The Effects of Imagined Interaction and Planning on Speech Fluency and Message Strategy Selection.

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The effects of imagined interaction and planning on speech fluency and message strategy selection

Allen, Terre Huhn, Ph.D.

The Louisiana State University and Agricultural and Mechanical Col., 1990
The Effects of Imagined Interaction and Planning
on Speech Fluency and Message Strategy Selection

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Doctor of Philosophy

in
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and Communication Disorders

by
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August, 1990
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Abstract

The purpose of the present investigation was to examine the impact that preprocessing of conversation episodes has on speech fluency and message strategy selection. This study sought to define imagined interaction activity as a precommunicative mental rehearsal strategy. The primary focus of the present investigation was to link the rehearsal function of imagined interaction to preplanning for anticipated encounters.

The present investigation used an experimental design that included two independent variables; (1) induced rehearsal; and (2) an individual tendency to rehearse mentally, operationalized via imagined interaction. Five variables served as dependent measures for the present investigation. Three pausal variables were examined: (1) silent; (2) ah; and (3) non-ah. Speech onset latency and message strategy use also served as dependent variables.

Results indicated that there were significant main effects for silent pauses for both of the independent variables. Results also indicated that there were significant main effects for message strategy use for both of the independent variables. Main effects for onset latency were found to be significant in the induced rehearsal condition only. Conclusions for the present investigation are discussed in terms of planning for anticipated encounters.
Chapter I
The Effects of Imagined Interaction and Planning
On Hesitation Phenomena and Message Production:
An Introduction

Historically, scholars of human communication have
bifurcated the study of communication into two distinct
parts: invention, consisting of substance and arrangement,
and expression, consisting of style and delivery (Kneupper &
Anderson, 1980). Recently, scholars have suggested that
there exists a need for theoretical, critical, and
experimental research aimed at exploring the uses of
invention in the composing processes in an effort to
complement speech communication's concern with eloquence
(Kneupper & Anderson, 1980).

Young (1976) has suggested that one approach to
developing and testing a theory of invention is through the
study of heuristic procedures. Young (1976) defined
heuristic procedures as "explicit plans for analyzing and
searching which focus attention, guide reason, stimulate
memory and encourage intuition" (p.1). Kneupper and
Anderson (1980) suggested that a theory of invention that
incorporates heuristics provides an opportunity to link
theory with practice. The following dissertation is aimed
at investigating the link between invention and eloquence by
exploring the role that preplanning for interaction plays in
speech fluency.
An assumption that has provided a guiding force for much communication research is that communication behavior is accompanied by social cognition. Several scholars have argued that interpersonal transactions are more than responses to manifest signals, rather they also reflect actors' expectations, plans, and fantasies (Greene, 1984; Knapp & Miller, 1985; Planalp & Hewes, 1982; Roloff & Berger, 1982).

Knapp and Miller (1985) contended that any thought about specific aspects of our experience has the potential to affect our behavior. They also suggested that interpersonal communication scholars, from the beginning, have recognized the importance of investigating the relationship between thought and overt behavior. Greene (1984) articulated the thought/overt behavior paradigm in his "action assembly theory," which suggests that the cognitive system was developed in order to facilitate action and that its functions are best understood in terms of their implications for action. Planalp and Hewes (1982) have also articulated the importance of the role that thought plays in the communication process by investigating cognitive approaches within relational communication in an effort to expand the theoretical bases for understanding interpretive processes by which individuals define relationships.

The general recognition that interpersonal communication involves the production and processing of
messages has generated a growing body of research aimed at explaining the cognitive processes involved in message production (Greene, Lindsey, & Hawn, 1989; McLaughlin, Cody, & O'Hair 1985; Sillars 1987). Investigations of the cognitive processes involved in message production reflect Roloff and Berger's (1982) definition of communication oriented social cognitive processes, or those processes involving organized thoughts that focus on human interaction. The implicit assumption is that in order to communicate, actors must organize thoughts into messages that perceivers can comprehend. In keeping with this implicit assumption, Knapp and Miller (1985) asserted that "if communicators lack the cognitive and behavioral skills needed to elicit desired responses, their competence is sure to be called to question, both by others and by themselves" (p. 19).

One area of importance within social cognitive approaches to message production research is the area of message planning. While psycholinguists have long been interested in the role that planning plays in the speech production process, not until recently have interpersonal researchers sought to understand the role that message planning plays in social interaction.

Edwards, Honeycutt, and Zagacki (1988) have investigated the development of cognitive plans for social interaction known as imagined interactions. Imagined
interactions reflect a social cognitive process in which actors imagine and therefore indirectly experience themselves in interaction with others. Honeycutt, Zagacki, and Edwards (1989) have defined imagined interaction as a form of intrapersonal communication in which talking is directly related to the achievement of an intentional, social communicative goal. Honeycutt (1988) suggested that imagined interactions contain visual as well as verbal data, and are therefore assumed to be a mode of thinking distinct from propositional representations.

Honeycutt et al. (1989) proposed that imagined interactions allow actors to work through communication problems by affording them the opportunity to envision the act of discoursing with others while anticipating the others' responses. The actor often views how the self might respond, as well as how the self might be perceived by others in social situations. Edwards et al. (1988) contended that the concept of imagined interaction captures a dimension of pre-communicative, cognitive processes qualitatively different from processes discussed in other models of mental processes like cognitive decision-making.

