thesis

Presented to

The Faculty of the Department of Communication Studies

San Jose State University

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

By

Michelle Ann Rodvold

December, 1989

APPROVED FOR THE DEPARTMENT OF COMMUNICATION STUDIES

Cal Hylton

Dr. Cal Hylton

Jack L. Ray

Dr. Jack Ray

Shawn Spano

Dr. Shawn Spano

APPROVED FOR THE UNIVERSITY

Serena M. Stanford

ABSTRACT

THE INFLUENCE OF EYE GAZE ON PERCEPTIONS OF DOMINANCE

by Michelle A. Rodvold

This thesis tested the relationship between eye gaze behavior while communicating in a dyad and perceptions of dominance. Eye gaze was differentially manipulated while talking and while listening, and gender was varied. Sixteen 3-minute video tapes were made of students having a conversation while eye gaze was manipulated, and 318 subjects from San Jose State University general education courses rated them for dominance. A 4x2x2 ANOVA showed only one significant main effect for gender; the female communicator was perceived as more dominant than the male communicator. This finding was in the opposite direction to that predicted. There were no significant interaction effects, although cell means showed scores in the general direction as predicted by the hypotheses. An analysis to determine if subjects' gender produced differences indicated no significant difference between the way men and women rated dominance.

Acknowledgments

Upon completion of this thesis, it is overwhelming to look back at all the assistance I have received from so many people. Some people were directly involved with the thesis itself, and others were indirectly involved. One of those directly involved was, of course, my advisor, Dr. Cal Hylton. Not only has he been a great advisor, but my friend as well, opening his home and offering support even though I may have been a little cranky about the seemingly unending blocks I had to confront. Along with Cal were my committee members Dr. Jack Ray and Dr. Shawn Spano. While I did not have the opportunity to work with them often, they were always available for help and friendly words of encouragement. Moreover, I feel privileged to have been the first graduate student to have had Shawn as a committee member; he provided valuable criticism and fresh insights for my thesis. And before I even got started on the thesis, Dr. Rodney Reynolds was there to talk me into Graduate School in the first place and to help me narrow my focus in order to have a workable thesis. Of course, Dr. Kathy Kellerman was a great help as well with the proposal stage and with statistical concepts. And without the assistance of my stepfather, Larry Green, I never would have gotten this all on or off the computer!

In addition to those directly involved with my thesis, there were literally hundreds of people indirectly involved. First, there were my confederates--Chris, Darcy, Pamela, and Scott--who put in many hours making the videotapes and are probably still having dreams about the grading system at SJSU! Then, there was Gary Miller who's invaluable assistance made the pilot study possible. Similar to Gary, numerous instructors in the Communication and Psychology departments opened their classrooms for me to solicit volunteers, and many of them offered extra credit as an incentive. Without their assistance I surely would not have gotten the help of 318 subjects for my study. Of the instructors who offered their assistance, I must make a special mention of my friend Pamela Findley who not only helped with attaining subjects and with data collection but who's good natured spirit helped to boost my enthusiasm during some of the rough spots. Another smiling face that kept me going belonged to Trish Marinas, the department secretary, who scheduled classrooms for the study and gave me boosts of encouragement.

No acknowledgment would be complete without mention of the people that, for years, I have loved the most. First, I would like to dedicate this thesis to my mother, Barbara Green, and to the memory of her mother, Edythe Anderson. I have learned from the way they have lived their lives that

the essential things in life are a person's spirit, family, and relationships. And while the completion of a thesis is important to me, it is through these two women that I can remain humble.

Without the love and support (both emotional and financial) of my mother, my stepfather, and my father, Ronn Rodvold, I never would have made it through this process. Equally important are my brothers, Roy Rodvold and Scott Rodvold, who have always been there for me. I will never forget the long distance calls to Roy in which we shared horror stories of assignments and stress [we both finally made it big brother!]. There were also many friends who stood by when I never had enough time. And last, but certainly not least, there is Ellen D. Ginn, one of the most significant people in my life who has lived with me for the past two years and put up with my irritability under stress. Not only did she help with stapling, data collection, and everyday living, she has had to put many activities off when I said yet one more time, "Just wait until I'm done with my thesis"! In retrospect, it really has been a group effort, and each member of this rather large group will forever have my gratitude.

TABLE OF CONTENTS

PAGE

Abstract.....iii

Acknowledgments.....iv

List of Tables.....ix

CHAPTER

1 Introduction.....1

Context of the Problem.....1

Statement of the Problem.....1

2 Review of the Literature.....4

Dominance.....4

Conceptual Definition.....4

Nonverbal Indicators of Dominance.....7

Eye Gaze.....11

Conceptual Definition.....11

Link Between Eye Gaze and Dominance.....11

Hypotheses.....22

3 Procedures.....27

Overview.....27

Operational Definitions.....27

Eye Gaze.....27

Dominance.....28

Casual Conversation.....28

Pilot Study.....29

Confederates.....29

Video Tapes.....29
Sample.....31
Measurement.....31
Analysis and Results.....32
Discussion.....33
4 Experiment.....35
Sample.....35
Measurement.....35
Procedures.....36
Statistical Analysis.....37
5 Results.....39
6 Discussion.....42
REFERENCES.....53
APPENDICES
Appendix A. Conversation Script.....57
Appendix B. Pilot Study Questionnaire.....61
Appendix C. Pilot Study Questionnaire Reversed Order.....64
Appendix D. Experiment Questionnaire.....67
Appendix E. Debriefing Note.....70

LIST OF TABLES

TABLE		PAGE
1	Factor Analysis of Dominance Measure	47
2	Analysis of Variance	48
3	Cell Means for ANOVA (main effects)	49
3a	Cell Means for ANOVA (2-way interactions)	50
3b	Cell Means for ANOVA (3-way interactions)	51
4	t-test (between male and female subjects)	52

Chapter 1

Introduction

Context of the Problem

Recently, many researchers in the fields of Communication and Social Psychology have studied the effects of eye gaze on relational communication. Eye gaze has been found to play a role in intimacy (Ellsworth & Ross, 1975), in helping behavior (Ellsworth & Langer, 1976), in attraction and credibility (Burgoon, Coker, & Coker, 1986), and in perceptions of dominance (Burgoon, Buller, Hale, & deTurck, 1984; Burgoon et al., 1986; Burgoon, Manusov, Mineo, & Hale, 1985; Ellyson, Dovidio, Corson, & Vinicur, 1980). Not surprisingly, gender differences have been discovered, particularly within the realm of eye gaze and dominance. These differences have been found both in the way men and women use eye gaze (Smith, Sanford, & Goldman, 1977) and in the way they interpret eye gaze (Burgoon et al., 1986; Smith et al., 1977). Given the past status differences between women and men, it is not surprising to find gender differences in eye behavior.

Statement of the Problem

Past research findings on the relationship between eye gaze and dominance are contradictory and, therefore, unclear. Some studies show that increased eye gaze communicates dominance (Burgoon et al., 1984, 1985; Ellyson

et al., 1980), while other studies do not show such an effect (Burgoon et al., 1986). What most of these studies fail to do is to differentiate between varied levels of eye gaze while listening and while speaking. Since there are norms governing listening behavior (ie., look at the person who is speaking), it may not be merely the amount of eye gaze. Rather, it may be whether eye gaze is present or absent while listening or while speaking that determines perceptions of dominance (Hall, 1984). Unfortunately, the listening versus talking eye gaze difference in communicating dominance does not seem to have been widely tested.

While past nonverbal research generally supports gender differences, current status changes for women necessitates further investigation of the use of nonverbal communication cues. As women gain more social status, they should also gain more dominant modes of expressing themselves nonverbally. How we communicate nonverbally can impact the goals of our communicative efforts. For instance, results of a study (Kennedy & Camden, 1983) on nonverbal behaviors of men and women suggests "that women's effectiveness in persuading others of their own ideas may be impeded by their nonverbal presentation of self" (p. 133). In some cases, the women asserted themselves, yet their nonverbal cues communicated submission. So, while we may not consciously

decode nonverbal cues, we may unconsciously respond to them. If we are to understand the precise nature of the impact that dominant and submissive modes of nonverbal communication have on communication outcomes, we must first delineate nonverbal cues expressive of dominance and submission.

If, in the future, we are to look at communication between two people and measure their use of nonverbal dominance cues, we must first determine whether or not those cues which we are coding are indeed cues expressive of dominance. Therefore, the purpose of this study is to test the relationship between different levels of eye gaze while listening versus while speaking and people's perceptions of dominance when gender is varied. Such a study is important to the field of communication as a step toward a better understanding of how the relational dimension of dominance is communicated nonverbally.

Chapter 2

Review of the Literature

Dominance

Conceptual definition. Dominance as a relational dimension of communication can be most easily understood in terms of power and control. From a synthesis of literature, Burgoon and Hale (1984) have adduced twelve conceptually distinct dimensions of relational communication, one of which is dominance-submission. Burgoon and Hale (1984) relate the dimension of dominance-submission to Osgood, Suci, and Tannenbaum's (1957) potency dimension of meaning which is a continuum of strength. They write, "Dominance-submission entails the degree to which one is powerful, controlling, and influential..." (Burgoon & Hale, 1984, p. 198). Further, dominance is related to the competence dimension of credibility "...in that one's communication of expertise and knowledge relative to another should have the effect of affording the communicator greater influence within the relationship; conversely, communicating equal or less competence than one's partner should transfer relatively greater control to the partner" (Burgoon & Hale, 1984, p. 200). Dominance can be viewed as an exertion of control, power, and influence, and the way we communicate affects others' perceptions of how powerful, controlling and influential we can be.

The display of dominance in humans has been related to the dominance displays of primates (Mazur, 1985). Mazur discusses the role of dominance in establishing heirarchies in a paper explicating the Biosocial Status Model; status within an animal heirarchy is determined through displays of dominance. The more dominant animals will use such displays as biting, screaming, and glaring to force less dominant animals into submission. Likewise, humans use similar behavior to express dominance and thus establish their status in relation to others. While, on occasion, humans have been known to physically assault one another, they are generally more subtle in their displays of dominance. For instance, a person may raise his or her voice, pound a fist on the table, and stare at the person he or she is trying to dominate rather than bite and scream.

Mazur's Biosocial Status Model proposes that when a person (A) displays dominance toward another person (B), B will experience physiological stress. In order to reduce the stress, B can either submit to A or challenge A. Submission will reduce the stress immediately, while stress reduction from a challenge is dependant upon A's response to the challenge. For example, if person A stares at person B from across the room, B can reduce the stress induced by the stare either by averting his or her eyes (submission) or by

returning the stare until A averts her or his eyes. Once A averts the stare, B's stress is reduced.

Since humans are able to have conversations, the assessment of dominant behavior is more complicated than that of primates who rely mainly on nonverbal communication to display dominance. Mazur's model asserts that dominant people are more likely to violate communication rules when interracting with less dominant people. Such communication rules include norms governing interruptions and eye gaze. Rules for interruptions are such that people should remain quiet when another person is speaking. At the same time rules governing eye gaze proclaim that people should avert gaze when no one is talking and should look at the speaker's face, especially if the speaker is looking at the listener (Mazur, 1985). According to Mazur's predictions, a dominant person will interrupt others and will look at the other person when no one is talking and look away when the other person is talking, even when the talker is looking at her or him.

When we consider status and dominance, certain people such as parents, teachers, and supervisors come to mind. Class and race have also been associated with status and power relationships involving dominance. For instance, blacks have been struggling for years to overcome the dominant position of whites in society. It is also true

that men have generally been associated with dominance, whereas women have been associated with submissiveness due to their relative status in society. Therefore, our societal roles have much to do with our status, and as Webbink (1986) points out,

> nonverbal behavior patterns reinforce the roles in socially proscribed relationships--so that it is perfectly 'natural' and wholly appropriate for a man to stare at a woman who looks down, or for an executive to look into space as the employee anxiously searches her or his face. [The] assumption here is that power dynamics exert more influence on eye behavior than personality characteristics (p. 54).

Nonverbal indicators of dominance. Much of the past research in the area of nonverbal communication has focused on gender differences, where there is likely to be obvious status differences. Gender differences have been reported in the way people use smiles (Pilkonis, 1977), in the way people interrupt one another (Argyle, Lalljee, & Cook, 1968; LaFrance & Carmen, 1980; Meltzer, Morris, & Hayes, 1971), and in the way people use eye gaze (Burgoon et al., 1984). A proposed explanation for these differences is that women generally have less status in society and have learned to communicate this lower status by responding with nonverbal submissiveness such as smiling often, letting themselves be

interrupted, and averting gaze (Hall, 1984; Pearson, 1985). Men, on the other hand, presumably express their superior status by smiling less often, interrupting others more often, and maintaining eye contact while speaking or being threatened (Hall, 1984; Pearson, 1985). It may also be the case that women are more subtle in their use of dominance cues and, thus, escape challenge. An alternative explanation is "the possibility that women's dominance displays may go unchallenged simply because they are unrecognized. It is not a matter of subtlety but of sex-role stereotypes; a woman is not expected to display visual dominance, so when she does no one notices" (Webbink, 1986, p. 68).

There is little empirical support for the relationship between smiling and dominance. Burgoon et al. (1984) found no significant effect for smiling when they had subjects rate nonverbal cues for dominance. On the other hand, females have been found to smile more while not speaking than males (LaFrance & Carmen, 1980). At the same time, subjects judged pictures of nonsmiling mouths as being dominant more often than pictures of smiling mouths (Keating, Mazur, & Segall, 1977). Additional support for smiling as indicative of a lack of dominance, albeit indirect support, is provided by Kennedy and Camden (1983).

They found that women were more likely to be interrupted while smiling than while not smiling.

Interruptions are nonverbal cues associated with dominance, and male dominance in speaking time has been found to be achieved by interruptions (Argyle et al., 1968). More recently, males were found to emit more interruptive statements than women while having a group discussion, and women were more likely to let themselves be interrupted (LaFrance & Carmen, 1980). Another study (Meltzer, Morris, & Hayes, 1971) found that persons who made successful interruptions raised the amplitude of their voice while speaking simultaneously with the person being interrupted. The increase in amplitude is suggestive of a power struggle.

In addition to smiling and interruptions, the amount of time a person talks in a conversation has been indirectly linked to perceptions of dominance. Hayes and Meltzer (1972) did a four part study in which they determined that the amount of talk-time alone was enough for people to make attributions about participants in a conversation. They had one group of subjects evaluate people in actual conversations and another group of subjects evaluate the same people based on a representation of the conversation. The representation was done by having lights represent the discussants; when a light was on, that person was talking.

The ratings of the actual conversation were similar to the ratings of the light representation.

A later study (Allgeier, 1974) utilized the lights versus actual conversation technique to test the effects of different amounts of talk-time on people's ratings on evaluative scales (happy-sad, high-low, positive-negative, etc.), attraction, and interpersonal judgement (intelligence, morality, liking, etc.). Additionally, perceptions of activity and potency were measured. There were three conversations with differing levels of talk-time (20% - 80%, 35% - 65%, and 50% - 50%). A main effect for talk-time was found. Potency (associated with dominance) ratings were higher for the discussants who talked 80%, 65%, and 50% of the time than for those who talked 20%, 35%, and 50% of the time. These results imply that the overall amount of time a person holds the floor in a conversation may influence perceptions of potency and thus of dominance; perceptions of dominance increase as the amount of time a person talks increases. Unfortunately, no studies have been done exploring a direct link between talk-time and perceptions of dominance.

Although there is little conclusive support for nonverbal indicators of dominance, the research discussed so far indicates that a person may express dominance through a lack of smiling, interruptions, and talking more. In

addition, eye gaze may be a factor in determining perceptions of dominance. Eye gaze and research connecting eye gaze to perceptions of dominance will be discussed in more detail in the next section.

Eye Gaze

Conceptual definition. Eye gaze has been studied in relation to intimacy (Ellsworth & Ross, 1975), conflict (Lochman & Allen, 1981), helping behavior (Ellsworth & Langer, 1976), and perceptions of dominance (Burgoon et al., 1984, 1985, 1986; Ellyson et al., 1980; Smith et al., 1977; and Thayer, 1969). Unfortunately, terms such as eye gaze and eye contact have been used without much specificity. A direct gaze between intimates may be qualitatively different than a direct gaze between strangers. Additionally, eye gaze may take the form of a glare, with eyebrows knit and eyes squinted, as when a parent is scolding a child. On the other hand, eye gaze may take the form of an invitation as when a parent is waiting for a child to tell about an experience. Webbink (1986) points out that "it is now important for researchers to discriminate as much as possible between types of looking behavior and to isolate the eye behavior in which they are most interested" (p. 169).