Theoretically, the construct of imagined interaction is based largely on Mead's (1934) suggestion that individuals engage in internal conversations. He suggested that these internal conversations serve the purpose of allowing the actor to take the role of others in an effort to "see
ourselves as others see us." According to Manis and Meltzer (1978) this sort of pre-communicative mental activity is a form of "rehearsal" for upcoming encounters. Edwards et al. (1988) determined that communicators use imagined interactions primarily as a rehearsal for anticipated encounters. Since imagined interactions serve as a rehearsal for upcoming encounters, they are therefore assumed to be linked to planning for anticipated encounters.

Berger (1988) suggested that planning refers to the ability that actors have to define general and specific goal states, the parameters of these states, and the behaviors necessary to accomplish them. He further suggested that plans vary in their level of abstraction and contain alternative paths for goal attainment from which actors can choose. Schank and Abelson (1977) have argued that cognitive scripts are important vehicles through which planning is accomplished, since knowledge about specific goal states and the behaviors necessary for achieving them are stored in scripts. Other approaches to planning have suggested that actors judge "the probabilities of future events by going through a simulation procedure, or simulation heuristic" (Sherman & Corty, 1984, p. 220).

Zagacki, Edwards, and Honeycutt (1988) posited that imagined interactions are representations of scripts that allow actors to access information and therefore plan for future interactions. Furthermore, they suggested that
imagined interactions may also be seen as a type of simulation heuristic, "insomuch as scenarios and simulations are experienced by actors in the form of imagined interactions" (Zagacki et al., 1988, p. 5).

Psycholinguists have made a distinction between planning that occurs as message producers are in the act of discoursing, termed "on-line planning," and planning that occurs prior to the act of discoursing, known as "off-line" or preplanning. Although much of the research on planning is concentrated on investigating "on-line" planning, research on imagined interaction is designed to explore "off-line" or preplanning.

The purpose of the present paper is to explore further the role that imagined interactions play in the message planning process. Specifically, this dissertation investigates the links among message rehearsal, imagined interaction, and behaviors that have been empirically linked to message planning. According to Butterworth (1980), a substantial body of literature has linked both "on-line" and preplanning with hesitation phenomena in naturally occurring speech.

The present dissertation includes five chapters. Chapter two provides a review of research on imagined interaction and a review of research that has linked hesitations to specific aspects of message planning. The second chapter also presents specific hypotheses and
research questions. Chapter three details the methodology used in the testing of the hypotheses and research questions presented. The fourth chapter summarizes the results in reference to the proposed hypotheses and research questions. Finally, chapter five discusses the results of the investigation in terms of their theoretical and heuristic relevance. Chapter five concludes with suggestions for future research.
Chapter II

Imagined Interaction, Planning, and Hesitation Phenomena:
A Review of Literature and Rationale

The first chapter introduced the purpose of the present dissertation and discussed the relevant theoretical constructs under investigation. The purpose of this chapter is threefold: (1) to review the research on imagined interaction; (2) to present a review of the research on message planning and hesitation phenomena; and (3) to present a rationale for investigating the effects of induced rehearsal for an anticipated encounter and an individual tendency to mentally research for anticipated encounters on hesitation phenomena and message strategy selection.

Imagined Interaction

Imagined interactions have been formally defined as a process of cognition in which actors imagined themselves in interaction with others (Edwards et al., 1988). Previous research has identified a number of characteristics and functions of imagined interaction. Beyond describing the characteristics and functions of imagined interaction, an instrument has been designed to measure imagined interactions. Furthermore, research has examined the relationship between imagined interactions and a number of other interpersonal variables. Imagined interactions have been linked to loneliness, locus of control, communication satisfaction (Edwards et al., 1988; Honeycutt et al., 1989),
and Machiavellianism (Allen, 1989). Other research has linked imagined interactions to sex differences (Edwards, Honeycutt, & Zagacki, 1989), task performance (Gotcher & Honeycutt, 1988), and doctor/patient communication and serious illness (Gotcher & Edwards, 1989). Finally, research has theoretically linked imagined interaction to cognitive planning (Zagacki, Edwards, & Honeycutt, 1988).

Characteristics and Functions. Research has revealed that imagined interactions serve three distinct functions and contain seven distinct dimensions (Edwards et al., 1988; Honeycutt, Zagacki, & Edwards, 1990). The three functions of imagined interaction include: (1) increased understanding of oneself such as clarifying feelings and thoughts; (2) rehearsal for an anticipated encounter; and (3) catharsis. Honeycutt (1988) has suggested that these functions may indirectly reduce uncertainty and relieve tensions about the other's behaviors. This dissertation focuses on the rehearsal function of imagined interaction by investigating the degree to which rehearsal serves as a cognitive planning device.

The seven dimensions reflect specific characteristics of imagined interaction. According to Honeycutt (1988) the "discrepancy" dimension is reflected in how discrepant imagined interactions are from reports of actual conversation. "Pleasantness" reflects the degree to which an individual's imagined interactions tend to be pleasant.
across a variety of topics, situations, and interaction partners. "Activity" refers to how often individuals report having imagined interactions. The "dominance" dimension reflects how much one reports that he/she talks in the imagined interaction compared to the interaction partner. "Specificity" is related to the degree of detail and development one reports in the imagined interaction. "Proactivity" and "retroactivity" reflect whether a person reports having imagined interactions before or after an important encounter. Finally, "variety" represents the diversity of topics and individuals that persons report characterize their imagined interactions.

Edwards et al. (1988) and Honeycutt, Zagacki, and Edwards (1990) have found that communicators tend to have imagined interactions with real-life, significant others; that the self talks more in imagined interactions than others; that imagined interactions are often about personal topics; and that they are more likely to occur before an actual communication event than after that event.