Link between eye gaze and dominance. Eye gaze has long been associated with the display of dominance if we consider

the primitive behavior of the animal world; dominant animals will pose a threat by staring at another animal. The more submissive animal will avert its eyes, thus affirming the dominance of the other animal (Eakins & Eakins, 1978). It has been proposed that humans engage in similar behavior. Moreover, the blank stare (an extended gaze in the absense of conversation) closely approximates animal threat behavior and has the potential for inducing a direct response. People may respond to overt dominance cues either by submitting or by challenging. With research to date, it is difficult to determine how people actually respond communicatively to dominance cues, specifically to eye gaze, since we do not have clearly delineated cues to test for such responses.

A study done by Thayer (1969) tested the effects of gaze duration on people's perceptions of the gazer. In the extended looking condition the confederate gazed at a subject for three 58-second intervals and looked away for three 2-second intervals, while in the brief looking condition the confederate gazed at the subject for three 2-second intervals and looked away for three 58-second intervals. Subjects rated the extended lookers as more dominant than brief lookers. Additionally, subjects perceived that the extended lookers would judge the subjects to be less dominant than would the brief lookers.

A more recent study on the effects of gaze in the absence of conversation (Smith et al., 1977) varies gender in a natural setting. Two male and three female confederates stared at 16 female and 16 male students sitting alone in a college library for 15 minutes each. Results show that the female subjects left sooner and more often than male subjects, and they were less likely to return the stare than were male subjects. Also, females stayed for a shorter length of time when it was a male starer while males stayed for a longer time. On the other hand, the length of time stayed for males and females was the same when it was a female starer. The length of time stayed may be explained in terms of perceived power of the confederate. Since females are generally perceived to have less power and to be less dominant than males, the female confederates may have posed less of a threat to the subjects. Further, males are generally more powerful in society, so a stare from a male may have been interpreted by the subjects to be a threat or a challenge of dominance. As a result, the females reacted to the male stare by leaving earlier, and the males reacted by staying longer and by returning the stare as a sort of counter threat.

There are obvious differences between how one might react to extended gazes (stares) from strangers in the absence of verbal communication and how one might react to

different levels of gaze from a person when engaged in a conversation. First, the stare directly violates rules of normal gaze behavior between strangers, and the person being stared at must search for a possible explanation for the stare. Second, with all the violence in the world, one is more likely to have a defensive reaction to the stare of a stranger. Finally, there is much ambiguity when a stranger stares at us; we lack information on which to base any situational attributions about the stare. In a conversation, however, if a person violates the norms of gaze behavior, we may not be as acutely aware of the cause of any discomfort that is produced. Instead, we may attribute our discomfort to a more general observation that there is something odd about the behavior of the other person.

Attribution theory, specifically Correspondent Inference theory (Jones & Davis, 1965; Jones & McGillis, 1976), would predict that we are more likely to pay attention to behavior which violates norms and more likely to make a personal attribution about another person when his or her behavior has no obvious situational cause. Moreover, Howard (1985) asserts that "the more socially undesirable a behavior, the more this behavior is thought to inform the observer about distinctive attributes of the actor" (p. 468). Therefore, if a person's eye gaze behavior violates

the norms called for by the situation, personal attributions about the violator are likely to result in order to explain his or her behavior.

Burgoon and colleagues (Burgoon et al., 1984, 1985, 1986) have done a series of studies on the relational messages associated with gaze behavior and other nonverbal cues. In the first study (Burgoon et al., 1984) eye gaze, smiling, body lean, proximity, and touch were manipulated by training two confederates (one male and one female) to use different levels of each nonverbal cue. For the gaze condition, high gaze was defined as almost constant eye gaze and low gaze was defined as almost constant gaze aversion. Video tapes were made of the confederates communicating in a dyad so that only the confederate to be rated could be viewed frontally. Then subjects viewed 2 out of the forty 30-second videos without hearing the sound and responded to a questionnaire measuring their perceptions of the confederates' use of "intimacy, immediacy-nonimmediacy, emotional arousal/composure/formality, and dominance-submission messages" (p. 364). As predicted, "increases in eye contact communicated greater intimacy, immediacy, and dominance" (Burgoon et al., 1984, p. 365). Further analysis of gender effects show that the male confederate was rated as communicating more detachment and control than the female confederate. The gender difference, however, may have been

due to characteristics of the confederates since there was only one male and one female confederate.

The next two studies (Burgoon et al., 1985, 1986) were aimed at testing two contrasting explanations of the effects of gaze on social perceptions and outcomes. One explanation is found in the social meaning model which claims that we attach clear meaning to different levels of gaze such that gaze alone will account for our reactions to it. If the social meaning model is accurate, then subjects should respond to eye gaze the same whether the gazer is a rewarding or a nonrewarding person. Another explanation is found in the nonverbal expectancy violations model which claims that "...normative behaviors are expected in social interactions with strangers and that violating these expectations produces different results depending on whether the violator is deemed highly 'rewarding' or 'nonrewarding'" (Burgoon et al., 1986, p. 495). If the nonverbal expectancy violations model is accurate, then subjects should respond to eye gaze differently depending upon whether the gazer is a rewarding or a nonrewarding person.

To test these two explanations, the interview paradigm and similar methods were used in both studies (Burgoon et al., 1985, 1986). Two female and two male confederates were trained in the use of three different levels of gaze behavior. In the *low gaze* condition the confederates gazed

only 10% of the time. *Normal gaze* was between 40% and 60%, and the confederates gazed at the subject 90% of the time in the *high gaze* condition. Acting as interviewees for a job, the reward value of the confederates was manipulated by having either high or low qualifications for the job, thus establishing the rewarding and nonrewarding conditions, respectively. In sum, the three independent variables were gender, reward value, and eye gaze behavior of the confederates along with gender of the subjects who acted as interviewers.

Once the interviews were completed, the subjects responded to questionnaires which measured their perceptions of the interviewee's credibility, hireability, attractiveness (task, social, and physical), and relational communication (which included a measure of dominance). Results of the first study (Burgoon et al., 1985) showed a low, but significant, eye gaze effect on dominance; as eye gaze increased, confederates were perceived to be more dominant. There was no significant main effect for reward on the dependent measures. Results of the second study (Burgoon et al., 1986), however, showed significant effects for reward value on the dependent measures although there was no significant effect for eye gaze alone on perceptions of dominance. Specifically, a significant gaze by reward by gender interaction was found on dominance:

> In [the] high reward condition, males and females differed significantly, with high gaze expressing dominance by males, submissiveness by females (M=4.67 for males, M=3.40 for females). In the low reward condition, although high gaze was seen as far less dominant by males (M=3.88) and more so by females (M=4.38), these differences were not significant; a larger difference appeared in the normal gaze level, with low reward males achieving their highest dominance score (M=4.46) and females being seen as most submissive (M=3.04) (Burgoon et al., 1986, p. 517).

The results of this last study (Burgoon et al., 1986) support the nonverbal expectancy violations model since it seems that interpretations of eye gaze may be based more on the reward value of the communicator than on levels of eye gaze alone. The three studies (Burgoon et al., 1984, 1985, 1986), however, are in conflict. The first two (Burgoon et al., 1984, 1985) found increased eye gaze to communicate more dominance, while the third study (Burgoon et al., 1986) found just the opposite. In addition, the second and third studies (Burgoon et al., 1985, 1986) found opposite results for reward value.

An obvious problem with the last two studies (Burgoon et al., 1985, 1986) is that the context of the studies may have inhibited personal attributions; subjects may have been

more likely to attribute the confederates' behavior to the situation (e.g., the stress of an interview), rather than to personal dispositions of the confederates (e.g., dominant). Another obvious problem is that the subjects were involved in the conversations, so ratings of dominance may have been biased by an inadvertant comparison to self. Moreover, the subjects' own gaze aversion may have hindered their ability to detect differences in the confederates' gaze behavior. At the same time, Webbink (1986) points out that "observers' and receivers' measurements of 'on-face and off-face gazes' have been found to be reliably similar" (p. 172). While the first study (Burgoon et al., 1984) utilized subjects who were not participants in the conversation, the video tapes that were viewed were only 30 seconds long, and the person being viewed was listening to instructions given by the other person in the dyad, rather than talking as well.

What each of the previously mentioned studies (Burgoon et al., 1984, 1985, 1986) failed to do was to vary eye contact while listening versus eye contact while speaking. To qualify the association of eye gaze and dominance, Hall (1984) points out that "relatively more gaze while speaking and relatively less while listening occur in individuals of dominant personality or of dominant social standing within the dyad. The less-dominant person shows the opposite

pattern" (p. 82). Unfortunately, there is little empirical support for this assertion.

Ellyson et al. (1980) did a two part study which provides some support for the speaking-listening eye gaze difference. Subjects (all female) obtaining median scores on a scale for control orientation (need to control others) were used. The subjects were told that the person they would be talking to (female confederate) was either higher or lower in status than themselves. There was also a control condition where the confederate was not assigned a status difference. The eye gaze behavior of the confederates was controlled with a mild electric shock so that in all conditions, the confederate gazed at the subject 48% of the time when the subject was talking and 68% of the time when the subject was listening. The members of each dyad (one subject and one confederate) were to reach consensus on three discussion tasks. The visual behavior of both the subject and the confederate was recorded by two assistants.

Results show that "high status subjects' rate of looking while speaking was not significantly different than their rate of looking while listening" (Ellyson et al., 1980, p. 331), but low status subjects did gaze more while listening than while talking. Further analysis shows that high status subjects gazed more while talking than did the

low status subjects, and, overall, subjects gazed more while listening than they did while talking.

The second part of this study had no confederates. Female subjects for this study rated either high or low on the control orientation measure. Three conditions were used containing dyads of all high control orientation subjects, all low control orientation subjects, or dyads with one high and one low control orientation subject. The subjects performed the same task as the first part of the study and their visual behavior was recorded. Again, subjects, overall, gazed at their partners more while listening than while talking. On the other hand, high control oriented subjects deviated from this pattern by not showing a reliable difference between the rate of gazing while talking and while listening. Between groups, however, high control oriented subjects had the highest rate of gazing while talking and low control oriented subjects had the highest rate of gazing while listening.

If status and need to control others are indeed associated with dominance, then this study (Ellyson et al., 1980) supports the assertion that there is a difference in talking-listening eye gaze behavior when dominance is a factor. It seems that dominant people gaze more when they talk and less dominant people gaze more when they listen.

Whether or not people perceive this difference is another issue.

The present study explores people's perceptions of dominance as it relates to eye gaze behavior. The following section presents the ten hypotheses that were tested in this attempt to explore eye gaze when talking and listening as it interacted with the gender of interactants and observers. While the Burgoon et al. (1984) study utilized 30-second video tapes with the person evaluated only listening, the present study used 3-minute video tapes, and the person evaluated talked as well as listened. Unlike the Burgoon et al. (1985, 1986) studies, the subjects in the present study were not participants in the conversation. In addition, eye gaze was manipulated for talking and for listening. The present study differed from the Ellyson et al. (1980) study in that male and female confederates and subjects were used. Moreover, the Ellyson et al. (1980) study tested for amounts of eye gaze when status differed, while the present study tested for perceptions of dominance when eye gaze differed.

Hypotheses

The Ellyson et al. (1980) study provides some support for the assertion that dominant people gaze more while talking and less while listening than less dominant people. By not gazing while listening, the dominant person is violating the norm of supportive looking behavior which

Mazur (1985) asserts is the right of the dominant person. Moreover, gazing while speaking can be a sign that the person is in command of what he or she is saying. As a result, his or her credibility should be enhanced along the competence dimension affording relatively greater control over the interaction (Burgoon & Hale, 1984).

Hypothesis 1

A person who averts gaze while listening and gazes at the other person while talking in a dyad will be perceived as more dominant than persons who gaze constantly.

Hypothesis 2

A person who averts gaze while listening and gazes at the other person while talking in a dyad will be perceived as more dominant than persons who avert gaze constantly.

Hypothesis 3

A person who averts gaze while listening and gazes at the other person while talking in a dyad will be perceived as more dominant than persons who gaze only while listening.

Since the strongest support for the talk-listen eye gaze difference seems to be in the effect of eye gaze while talking, a person who has high eye gaze when he or she is talking should still be perceived as dominant when he or she also gazes while listening. However, he or she should not be perceived as highly dominant as the person who averts

gaze while listening, because the eye gaze while listening norm will not have been violated.

Hypothesis 4

A person who gazes constantly in a dyad will be rated higher in dominance than persons who do not gaze at all.

Hypothesis 5

A person who gazes constantly in a dyad will be rated higher in dominance than persons who gaze only while listening.

When people never look at us in a conversation, we may interpret their behavior as disinterest in what we are saying. It is generally considered rude to display disinterest and only dominant people are allowed to get away with such behavior (Mazur, 1985). On the other hand, a lack of eye gaze while speaking may indicate a lack of knowledge and self confidence in what the person is saying which would lower perceptions of credibility and, therefore, dominance. So, while it may be dominant to violate the norm of gazing while listening, dominance is tempered by the lack of gaze while talking.

Hypothesis 6

A person who does not gaze at all in a dyad will be rated higher in dominance than persons who gaze only while listening.

Gazing while listening is a norm for supportive communication. To gaze at another person while she or he is talking is to be respectful of her or him as a person. At the same time, looking away while talking may decrease credibility and thus be a sign of deference to the authority or dominance of the other person. Following this line of reasoning, the person who gazes at another while listening and looks away while talking is essentially saying that the other person is more important than herself or himself.

Hypothesis 7

A person who gazes only while listening will be rated lower in dominance than any other condition.

Gender differences have often emerged in past nonverbal communication research. These differences may not be related to actual behavior so much as they are related to interpretations of behavior based on sex role expectations. Dominance is associated with masculinity which in turn is associated with men. At the same time, submissiveness is associated with femininity and females. Therefore, men are more likely to have their behavior interpreted as dominant than are women.

Hypothesis 8

Men will be rated higher in dominance than women.

Since it may be that a person's perceived dominance may be contingent upon the relative status of the person with whom he or she is interacting, and men are generally afforded more status than women, the following hypotheses were formulated.

Hypothesis 9

People will be rated higher in dominance when interacting with a woman than when interacting with a man.

Hypothesis 10

Female subjects will rate both male and female discussants higher in dominance than will male subjects.

Chapter 3

Procedures

Overview

This study tested the effects of eye gaze while listening versus eye gaze while speaking on perceptions of dominance. In addition to eye gaze, gender of the confederates and gender of the subjects (observers) were treated as independent variables. Subjects viewed 3-minute video tapes of confederates engaged in a casual conversation about San Jose State University's grading system and responded to a measure of dominance. In addition to the dominance measure, a pilot study tested for perceptions of talk-time and the eye gaze manipulation.

Operational Definitions

Eye gaze. Eye gaze is defined as looking at the other person's eyes with relaxed, fully opened eyes and without excessive eyebrow movement, neither raised nor furrowed. High eye gaze is defined as almost constant eye gaze with only a few brief 2-3 second glances away from the eyes of the other so as not to appear abnormal. Contrarily, low eye gaze is defined as almost constant gaze aversion; the eyes are looking away from the other person's face. Similarly, to reduce abnormal appearances, the gaze aversion was interspersed with a few brief 2-3 second glances at the other person's eyes.

Dominance. Dominance is operationally defined as a cumulative score of 4-28 obtained from responses to the following four 7-point Likert scales extracted from Burgoon and Walther (1989). Previous reliability was .74:

1. A is dominating the conversation.

Strongly Agree: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :Strongly Disagree

2. A is trying to influence B.

Strongly Agree: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :Strongly Disagree

3. A acts like A is more powerful than B.

Strongly Agree: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :Strongly Disagree

4. A is in control of the relationship.

Strongly Agree: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :Strongly Disagree

The scores were reversed for the analysis.

Casual conversation. The conversation was between two college students. Since past research (Haas & Sherman, 1982) shows that "co-workers reportedly talk most frequently about work" (p. 339), and school can be considered a student's place of employment, the topic of the conversation was school related. Specifically, the topic was on the grading system at San Jose State University. Each participant (confederate) in the conversation remained neutral on the topic while discussing the pros and cons of the plus/minus grading system. They followed a script (Appendix A) which was written as though they had already become acquainted with one another and had just begun

discussing the topic. The discussion lasted for 3 minutes and was video taped as soon as the confederates became proficient at following the script and manipulating their eye gaze.

Pilot Study

Confederates. Four volunteer student confederates (two male and two female) from San Jose State University's upper division and graduate communication courses were asked to participate in this study.

Video tapes. Each confederate was trained for four eye gaze treatments: High eye gaze while talking and while listening; low eye gaze while talking and high eye gaze while listening; high eye gaze while talking and low eye gaze while listening; and low eye gaze while talking and while listening. They also memorized a script of a casual conversation. They were required to know both parts of the script, and no interruptions during the conversations were allowed. Additionally, they were trained to display little facial expression so as to minimize attributions based on excessive facial expressions.