**Measurement of Imagined Interaction.** A self report instrument was developed in order to examine the occurrence and characteristics of imagined interactions (Edwards, et al., 1988; Zagacki et al., 1989). Items were developed by examining what others had written about imagined interactions and from informal discussions with graduate students and undergraduates enrolled in interpersonal
communication courses. The survey instrument presents respondents with a moderately detailed written introduction in which imagined interactions are defined as "those mental interactions we have with others who are not physically present" (Edwards, et al., 1988, pp. 28). The introduction also describes some possible characteristics of imagined interactions (e.g., "they may be brief or long, ambiguous or detailed"). The instrument asks subjects to respond to scaled items concerning the functions and characteristics of imagined interactions, and also asks subjects to write some sample lines of dialogue from the most recent imagined interaction that they have experienced.

**Imagined interaction and interpersonal variables.**

Several studies have linked imagined interaction to specific interpersonal variables (Edwards et al., 1988; Edwards, Honeycutt, & Zagacki, 1989; Honeycutt, Edwards, & Zagacki, 1989-1990; Honeycutt, Zagacki, & Edwards, 1990). Loneliness has been linked to imagined interaction activity, since it represents one way of operationalizing the amount of interpersonal communication individuals engage in. Edwards et al. (1988) examined the relationship between loneliness and the frequency of experiencing imagined interactions, as well as the relationship with the reported discrepancy between imagined interaction and real interaction. Results indicated that loneliness was negatively associated with imagined interaction activity. Honeycutt et al. (1990) also
concluded that imagined interactions were less functional for lonely communicators.

Honeycutt, Edwards, & Zagacki (1989-1990) further examined loneliness and imagined interaction by investigating the multivariate relationship between loneliness and the general dimensions of imagined interactions. Results indicated that imagined interactions that were discrepant from actual encounters and vague and ambiguous, rather than specific, predicted loneliness. Results also indicated that the variety dimension predicted the degree of loneliness. Honeycutt et al. (1989-1990) reported that having imagined interactions with only a few individuals before an anticipated encounter predicted loneliness.

A second interpersonal variable linked to imagined interaction is locus of control. Honeycutt et al. (1989-1990) attempted to link locus of control with imagined interaction activity and proactivity. They found that locus of control was best predicted by non-retroactive imagined interactions and with having a variety of imagined interactions involving different topics and individuals. In relation to self-dominance, the results from Honeycutt et al. (1989-1990) indicated that controlling and being dominant in the imagined interaction were predicted by having frequent, nonpleasent imagined interactions that tended to occur before anticipated encounters (proactivity).
A third variable that has been linked to imagined interaction is communication satisfaction. Honeycutt et al. (1989-1990) sought to link communication satisfaction with imagined interaction by operationalizing satisfaction using items from Hecht's (1978) communication satisfaction inventory, which reflects how an individual feels about an encounter after the encounter has taken place. According to Hecht (1978) higher communication satisfaction is associated with enjoying the conversation and believing that the interaction flowed smoothly.

Honeycutt et al. (1989-1990) sought to determine if the pleasantness dimension of imagined interactions was linked to satisfaction with the imagined interaction. Results indicated that satisfaction with the imagined interaction occurred as a function of having not only pleasant imagined interactions, but also imagined interactions that were proactive. Honeycutt et al. (1989-1990) suggested that individuals may be more likely to engage in retroactive imagined interaction when the preceding conversation involved conflict or a negative evaluation. Pleasant imagined interactions were also associated with being nondominant, having a number of imagined interactions, and having imagined interactions that were not discrepant from the actual interaction.

Allen (1989) attempted to link social cognition and personality by investigating cognitive planning, or imagined

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interactions, related to Machiavellianism. Results indicated that Machiavellianism was positively correlated with proactivity, retroactivity, and variety. Machiavellianism was negatively correlated with the pleasantness dimension of imagined interaction. Machiavellianism was also positively correlated with the rehearsal function of imagined interaction. Allen (1989) suggested that results of this investigation indicated that high Machs may engage in more planning activity than low Machs. Allen (1989) also warned that while the correlations were significant, the percent of variance accounted for was low. Therefore, conclusions concerning the results are somewhat tenuous.

Sex differences and imagined interaction. Edwards, Honeycutt, and Zagacki (1989) addressed whether males and females think differently about communication. Results from their investigation revealed that females have more frequent and pleasant imagined interactions, they imagine more self-words, and they are more likely to imagine and recall the scene of imagined interactions than males.

No sex differences were found for general features of imagined interaction such as discrepancy, proactivity, specificity, self-dominance, and retroactivity. Results also indicated that males and females did not differ systematically in the topics or relational partners of their imagined interactions. For both males and females, dating
was the most commonly imagined topic, followed by conflicts at work, and with friends. Both males and females reported that the most common topics of their imagined interaction were dating, work/job, conflicts, friends, and activities. Males and females also reported that romantic partners were their most commonly imagined partners, followed by family members and friends.

Finally, results revealed that in their imagined interactions, males were twice as likely to have opposite-sex partners as same-sex partners, and females were almost three times as likely to have opposite-sex partners. Edwards et al. (1989) further suggested that the results of their investigation suggested a number of important parallels between imagined interaction and actual communication.