Once the confederates had memorized the script, were comfortable with the eye gaze manipulation, and had practiced keeping facial expressions to a minimum, they were placed in dyads varying gender for each eye gaze condition. Gender was varied along with the eye gaze manipulation so

that there was one all male dyad, one all female dyad, and two mixed gender dyads for each of the four eye gaze conditions making a total of 16 treatments:

Male observed/Female partner

1. Listen-gaze Talk-avert
2. Listen-avert Talk-gaze
3. Listen-avert Talk-avert
4. Listen-gaze Talk-gaze

Female observed/Male partner

5. Listen-gaze Talk-avert
6. Listen-avert Talk-gaze
7. Listen-avert Talk-avert
8. Listen-gaze Talk-gaze

Male observed/Male partner

9. Listen-gaze Talk-avert
10. Listen-avert Talk-gaze
11. Listen-avert Talk-avert
12. Listen-gaze Talk-gaze

Female observed/Female partner

13. Listen-gaze Talk-avert
14. Listen-avert Talk-gaze
15. Listen-avert Talk-avert
16. Listen-gaze Talk-gaze

A 3 minute video tape was made for each of the 16 treatments. The scripted conversations ensured that each

condition was the same in terms of the content of the conversation and the amount of talk-time distributed between the members of the dyad. The face of the confederate to be judged was visible while only the back of the other confederates' head was seen on video. The video tape showed only the two confederates' head, neck and shoulders to control for any possible effects of hand and arm gestures, body lean, and distance. Control for reward value was addressed by employing confederates who were students of approximately the same age and level of attractiveness.

Sample. Students enrolled in general education communication courses at West Valley College were asked to volunteer for the pilot study. They were allowed to use class time to meet in the lab in groups of five to view the video tape and respond to the questionnaire. They were told that this was a study of social perceptions of people engaged in casual conversation. Five subjects were solicited for each of eight conditions (N=40). There were four eye gaze conditions with a woman talking to a man and four eye gaze conditions with a man talking to a woman.

Measurement. To measure the subjects' perceptions of dominance, talk time, and the eye gaze manipulation, a six item questionnaire was used (Appendix B). Instructions for how to respond to the items were included on the questionnaire. The first four items were obtained from a

questionnaire created and used by Burgoon and Walther (1989) and had a previous reliability of .74. These items measured perceptions of dominance with seven point Likert scales of strongly agree to strongly disagree: A is dominating the conversation; A is trying to influence B; A acts like A is more powerful than B; A is in control of the relationship. The fifth item (Both people talked for about the same length of time) was used to test perceptions of talk time. Low scores indicated that the talk time was perceived as being equal. Finally to determine how aware they were of the eye gaze manipulation, they were asked to circle one of the following: Person A made eye contact a lot both while listening and while speaking; Person A made very little eye contact at all; Person A made eye contact a lot while talking but very little while listening; Person A made a lot while listening but very little while talking; I did not notice the person's use of eye contact. To control for possible order effects, half of the subjects received questionnaires with item 6 (perceptions of manipulation) as the first item followed by perceptions of dominance and talk time (Appendix C). Additionally, subjects were asked their gender, age, major, and year in school.

Analysis and results. The pilot study data was analyzed using t-tests to contrast group means for the dominance measures. In addition, a t-test was used to

compare scores between responses to the male and female confederates. Eye gaze manipulation responses were counted, and mean scores for talk-time were obtained.

The *t*-tests for the dominance measure showed no significant difference between any of the groups. The range of the group means was 3.5 - 4.45. A *t*-test between those subjects who evaluated the female confederate and those who had evaluated the male confederate showed no significant difference in perceptions of dominance either ($t(38)=.86$, $p>.05$). The manipulation check for eye gaze indicated that of those who perceived the behavior a strong majority (66%) identified it correctly. Eight individuals indicated they did not notice the eye gaze employed. Mean scores for talk-time ranged from 2.4 to 4.2. The overall mean score was 3.5 or *slightly agree* for talk-time being equal.

Discussion. The main purpose of the pilot study was to test the video tapes. Since there was such a small number of subjects involved, it was difficult to interpret the results. Lack of a significant difference for the dominance measure may have been due to the small groups, or it may have been due to inadequate tapes. Also, the dominance measure did not have additional items to draw subjects' attention away from the purpose of the study. Moreover, the subjects were from communication courses with the same instructor and may have been taught to pay attention to eye

contact. At least it was concluded that the manipulation was effective since a majority of the subjects perceived the manipulation correctly. The most interpretable results were for perceptions of talk-time. The mean score showed that the subjects generally agreed that talk-time was equal. This finding is not surprising, since the confederates each had approximately the same number of words on the script. Despite the limitations noted, the pilot study appeared to provide sufficient grounds for retaining the stimulus tapes and proceeding with the study.

Chapter 4

Experiment

Sample

Students from San Jose State University's general education communication and psychology courses were asked to volunteer for this study. They were asked to sign up for one of 16 treatments to be held outside of their normal class time. They were told that (1) the study was concerned with social perceptions of people engaged in casual conversation (2) it involved watching a 3 minute video and responding to a brief questionnaire and (3) would take a total of about 10 minutes of their time. Volunteers were solicited until 19-21 subjects were obtained for each treatment (for a total of 318 subjects). Their ages ranged from 18 to 50 years old with a median age of 21.

Measurement

To measure the subjects' perceptions of dominance, an eight item questionnaire was used (Appendix D). All items utilized 7-point Likert scales. Instructions for how to respond to the scales were included on the questionnaire. The same scale for perceptions of dominance was used as in the pilot study. On this questionnaire, items 2, 5, 7, and 8 measured perceptions of dominance: A is dominating the conversation; A is trying to influence B; A acts like A is more powerful than B; A is in control of the relationship.

Items 1, 3, 4, and 6 were "filler statements" used to draw subjects' attention away from the purpose of the study: A is comfortable talking with B; A seems relaxed and composed; A is interested in what B has to say; A is acting bored by the conversation. There were 1-7 points possible for each item. The scales were reversed for scoring with 7 points for strongly agree to 1 point for strongly disagree. The cumulative scores ranged from 4-28 with a high score being more dominant and a low score being less dominant. In addition to these 8 items, the subjects were asked to give demographic information (gender, age, major, and year in school).

Procedures

When the subjects arrived at their assigned time for one of the 16 treatments, they were greeted by the researcher and asked to take a seat in front of a VCR unit. Once everyone had arrived, they were told that they would be viewing a 3 minute video tape of a conversation between two college students. Next, they were told that the video tapes were made so that only the person whom they were to evaluate was facing the camera. Then, the video tape was run, and the questionnaires were handed out. The researcher explained the questionnaire stating that their responses were strictly anonymous. They were asked to respond to each item about the person facing them in the dyad on the video

and told that that person was A while the person whose back was turned was B. As they handed back the questionnaires, the researcher thanked them for their participation, had them sign in for extra credit, and handed them the notification (Appendix E) explaining where and when they could find out the results of the study, as well as the specific purpose of the study. Additionally, they were asked not to discuss the study with any of their classmates until the results were posted, since it would take some time to collect all of the data.

Statistical Analysis

The data were analyzed using a 4 x 2 x 2 analysis of variance in which eye gaze while talking and while listening, gender of the person evaluated, and gender of the dyadic partner were varied. The dependent measure for this study was perceptions of dominance. The scores on the dominance measure were reversed so that: strongly agree=7; agree=6; slightly agree=5; neither=4; slightly disagree=3; disagree=2; strongly disagree=1. The dominance measure was first factor analyzed using the alpha extraction technique. The ANOVA tested main effects for eye gaze, gender of evaluated person, and gender of the dyadic partner. In addition to the main effects, one three-way and 3 two-way interaction effects were tested. Finally, cell means for the study were obtained for contrasts. Subjects were

blocked for gender in order to obtain any differences between male and female observations. An uncorrelated *t*-test was employed for this analysis. Significance levels for all contrasts were set at .05.

Chapter 5

Results

The eigenvalue specification was set at 1.0 for the factor analysis of the dominance measure and revealed a single factor solution (Table 1). A rotation was not performed since there was only one factor. The correlation coefficients showed that three of the items were highly loaded on the factor (.568, .756, .765), while one item had a fairly low correlation coefficient of .367. Due to this discrepancy, the item with the low correlation (A is trying to influence B) was not used in subsequent analyses.