**Communicative outcomes.** Gotcher & Honeycutt (1989) investigated the use of imagined interaction in intercollegiate forensic competition. They found that subjects that reported having imagined interactions prior to a competitive event experienced more success in their imagined interaction than subjects that reported having imagined interactions following a competitive event. Gotcher & Honeycutt suggested that imagined interactions may allow competitors to rehearse reward behaviors and implement the behaviors in subsequent events. They also found that as competitors increased their awareness of forensic activities
through having forensic-related imagined interactions or in actual competition, their imagined interactions more closely mirrored the actual competitive event. They concluded that imagined interaction may compensate for the actual experience in forensic competition.

Conclusions of imagined interaction research. One of the primary conclusions that has been drawn from studies of imagined interactions is that they function as a means of planning and rehearsing for actual communication. Evidence for conclusions concerning links between planning and imagined interaction is widespread. First, in factor analysis of the survey of imagined interaction, rehearsal emerged as a unique function. Proactivity, or the tendency to have imagined interactions prior to an upcoming encounter, emerged as an unique characteristic. Furthermore, comparisons of the proactive and retroactive (after an actual encounter) characteristics revealed that subjects reported having more proactive than retroactive imagined interactions (Edwards et al., 1988; Honeycutt et al., 1990). According to Edwards (1989) these findings provide evidence that imagined interactions are used as a means of rehearsing or planning for actual communication.

A second area of research that has provided evidence that imagined interaction serves as a planning device is found in studies relating the construct to individual differences. Specifically, studies of loneliness and
Machiavellianism suggest links between imagined interaction and planning for actual communication.

Edwards (1989) and Honeycutt et al. (1989-1990) have suggested that by having a variety of imagined interactions, an individual may develop plans for interactions. One speculation is that imagined interactions for lonely individuals are dysfunctional because they fail to adequately prepare them for upcoming interactions. Edwards (1989) has speculated that lonely persons may also have fewer imagined interactions because they have less actual communication to rehearse.

Results from Allen (1989) suggested that, consistent with theory of the trait, high Machs spend more time preparing for anticipated encounters. One suggestion is that they use imagined interactions to identify goal paths that will allow them to achieve the goals that they set. The differences between high and low Machs in reference to the pleasantness dimensions are also consistent with Machiavellian theory concerning interpersonal affect. Edwards (1989) suggested that the findings concerning both pleasantness and rehearsal could also indicate that high Machs spend more time trying to analyze problematic situations.

The previous section provided an examination of an emerging body of research aimed at exploring the links between imagined interaction and cognitive planning.
Conceptually, imagined interactions function as a cognitive device which allows actors to rehearse for anticipated encounters. Recently, a number of scholars have indicated that much more attention in interpersonal communication research should be focused on specific cognitive aspects of communication (Berger, in press).

The following section provides a review of current research that focuses on cognitive aspects of planning for communication and attempts to theoretically establish imagined interactions as one type of cognitive planning device.

**Communication, Planning and Imagined Interaction**

**Planning and Imagined Interactions**

Zagacki, Edwards, and Honeycutt (1988) sought to theoretically link imagined interaction to cognitive planning. They have characterized imagined interaction as a process of social cognition whereby actors imagine and therefore indirectly experience themselves in encounters with others. Zagacki et al. (1988) theorized that imagined interactions function to develop social goals and to simulate plans necessary for achieving them.

They also suggested that additional support for the relationship between imagined interaction and planning is evidenced in Anderson's (1983) notion of "imagined scenarios." Anderson (1983) explained that imagined scenarios are vital to cognitive control because they serve
the function of generating goal structures that serve as plans that may be transformed into executable actions. Goal structures generated during imagined scenarios serve as data to be operated upon. According to Zagacki et al. (1988) imagined interactions have been conceptualized in a fashion similar to imagined scenarios in that "communicators use imagined interactions to analyze probabilities and contingencies for action, to construct scenarios for what might happen should particular behaviors and/or events occur, and to assess potential flaws in these 'imagined' scenarios" (p. 7).

While the research investigating imagined interaction has clearly defined imagined interactions as one form of message planning, investigations have not attempted to look at specific behavioral evidence of planning. Research has suggested that imagined interactions reflect a social cognitive process that involves the processing of conversational episodes. Investigations of imagined interactions (Edwards et al., 1988; Honeycutt, et al., 1989) have determined that imagined interactions are more likely to occur before an actual communication event than following an actual communication episode. Evidence indicating that imagined interactions usually occur before an anticipated encounter further implies that communicators use imagined interactions primarily as a rehearsal for such encounters.

Since imagined interactions have been characterized as
involving intimate partners, personal topics, and more self-talk than other-talk, they may serve as a social cognitive preplanning device for encounters that actors view as critical. By using the rehearsal function of imagined interactions, actors may engage in "off-line" or preplanning for anticipated critical conversations. Therefore, it is a necessary step in the systematic investigation of imagined interaction to directly link imagined interactions to off-line or preplanning.

Berger (in press) has suggested that persons engage in strategic behaviors aimed at attaining social goals, therefore, it is necessary to conduct interpersonal communication research aimed at understanding how goals are conceived and how plans are developed. Berger claims that the goal of communication researchers should be to understand the cognitive processes that underlie messages. Other researchers have substantiated this claim.

Greene et al. (1989) suggested that communication scholars whose goal is to understand the cognitive mechanisms that underlie the production of messages should investigate the various temporal and content features of messages within the context of the cognitive mechanisms through which messages are produced. According to Greene et al. (1989) "models of message production based on conceptions of cognitive processes that are executed in real time or that make demands upon limited processing resources
can be considered plausible only to the extent that they are consistent with observed properties of behavior" (p. 4). Therefore, in order to comprehend fully the effect that imagined interactions have on message production, one must assess the observable behaviors related to the rehearsal function of imagined interaction. In an effort to understand how imagined interactions operate as a cognitive planning device, it is necessary to review other research that has linked interpersonal communication to planning.

Interpersonal communication and planning. Recently, a number of investigations have sought to investigate interpersonal communication and planning. Communication researchers have linked loneliness to planning behaviors (Berger, in press; Berger & Bell, in press; Berger & Jordan, 1989). This line of research has operationalized loneliness as a form of social competence, or rather social incompetence. The rationale behind operationalizing social competence in such a manner lies in findings from empirical investigations of communication and loneliness. Research has demonstrated that lonely persons have difficulty making friends, initiating social activities, engaging in self-disclosure, asking questions of their conversational partners, engaging in behaviors indicative of conversational involvement, and planning for conversations (Bell, 1985; Berger & Bell, in press). These findings are consistent with research on imagined interaction and loneliness. For
instance, Berger and Bell (in press) found that highly lonely males had less effective plans for requesting a date than males with low loneliness scores.

Berger and Jordan (1989), using a "think aloud" technique, sought to examine the sources of knowledge that persons use to devise plans in the achievement of social goals. They identified six different types of plans that they suggested are commonly used as sources for planning activity. These included specific episodes, ensembles of episodes, hypothetical episodes, role models, instruction, and previous plans. Berger and Jordan (1989) determined that within the four social goals under investigation (requesting a date, ingratiating one's self to a new roommate, persuading another person on an issue, and becoming a millionaire), generalized knowledge sources were more frequently used as the basis in planning for the more familiar goals. However, they also determined that specific, vivid instances were the most prevalent source of knowledge for developing ingratiation plans.

Berger and Jordan (1989) also sought to link planning sources with social competence, as indexed by loneliness. They found a positive relationship between males' loneliness scores and level of difficulty encountered when planning for requesting a date. Berger and Jordan (1989) found that, in the ingratiation task, lonely individuals had less effective plans than non-lonely persons. While females reported that
they did not know how to ingratiate themselves to a new roommate, males professed not only a lack of knowledge but also a lack of motivation to ingratiate themselves. Berger and Jordan (1989) suggested that research should examine simultaneously the cognitive and motivational aspects of planning. They concluded that some persons may know how to achieve goals but may not desire to do so, while others may desire to accomplish social goals but not have the knowledge to do so.

This research on planning and social competence (Berger & Bell, in press; Berger & Jordan, 1989) is consistent with findings in imagined interaction research. Edwards et al. (1988) found that lonely individuals experienced less imagined interaction activity. Lonely individuals also reported that their imagined interactions were less useful in preparing them for actual interactions, and that their actual interactions were often different from their imagined ones.

While Edwards et al. (1988) suggested that imagined interactions may serve as a mechanism that allows individuals to plan for social action, the Berger and Jordan (1989) investigation lends further support to this notion. Support for imagined interaction as a cognitive planning device may also be found in other types of investigations of planning. The following provides a review of research on more general aspects of planning.
Social goals and knowledge structures. According to Berger (in press) interpersonal communication researchers as well as social psychologists have shown an increasing interest in understanding communication processes related to accomplishing social goals. Berger (in press) has suggested that the two fundamental questions related to this line of research are: (1) how do individuals devise strategies for reaching social goals?; and (2) how are ready-made strategies instantiated from long-term memory? He stated that research aimed at explaining how individuals develop strategies in an effort to reach social goals will enable a better understanding of how and why individuals use particular strategies at the level of tactical action. Berger's primary contention is that communication theorists need to work toward the development of a "planning theory for strategic communication" (p. 3).

A large body of literature exists that defines "knowledge structures" which may be partly responsible for the generation of goal-directed social action (Anderson, 1983; Black & Bower, 1979; Newell, 1973; Quillian, 1969; Rumelhart, Lindsay, & Norman, 1972; Rumelhart, 1981; Shank & Abelson, 1977, Sternberg, 1985). Two important elements of knowledge structures are goals and the plans enacted for reaching goals. Goals represent desired end states, while plans represent a path of action that is necessary for the achievement of the desired end state.
In reference to the notion of goals, a number of cognitive theorists have suggested that, at its lowest level, information is stored in the human cognitive system in what is known as "propositional" form. Anderson (1985) has suggested that a proposition is the smallest unit of knowledge than can stand as a separate assertion or rather "the smallest unit of knowledge which it takes to make a judgment true or false" (p. 115). Cognitive theorists have also proposed that while propositions are adequate for representing small units of meaning, they fail to address how larger sets of organized information that one has about particular concepts is organized (Anderson, 1985). In examining cognition related to accomplishing social goals, one must investigate higher order knowledge structures.

A number of cognitive theorists have suggested that schema theory provides an appropriate level of knowledge structures for studying social goals (Bower, Black, & Turner, 1979; Rumelhart, 1981; Rumelhart, Lindsay, & Norman, 1972; Shank & Abelson, 1977). Schemata represent knowledge that we experience, such as sequences of events that normally occur. In this way, schemata contain prototypical information about frequently experienced situations and they are used to interpret new observations and situations (Rumelhart, 1981).

According to Sternberg (1985) schema theory assumes that in the cognitive system there are memory structures for
recurrent situations that one experiences. Sternberg (1985) further suggested that one of the major functions of a schema is to construct interpretations of new situations. He stated that information in a particular schema is thought of in terms of slots into which incoming information can fit. If enough slots of a particular schema are filled, it becomes "active." The active schema then guides one to seek information to fill its remaining slots. If additional information is not available, one will fill the slots with information that is "typical" of that particular situation, and then activate the procedures necessary for action.