The ANOVA was run using the sum of the three dominance items as the dependent variable and the four gaze conditions, gender of the person observed, and gender of the dyadic partner as the independent variables. Results (Table 2) show only one significant main effect for the gender of the person observed ($F(1, 316)=11.649$, $p=.001$). The direction, however, is opposite to that predicted by Hypothesis 8 (Men will be rated higher in dominance than women) since the cell means show the woman as rated higher in dominance ($M=10.51$) than the man ($M=8.98$). There were no significant interaction effects.

While the ANOVA showed only the one significant effect for gender of the person observed, a look at the cell means (Table 3) shows that cells related to hypothesis 1 - 3 and 9 at least lean in the predicted direction.

Hypothesis 1: A person who averts gaze while listening and gazes at the other person while talking in a dyad will be perceived as more dominant that persons who gaze constantly.

Listen-avert/talk-gaze=10.49 > listen-gaze/talk-gaze=9.36

Hypothesis 2: A person who averts gaze while listening and gazes at the other person while talking in a dyad will be perceived as more dominant than persons who avert gaze constantly.

Listen-avert/talk-gaze=10.49 > listen-avert/talk-avert=9.44

Hypothesis 3: A person who averts gaze while listening and gazes at the other person while talking in a dyad will be perceived as more dominant than persons who gaze only while listening.

Listen-avert/talk-gaze=10.49 > listen-gaze/talk-avert=9.65

Hypothesis 9: People will be rated higher in dominance when interacting with a woman than when interacting with a man.

Female partner = 9.78 > male partner = 9.70

In short, those who were rated highest in dominance were those who gazed while talking and averted gaze while listening ($\underline{M}$=10.49). Second highest ratings were for those who averted gaze while talking and gazed while listening ($\underline{M}$=9.65), while those who averted gaze constantly were third ($\underline{M}$=9.44). Finally, the lowest dominance ratings were received by those who gazed constantly ($\underline{M}$=9.36).

Hypothesis 10: Female subjects will rate both male and female discussants higher in dominance than will male subjects.

Female $\underline{M}$ = 14.1412 > male $\underline{M}$ = 13.5461

In order to test this hypothesis an appropriate $\underline{t}$-test was performed (see Table 4). Again the group means suggest

a difference in the predicted direction. The difference, however, is not significant ($t(316) = -1.07$, $p=.142$).

Chapter 6

Discussion

Past research has revealed differences in perceptions of dominance when the amount of eye gaze is varied. There are a number of possible reasons why the present study failed to replicate such differences. The pilot study, conducted prior to the experiment testing the hypotheses, was designed as a manipulation check of the independent variable. As noted in Chapter 3, a strong majority of the participants correctly identified the type of eye gaze displayed on the video tapes. This finding was deemed a sufficient rationale for proceeding with the stimulus tapes produced for the study. On the other hand, 34% were unable to identify eye gaze type correctly. Such a proportion represented within the experiment may have been a serious threat to its internal validity.

At the least, there should have been a significant difference between the groups who gazed constantly and those who averted gaze, since they were the extremes in amount of eye gaze. For instance, Burgoon et al. (1984, 1985) found dominance associated with eye gaze when the overall amount of eye gaze was manipulated; high eye gaze was perceived as more dominant than low eye gaze. The mean scores for the present eye gaze manipulation, however, showed a very small and opposite difference between these two groups (gaze

constantly = 9.36 < avert gaze constantly = 9.44). At the same time, it could be that eye gaze is a more contextual nonverbal cue. That is, perhaps eye gaze must be perceived along with other nonverbal cues such as eyebrow movement and other facial expressions in order for people to have a better context in which to identify dominance. On the other hand, the highest mean score (10.49) was found for gazing while talking and averting gaze while listening. This finding at least lends credence to further investigation into the possibility of a talking/listening difference in perceptions of dominance.

Another explanation for lack of results in the present study can be found in the Burgoon et al. (1986) study. This study tests and lends support to the nonverbal expectancy violations model which "...holds that normative behaviors are expected in social interactions with strangers and that violating these expectations produces different results depending on whether the violator is deemed highly 'rewarding' or 'nonrewarding'" (Burgoon et al., 1986, p. 495). The present study, by holding reward value of the communicator constant, may have neglected a necessary variable upon which people base judgments of dominance. It may very well be that eye gaze alone is not a powerful variable and plays a small role relative to reward value in perceptions of dominance.

Also contrary to the Burgoon et al. (1986) study, the present study did not require the subjects' involvement in the interaction. Rather, the subjects were passive observers, and therefore did not have the opportunity to experience any physiological changes such as discomfort. Recall that Mozur's Biosocial Status Model (1985) predicts that dominance displays produce stress in the dominated person, and the stress precipitates a reaction. Ultimately, without stress and the need for a reaction, there may also have been no need for the subjects to make attributions.

Among other possible limitations to this study are unknown perceptions stimulated by the video tapes. First, the conversation may not have appeared natural enough. For instance, the conversation may have sounded memorized and, thus, not casual as was intended. Equally important, the fact that it was intended to be a casual conversation rather than an argument or an interview gave subjects no reason to assume that one person would or should be more dominant than the other. Ironically, control designed to increase internal validity in this study may have offset differences produced by variables other than "pure" eye gaze. In other words, variables not present in this study, such as the interview situation or assigned reward value, may have interacted with eye gaze in other studies. In addition, the

eye gaze manipulation may have appeared too extreme. Unfortunately, no check on such a possibility was performed.

Hindsight suggests that the confederates could have been tested for their level of dominance prior to producing the video tapes. The male confederate who was evaluated seemed to be somewhat more softspoken than the other confederates. In contrast, the female confederate who was evaluated was more comfortable with being video taped since she had taken drama classes and was generally an outgoing person. While there was an attempt to control tone of voice and facial expression, these still may have had an effect. The difference between the confederates themselves could have been controlled by having more than two people who were to be evaluated. Unfortunately, it was difficult to get a variety of volunteers for the confederate roles. Also, more confederates would have meant many more cells and subjects than time and resources allowed.

Additionally, some accidental variance across treatments may have had an effect on the results. The sessions were set up so that subjects were often waiting in the hall while the group before them was still in a session. As a result, they may have heard the video tape through the door. Moreover, the video equipment malfunctioned during some sessions and may have created a distraction when the researcher had to make adjustments. Additionally, in some

sessions the tape had to be rewound when sound problems were encountered.

Despite the limitations noted and in light of the cell means for dominance, future research should not discount the possibility that varied eye gaze while talking and while listening may affect perceptions of dominance. Future research in this area should make use of a natural sounding and looking conversation by testing for perceived naturalness. For instance, a setting outside of the classroom can be used with a conversation that is not memorized but follows more general guidelines. Equally important, confederates who have the same level of assertiveness should be tested and then selected. More than two confederates to be evaluated can also be used to control for individual personality differences. The use of video tapes with no sound at all such as those used by Burgoon et al. (1984) might also be considered. Perhaps future research may discount the use of video taped conversations altogether in favor of conversations that involve the subjects and manipulate reward value. Finally, future research might include other nonverbal cues such as eye brow movement, eye muscle movement, and facial expression in order to ascertain the contextual nature of eye gaze.

Table 1

Factor Analysis of Dominance Measure

Using Alpha Extraction

Initial Statistics:

VARIABLE	COMMUNALITY
Item1	.24591
Item2	.10752
Item3	.40527
Item4	.45115

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	2.14493	53.6	53.6
2	.84043	21.0	74.6
3	.65251	16.3	90.9
4	.36214	9.1	100.0

Factor Matrix:

	FACTOR 1
Item1	.56811
Item2	.36660
Item3	.75577
Item4	.58593

Final Statistics:

VARIABLE	COMMUNALITY
Item1	.32275
Item2	.13440
Item3	.57119
Item4	.58593

FACTOR	SS LOADINGS	PCT OF VAR	CUM PCT
1	1.61427	40.4	40.4

Note. Item1-Item4 represent the four questionnaire items.

Table 2

ANOVA table

SOURCE OF VARIATION	SUM SQUARES	DF	MEAN SQUARE	F	SIG. OF F
Main Effects	251.013	5	50.203	3.124	.009
GAZE	65.403	3	21.801	1.356	.256
SEXOBS	187.221	1	187.221	11.649	.001
SEXPART	.580	1	.580	.036	.849
2-way Interactions	50.062	7	7.152	.445	.873
GAZE SEXOBS	7.775	3	2.592	.161	.922
GAZE SEXPART	29.567	3	9.856	.613	.607
SEXOBS SEXPART	13.021	1	13.021	.810	.369
3-way Interactions	78.562	3	26.187	1.629	.183
GAZE SEXOBS SEXPART	78.562	3	26.187	1.629	.183
Explained	379.637	15	25.309	1.575	.079
Residual	4853.699	302	16.072		
Total	5233.336	317	16.509		

Note. Gaze = the four gaze conditions: talk-gaze/listen-gaze; talk-gaze/listen-avert; talk-avert/listen-avert; talk-avert/listen-gaze. Sexobs = the gender of the person observed and evaluated. Sexpart = the gender of the dyadic partner.

Table 3

Cell Means for ANOVA

Main Effects

GAZE:	
Listen-gaze/Talk-avert	Listen-avert/Talk-gaze
9.65 (n=80)	10.49 (n=80)
Listen-avert/Talk-avert	Listen-gaze/Talk-gaze
9.44 (n=81)	9.36 (n=77)
GENDER OF PERSON OBSERVED:	
Male	Female
8.98 (n=160)	10.51 (n=158)
GENDER OF DYADIC PARTNER:	
Male	Female
9.70 (n=158)	9.78 (n=160)

Table 3a

Cell Means for ANOVA

2-way Interaction Effects

EYE GAZE BY GENDER OF PERSON OBSERVED:

	Male	Female
Listen-gaze/Talk-avert	8.63 (n=40)	10.68 (n=40)
Listen-avert/Talk-gaze	9.88 (n=41)	11.13 (n=39)
Listen-avert/Talk-avert	8.68 (n=40)	10.20 (n=41)
Listen-gaze/Talk-gaze	8.72 (n=39)	10.03 (n=38)

EYE GAZE BY GENDER OF DYADIC PARTNER:

	Male	Female
Listen-gaze/Talk-avert	9.78 (n=40)	9.53 (n=40)
Listen-avert/Talk-gaze	10.67 (n=39)	10.32 (n=41)
Listen-avert/Talk-avert	8.90 (n=41)	10.00 (n=40)
Listen-gaze/Talk-gaze	9.47 (n=38)	9.26 (n=39)

GENDER OF PERSON OBSERVED BY GENDER OF DYADIC PARTNER:

		PARTNER	
		Male	Female
OBSERVED	Male	8.73 (n=79)	9.22 (n=81)
	Female	10.66 (n=79)	10.35 (n=79)

Table 3b

Cell Means for ANOVA

3-way Interaction Effect

	MALE PARTNER		FEMALE PARTNER	
	Male Observed	Female Observed	Male Observed	Female Observed
Lg/Ta	9.15 (n=20)	10.40 (n=20)	8.10 (n=20)	10.95 (n=20)
La/Tg	10.15 (n=20)	11.21 (n=19)	9.62 (n=21)	11.05 (n=20)
La/Ta	7.70 (n=20)	10.05 (n=21)	9.65 (n=20)	10.35 (n=20)
Lg/Tg	7.89 (n=19)	11.05 (n=19)	9.50 (n=20)	9.00 (n=19)

Note. Lg = listen-gaze; La = listen-avert; Ta = talk-avert; Tg = Talk-gaze.

Table 4

t-test for Dominance Ratings

Between Male and Female Subjects

	NUMBER OF CASES	MEAN	STANDARD DEVIATION	STANDARD ERROR
Males	141	13.5461	4.792	.404
Females	177	14.1412	5.020	.377

F VALUE	1-TAIL PROBABILITY
1.10	.283

Pooled Variance Estimate			Separate Variance Estimate		
t VALUE	DEGREES OF FREEDOM	1-TAIL PROB.	t VALUE	DEGREES OF FREEDOM	1-TAIL PROB.
-1.07	316	.142	-1.08	305.85	.141

References

Allgeier, A. R. (1974). The effects of differential amounts of talkativeness on interpersonal judgments. Dissertation Abstracts International, 35, 5209B-6193B. (University Microfilms No. 75-10, 836)

Argyle, M., Lalljee, M., & Cook, M. (1968). The effects of visibility on interaction in a dyad. Human Relations, 21, 3-17.

Burgoon, J. K., Buller, B. D., Hale, J. L., & deTurck, M. A. (1984). Relational messages associated with nonverbal behaviors. Human Communication Research, 10(3), 351-378.

Burgoon, J. K., Coker, D. A., & Coker, R. A. (1986). Communicative effects of gaze behavior: A test of two contrasting explanations. Human Communication Research, 12(4), 495-524.

Burgoon, J. K., & Hale, J. L. (1984). The fundamental topoi of relational communication. Communication Monographs, 51, 193-214.

Burgoon, J. K., Manusov, V., Mineo, P., & Hale, J. L. (1985). Effects of gaze on hiring, credibility, attraction and relational message interpretation. Journal of Nonverbal Behavior, 9(3), 133-146.

Burgoon, J. K., & Walther, J. (1989). Nonverbal expectancies and the evaluative consequences of

violations. Presented at the International Communication Association, San Francisco, CA.

Eakins, B. W., & Eakins, R. G. (1978). Sex differences in human communication. Palo Alto: Houghton Mifflin Company.

Ellsworth, P. C., & Langer, E. J. (1976). Staring and approach: An interpretation of the stare as a nonspecific activator. Journal of Personality and Social Psychology, 33(1), 117-122.

Ellsworth, P. C., & Ross, L. (1975). Intimacy in response to direct gaze. Journal of Experimental Social Psychology, 11, 592-613.

Ellyson, S. L., Dovidio, J. F., Corson, R. L., & Vinicur, D. L. (1980). Visual dominance behavior in female dyads: Situational and personality factors. Social Psychology Quarterly, 43(3), 328-336.

Haas, A., & Sherman, M. A. (1982). Reported topics of conversation among same-sex adults. Communication Quarterly, 30(4), 332-342.

Hall, J. A. (1984). Nonverbal sex differences: Communication accuracy and expressive style. Baltimore, Maryland: Johns Hopkins University Press.

Hayes, D. P., & Meltzer, L. (1972). Interpersonal judgements based on talkativeness: I fact or artifact? Sociometry, 35(4), 538-561.

Howard, J. A. (1985). Further appraisal of correspondent inference theory. Personality and Social Psychology Bulletin, 11(4), 467-477.

Jones, E. E., & Davis, K. (1965). From acts to dispositions: The attribution process in person perception. In L. Berkowitz (Ed.), Advances in Experimental Social Psychology, (Vol. 2, pp. 219-266). New York: Academic Press.

Jones, E. E., & McGillis, D. (1976). Correspondent inferences and the attribution cube: A comparative reappraisal. In J. H. Harvey, W. J. Ickes, and R. F. Kidd (Eds.), New directions in attribution research, (Vol. 1, pp. 389-429). Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Keating, C. F., Mazur, A., & Segall, M. H. (1977). Facial gestures which influence the perceptions of status. Sociometry, 40, 374-378.

Kennedy, C. W., & Camden, C. (1983). Interruptions and nonverbal gender differences. Journal of Nonverbal Behavior, 8(2), 91-108.

LaFrance, M., & Carmen, B. (1980). The nonverbal display of psychological androgyny. Journal of Personality and Social Psychology, 38(1), 36-49.

Lochman, J. E., & Allen, G. (1981). Nonverbal communication of couples in conflict. Journal of Research in Personality, 15, 253-269.

Mazur, A. (1985). A biosocial model of status in face-to-face primate groups. Social Forces, 64(2), 377-402.

Meltzer, L., Morris, W. N., & Hayes, D. P. (1971). Interruption outcomes and vocal amplitude: Explorations in social psychophysics. Journal of Personality and Social Psychology, 18, 392-402.

Osgood, C. E., Suci, G. J., & Tannenbaum, P. H. (1957). The measurement of meaning. Urbana, IL: University of Illinois Press.

Pearson, J. C. (1985). Gender and communication. Dubuque, Iowa: Wm. C. Brown Publishers.

Pilkonis, P. A. (1977). The behavioral consequences of shyness. Journal of Personality, 45, 596-611.

Smith, B. J., Sanford, F., & Goldman, M. (1977). Norm violations, sex, and the "blank stare". The Journal of Social Psychology, 103, 49-55.

Thayer, S. (1969). The effect of interpersonal looking duration on dominance judgments. The Journal of Social Psychology, 79, 285-286.