Sternberg (1985) contended that organization and structure provided by schemas allows for efficient recall of information. He also stated that either lack of knowledge or lack of access to knowledge (due to inadequate organization or structure) may be one reason that individuals fail to accomplish goals. Thus, schemas have been linked to goal attainment.

Once a social goal has been defined and an appropriate schema activated, the information contained in a schema may be structured in the form of a plan for accomplishing the goal. According to Berger (1988a) a plan "specifies the actions that are necessary for the attainment of a goal or several goals" (p. 96). Berger (1988a) also suggested that plans vary in their level of abstraction, and may contain alternative paths for goal attainment. Berger (in press)
stressed that plans are "not actions themselves but conceptual representations of actions" (p. 6). He contended that plans are different from knowledge structures because they are highly flexible.

Berger and Jordan (1989) and Berger (in press) have defined plan structures in terms of specific episodes, aggregated episodes, and hypothetical episodes. Specific episodes are single episodes in which a participant has actually taken part. According to Berger and Jordan (1989) specific episodes are frequently used for planning. Aggregated episodes reflect collections of single, specific episodes; they may be specific or more generalized. Hypothetical episodes are imagined episodes that participants have not experienced directly. They are also based on generalizations from previous experiences, but do not reflect well-defined portions of specific episodes. According to Berger (in press) hypothetical episodes frequently include references to visualization of the self in the situation.

Berger and Jordan's (1989) and Berger's (in press) hypothetical episode closely resembles the construct of imagined interaction. Berger (in press) reported that instances in which hypothetical episodes were used most often were asking someone for a date and persuading someone on an issue. These findings are consistent with research on imagined interaction in three primary areas: (1) the self
often talks more in the imagined interaction than the other (Edwards et al., 1988); (2) individuals most often report having imagined interactions with romantic partners (Edwards et al., 1988; and (3) individuals often report having imagined interactions about dating and conflicts/problems (Edwards et al., 1988). Therefore, imagined interactions may be one way that individuals use hypothetical episodes as a way of planning for anticipated encounters.

Berger (in press) also differentiates a plan from planning. He states that the planning process occurs when a person devises action sequences, anticipates the outcomes of action sequences, and adjusts projected actions in terms of the anticipated outcomes. He suggests that planning can occur in advance of an action (often called off-line planning), or it may take place on-line as actions unfold.

Berger (in press) has suggested that individuals use plans to engage in planning prior to interaction. He suggested that when individuals are faced with a task and seek to attain some social goal, they first search their long-term memories for plans that they have used to achieve similar goals. Berger's suggestion is similar to what Sternberg (1985) referred to as filling in the "slots" of a schema. Berger (in press) suggested that individuals may begin with searching for a specific episode that may be used to formulate a plan for the present situation. If a specific episode is not available, the individual then
relies on aggregates; these aggregates are often abstracted further into hypothetical episodes.

Berger (in press) contended that while recall of specific episodes is difficult, planners have little difficulty imagining themselves, and in some instances visualizing themselves, attempting to achieve a social goal. Berger (in press) concluded that retrieving specific episodes, aggregated episodes or hypothetical episodes serves to reduce the cognitive load during actual interaction. Imagined interactions may reflect a type of planning activity in which individuals utilize all three of the types of plan episodes outlined by Berger (in press). If this assertion is true, then proactive imagined interaction activity, serving the rehearsal function, should reduce the cognitive load during actual interaction.

The following section provides a review of research that has investigated behavioral evidence of planning. Specifically, this section examines research that has linked hesitations in speech to cognitive load and information processing demands.

Behavioral Evidence of Planning

A large body of research has suggested that preplanning of content reduces on-line planning time requirements (Butterworth, 1980; Goldman-Eisler, 1968; Maclay & Osgood, 1959;). The general notion is that preplanning a portion of the content of speech decreases cognitive load during actual
interaction. A number of investigations have suggested that hesitations serve as a behavioral indicator of planning during discourse. Therefore, evidence of preplanning can be understood in terms of fluency of speech.

The implicit assumption, in reference to preplanning, is that if semantic planning has taken place prior to the interaction, cognitive focus can be placed on syntactic planning which is assumed to be more automated than semantic planning. Behavioral evidence for this phenomenon has been found in communicator's hesitations and pauses. The next section of this paper will review literature on planning and hesitation phenomena.

A substantial body of theory and data on cognitive performance indicates that as processing capacity demands increase, so, too, will the time required to initiate and/or execute those tasks (e.g. Dixon & Just, 1986; Lansman & Hunt, 1982; Logan, 1979; Shiffrin & Schneider, 1977). It is also well established that there is a positive relationship between difficulty of message production and increases in a variety of pausal phenomena (Greene, Lindsey, & Hawn, 1989). Furthermore, planning for speech in advance of actual production has been shown to result in speeded responses (Butterworth, 1980; Tannenbaum & Williams, 1968). Similarly, speech on abstract or difficult topics has been associated with less fluency (Taylor, 1969). Therefore, there exists a body of evidence to suggest a positive
relationship between preplanning and speech fluency. Specific investigations will be detailed in the following section. The next section provides a review of hesitation phenomena literature, and hesitation phenomena as it relates to cognitive planning.

**Hesitation Phenomena.** Curiosity about hesitation phenomena in speech has generated a significant body of research over the past several decades (Rochester, 1973). The primary reason for interest in hesitation phenomena has been to try to describe the often non-fluent nature of speech (Ragsdale & Sisterhen, 1984). Hesitations or pauses have been classified into three general categories: "ah" phenomena; "non-ah" phenomena; and silent or unfilled pauses (Maclay & Osgood, 1959; Mahl, 1956).

Research by Mahl (1956) categorized three general types of pauses: (1) "ah" pauses; (2) "non-ah" pauses; and (3) silent pauses. Utterances such as "ah," "er," and "um" are categorized as "ah" pauses. These tend to occur with greater frequency than other types of pauses, and are often related to lexical decision points during the process of generating discourse. Non-ah pauses include sentence changes, repetition/stutters, omissions, sentence incompletions, tongue slips, and intruding incoherent sounds. Non-ah pauses tend to occur less often than ah pauses and have been found to be related to anxiety (Mahl, 1956; Ragsdale, 1976). Both ah and non-ah pauses are often
termed filled pauses.

According to Mahl (1956) silent or unfilled pauses are defined as silences greater than .25 second that occur either between words in a sentence or between sentences. Silent pauses have been linked to lexical selection, sentence planning (Beattie, 1980; Butterworth, 1974; Goldman-Eisler, 1961; Henderson, Goldman-Eisler, & Sharbek, 1971) and task complexity (Goldman-Eisler, 1961; Greene, Lindsey, & Hawn, 1989).

Research has determined that the various hesitation phenomena described above do not occur with equal frequency (Ragsdale, 1969). For example, "ah" pauses tend to occur more often than any of the non-ah pauses, particularly in spontaneous speech (Goldman-Eisler, 1961; Ragsdale, 1969). Ragsdale (1976) and Ragsdale and Silvia (1982) found that among the non-ah pauses the most commonly used types were repetitions, sentence changes, and stutters.

Research on Planning and Hesitations

According to Beattie (1980) hesitations have been used extensively as an index of cognitive planning in research on speech production. Goldman-Eisler (1958) used a guessing technique in order to determine the predictability of words following hesitation pauses. In this type of activity the subject is asked to predict the word that comes next, when a word is omitted from a transcript. She found that places where the guesser was at a loss for predicting the next word
were also the points at which the speaker tended to hesitate.

In reference to these findings, Goldman-Eisler (1958) divided planning into two categories: (1) central planning which reflects processes that are voluntary, semantic, and original; and (2) peripheral planning which reflects processes that are automatic, syntactic, and highly over learned. She contended that central planning commonly takes place "off-line" while peripheral planning usually occurs "on-line."

Goldman-Eisler (1961) showed subjects a series of cartoon stories with no verbal captions. Subjects were first asked to describe the pictures, then give an interpretation of them. A comparison of the description and interpretation tasks showed that the latter was associated with a significantly higher silent-pause ratio, but not a filled-pause ratio. She also found that subjects used fewer overall words in the description task than in the interpretation task.

Goldman-Eisler (1961) concluded that pause time was a direct reflection of central planning. She suggested that evidence of planning can be determined not only by the occurrence of pauses in speech, but also by where in the speech the pauses tend to occur. Goldman-Eisler (1961) found that pauses in unplanned speech were more likely to be non-boundary pauses and that in planned speech pause time
was often located at clause boundaries.

Subsequent investigations sought to replicate and extend the Goldman-Eisler (1961) study. Goldman-Eisler (1968), using the same experimental task, found that words in the sentences used in the interpretation task were less predictable than words used in the description task. She also found that in the interpretation task, sentences were syntactically more complex than those found in the description task. Goldman-Eisler (1968) concluded that hesitation pauses in speech reflect the speaker's lexical decision making process, or rather his or her word choice.

Goldman-Eisler (1968) also extended her 1961 investigation by having subjects repeat the descriptions during a short practice session. Results indicated that significant differences existed between the two distinct cognitive operations of describing and interpreting the picture stories. In addition, significant increases in speech rate (due to fewer pauses and hesitations) were found after practice (six repetitions of the original spontaneous response) in both the description and interpretation tasks.

Research by Goldman-Eisler has generated nearly three decades of cognitive research aimed at replicating and extending her work. Henderson, Goldman-Eisler, and Sharbek (1971) noted that speech showed a distinctive temporal patterning. Recorded transcripts of subjects being interviewed and subjects reading a prose selection were used
Henderson et al. (1971) observed that in the interview condition periods of relative hesitancy alternated with periods of relative fluency. Pausing was assumed to be an attribute of spontaneity in the creation of a new verbal construction, or verbal planning. They compared subject's reading of a prepared text with subject's spontaneous speech. Henderson et al. (1971) found that subjects' reading contained significantly fewer pauses than subjects' spontaneous speech. They determined that almost all pauses in reading occurred at clause boundaries and generally serve communicative rather than planning purposes. They also found that in spontaneous speech less than a third of breathing pauses occurred at clause boundaries. They suggested that these findings represent further evidence that hesitations are indications of cognitive planning, and are not due to the physical needs of the communicator.

Butterworth (1974) used another method in an effort to investigate hesitations and semantic planning. He had subjects select from a set of propositions on social and political topics the one that they most agreed with or the one they most disagreed with, resulting in two experimental conditions. Subjects then engaged in an interaction with an interviewer in which they were told to argue in favor of the proposition selected. Data analysis was conducted in a fashion similar to that of Henderson et al. (1971) and
Goldman-Eisler (1968).