Webbink, P. (1986). The power of the eyes. New York: Springer Publishing company.

Appendix A

Conversation Script

Conversation Script

Person 1: "Ya Know, I remember when San Jose State used the straight ABCDF grading system instead of the plus-minus system.

Person 2: "Yeh, me too."

Person 1: "It sure helped me when I was on the low end of the scale."

Person 2: "Really? How's that?"

Person 1: "Well, one time I had a very low B and, instead of it coming out as a B-, it was a regular B with a three point O.

Person 2: "Uh-huh."

Person 1: "And then an A minus comes out as an A, so you don't have to worry so much about nit-picky points all the time."

Person 2: "Yeh, I know what ya mean. It's a lot more simple that way, but the plus-minus system has its advantages too."

Person 1: "Like what?"

Person 2: "Like when you're really close to the A or B but not quite there, then you get a B+ or a C+ instead of just a B or a C."

Person 1: "Uh-huh"

Person 2: "Those extra points can sure help the old GPA in the long run."

Person 1: "I guess you're right. Both ways have their advantages and disadvantages."

Person 2: "Yeh."

Person 1: "But what I don't get, is why we even have to have grades in the first place."

Person 2: "So, how else can they tell how well we're doing?"

Person 1: "Well, I don't know. They can use different systems like....for instance, UC Santa Cruz. Instead of grades the instructors write an evaluation for each student."

Person 2: "Uh-huh."

Person 1: "It's pass/fail and then the evaluation tells how each student did in the class."

Person 2: "Yeh, but with that don't you think that, um, the instructor's attitude toward you might have a lot to do with it."

Person 1: "How?"

Person 2: "Like if you spent a lot of time with your instructors and they got to know you, then they'd have a better evaluation of you, or at least have more to say about you because you spent more time with em.

Person 1: "Yeh."

Person 2: "And if you didn't, say you were a shy student, you wouldn't really be 'out there' as far as getting to know the instructors that well or being very verbal or making yourself really noticed...I would think shy students would tend to sort of fade away, and if the instructor didn't notice them, what could they really write about them?

Person 1: "I guess you have a point. But there has to be some better way...besides having A's, B's, and C's. I think all it does is create a lot of competition between students. And not only competition because you're gonna have that no matter what you do, but I find myself thinking more about the grade that I'm gonna get, and you tend to try to please the instructor all the time for the grade, rather than really focusing on what you're learning."

Person 2: "Yeh, I know, me too, and it's really frustrating. I think especially for students who are sort of perfectionists, they have to have the A all the time."

Person 1: "Yeh, I know."

Person 2: "Whereas, I've had classes where I might have had a B or a C and actually learned more from the class than when I've gotten an A."

Person 1: "Really? Me too, and then I get down on myself for the grade instead of giving myself credit for having learned something."

Person 2: "Yeh, and sometimes the A only means it was easier for you than for the rest of the class to figure out what the instructor wanted."

Person 1: "That's another thing about grades..."

Person 2: "What?"

Person 1: "Your grade depends on how well the rest of the class does."

Appendix B

Pilot Study Questionnaire

Questionnaire

Please read the statements on the following page carefully and respond by circling the number which corresponds with how much you either agree or disagree with the statement. For instance, if you strongly agree with the statement, then circle 1. If you agree but not that strongly, then circle 2. If you agree only slightly, then circle 3. If you neither agree nor disagree, then circle 4. On the other hand, circle 5 if you slightly disagree with the statement. Circle 6 if you disagree, but not that strongly. And circle 7 if you strongly disagree with the statement. The categories are summarized as follows:

1 = strongly agree

2 = agree

3 = slightly agree

4 = neither agree nor disagree

5 = slightly disagree

6 = disagree

7 = strongly disagree

Also note that "A" is the person facing you in the conversation, while "B" is the person who's back is turned.

1. A is dominating the conversation.

STRONGLY AGREE: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :STRONGLY DISAGREE

2. A is trying to influence B.

STRONGLY AGREE: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :STRONGLY DISAGREE

3. A acts like A is more powerful than B.

STRONGLY AGREE: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :STRONGLY DISAGREE

4. A is in control of the relationship.

STRONGLY AGREE: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :STRONGLY DISAGREE

5. Both people talked for about the same length of time.

STRONGLY AGREE: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :STRONGLY DISAGREE

Please choose one of the following by circling the number:

1. Person A made eye contact a lot both while listening and while speaking.
2. Person A make very little eye contact at all.
3. Person A made eye contact a lot while talking but very little while listening.
4. Person A made eye contact a lot while listening but very little while talking.
5. I did not notice the person's use of eye contact.

Please complete the following information:

Your Gender: Female Male

Your Age:_____

Major:_____

Year in School:_____

Appendix C

Pilot Study Questionnaire

Reversed Order of Items

Questionnaire

Please read the statements on the following page carefully and respond by circling the number which corresponds with how much you either agree or disagree with the statement. For instance, if you strongly agree with the statement, then circle 1. If you agree but not that strongly, then circle 2. If you agree only slightly, then circle 3. If you neither agree nor disagree, then circle 4. On the other hand, circle 5 if you slightly disagree with the statement. Circle 6 if you disagree, but not that strongly. And circle 7 if you strongly disagree with the statement. The categories are summarized as follows:

1 = strongly agree

2 = agree

3 = slightly agree

4 = neither agree nor disagree

5 = slightly disagree

6 = disagree

7 = strongly disagree

Also note that "A" is the person facing you in the conversation, while "B" is the person who's back is turned.

Please choose one of the following by circling the number:

1. Person A made eye contact a lot both while listening and while speaking.

2. Person A make very little eye contact at all.

3. Person A made eye contact a lot while talking but very little while listening.

4. Person A made eye contact a lot while listening but very little while talking.

5. I did not notice the person's use of eye contact.

Use the instructions from the first page to respond to the following:

1. A is dominating the conversation.

STRONGLY AGREE: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :STRONGLY DISAGREE

2. A is trying to influence B.

STRONGLY AGREE: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :STRONGLY DISAGREE

3. A acts like A is more powerful than B.

STRONGLY AGREE: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :STRONGLY DISAGREE

4. A is in control of the relationship.

STRONGLY AGREE: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :STRONGLY DISAGREE

5. Both people talked for about the same length of time.

STRONGLY AGREE: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :STRONGLY DISAGREE

Please complete the following information:

Your Gender: Female Male

Your Age:_____

Major:_____

Year in School:_____

Appendix D

Experiment Questionnaire

Questionnaire

Please read the statements on the following page carefully and respond by circling the number which corresponds with how much you either agree or disagree with the statement. For instance, if you strongly agree with the statement, then circle 1. If you agree but not that strongly, then circle 2. If you agree only slightly, then circle 3. If you neither agree nor disagree, then circle 4. On the other hand, circle 5 if you slightly disagree with the statement. Circle 6 if you disagree, but not that strongly. And circle 7 if you strongly disagree with the statement. The categories are summarized as follows:

1 = strongly agree

2 = agree

3 = slightly agree

4 = neither agree nor disagree

5 = slightly disagree

6 = disagree

7 = strongly disagree

Also note that "A" is the person facing you in the conversation, while "B" is the person who's back is turned.

1. A appears comfortable talking with B.

STRONGLY AGREE: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :STRONGLY DISAGREE

2. A is dominating the conversation.

STRONGLY AGREE: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :STRONGLY DISAGREE

3. A seems relaxed and composed.

STRONGLY AGREE: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :STRONGLY DISAGREE

4. A is interested in what B has to say.

STRONGLY AGREE: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :STRONGLY DISAGREE

5. A is trying to influence B.

STRONGLY AGREE: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :STRONGLY DISAGREE

6. A is acting bored by the conversation.

STRONGLY AGREE: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :STRONGLY DISAGREE

7. A acts like A is more powerful than B.

STRONGLY AGREE: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :STRONGLY DISAGREE

8. A is in control of the relationship.

STRONGLY AGREE: 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 :STRONGLY DISAGREE

Please complete the following information:

Your Gender: Female Male
Your Age:_____
Major:_____
Year in School:_____

THANK YOU FOR YOUR PARTICIPATION.

Appendix E

Debriefing Note

Since it may take some time to collect all of the data, please do not discuss this study with any of your classmates until the results are posted. The results will be posted outside of the Communication Studies Department office in Hugh Gillis Hall as soon as I complete the analysis of the data (around the middle of July). Along with the results will be a brief explanation of the specific purpose of the study. Thank you again for your participation.