Butterworth (1974) found temporal cycles as described by Henderson et al. (1971). Butterworth (1974) also found a significant relationship between cycle boundaries of "ideas" as judged by reviewers of transcripts of the speech. He concluded that the speech/hesitation cycles were not random, but associated with planning in spontaneous speech.

Beattie (1979) attempted to elucidate the nature of the units of encoding involved in the generation of speech by investigating speaker's verbal and nonverbal behavior in conversations. Beattie (1979) filmed interactions of hour-long conversations involving either a graduate student and a professor or an undergraduate student and a supervisor. All interactants were male. He examined hesitations (filled and unfilled pauses) as well as speaker gaze at the listener.

Like Henderson et al. (1971) and Butterworth (1974), Beattie (1979) found significant evidence for temporal cycles in speech. He determined that all hesitations occurred in the hesitant phases of the temporal cycles. He also determined that hesitations tended to cluster toward the beginnings of syntactic clauses, and could indicate that the main encoding unit is the syntactic clause.

Siegman (1979) sought to replicate and extend the Goldman-Eisler (1968) cartoon study. Siegman (1979) extended the investigation by experimentally manipulating "speech conciseness," which was operationalized as the
subject's awareness of communicating the message in "a concise a manner as possible" (p. 157). He also investigated subject's response latency to both the description and interpretation tasks.

Siegman concluded that the results from his study indicated that, consistent with Goldman-Eisler's findings, the cartoon interpretations were associated with a longer within-response pausing than the cartoon descriptions. Results concerning subjects' response latency were also found to be significant. Siegman (1979) also found that while speech conciseness reduced verbosity, it had only a minimal effect on the hesitation indices.

Siegman (1979) reported that subjects used significantly fewer words in the description task than in the interpretation task. He concluded that task difficulty was a potent source of variance in subjects' verbal behavior. Siegman (1979) also concluded that cognitive decision making was associated with hesitant speech. He further suggested that specific manifestations of a speaker's hesitations varied as a function of the decisions that the speaker had to make.

Siegman (1979) warned that although it is proposed that hesitation in speech is an indication that information processing is taking place at the time of the hesitation, it is not suggested that fluent speech is necessarily an indication that no complex decision-making is taking place.
He suggested that in dyadic conversations, prolonged silences often carry the risk of losing one's turn at talk. He suggested that future research should attempt to investigate hesitations within dyadic conversations.

Brotherton (1979) attempted to extend further Goldman-Eisler (1968) by investigating pausing in dialogue situations. She used data that consisted of two 10-minute samples of spontaneous speech selected from interviews with 10 middle-aged female subjects engaged in a discussion of child-rearing practices. The interviews were conducted in the subjects' homes.

She concluded that initial response pauses, as well as filled and unfilled pauses reflect special features in dialogue situations. Brotherton (1979) proposed that in dialogic speech, in initial response and clause-boundary positions, the filled pause functions as a social-interpersonal signal that the speaker intends to continue but is uncertain about the content of the utterance; she also found this to be true when the filled pause was associated with speech disruptions in the within-clause position. Brotherton (1979) reported that other within-clause filled pauses precede more complex lexical items and probably serve as indicators of uncertainty about lexical decision points. Therefore, she concluded that silent pauses reflected difficulty in semantic planning while filled pauses were related to lexical choice.
While the majority of the research on hesitations and planning has been conducted within the psycholinguistic community, scholars in interpersonal communication have also taken interest in this phenomenon. Ragsdale (1976) investigated the relationship between hesitation phenomena, anxiety and self control in normal communication situations. Ragsdale's (1976) investigation was rooted in research on hesitations produced by anxiety in clinical communication situations. Results indicated that, similar to research in clinical situations, as "anxiety indexes and internalization ratios increased, so did stutter, repetitions, sentence changes and the like" (p. 257).

Recently, communication scholars have become interested in the relationship between planning for communication and speech fluency. In particular, scholars have become increasingly interested in how individuals achieve social goals and have linked fluency to goal attainment. Scholars interested in understanding communication processes have suggested that there is a need to link cognitive aspects of communication to overt behaviors like fluency.

Greene, Lindsey, and Hawn (1989) explored the effects of multiple goals on pausal phenomena. In an experimental situation, they compared the speech of subjects given multiple social goals to that of subjects assigned the task of pursuing a single task. Results from the Greene et al. (1989) investigation were consistent with theories proposed
by a number of investigations (e.g. Goldman-Eisler, 1968).

They found that messages developed by subjects pursuing multiple social goals, relative to subjects pursuing a single goal, exhibited slower speech onset latency, longer message duration, more frequent use of sociocentric sequences, and a higher rate of ideational repetition. Greene et al. (1989) concluded that the results from this investigation indicated that relative to single-goal situations, pursuit of multiple goals was associated with more complex processing and greater cognitive load.

Greene et al. (1989) also suggested that results from this investigation somewhat paralleled those of Brotherton (1979) in reference to filled pauses. Green et al. (1989) concluded that filled pauses may not be as important for assessing cognitive load as other types of pauses, since filled pauses often serve to prevent interruptions by the listener while speech is delayed. Suggestions were made for future research concerning cognitive aspects of communication and overt behaviors.

In an effort to explore further the role that planning plays in speech production processes, Berger, Karol, and Jordan (1989) examined the relationships among plan complexity, access to planned actions, and verbal fluency while pursuing a persuasion goal. Three experiments were devised in order to investigate plan complexity, access to planned actions and verbal fluency. The primary assumption
guiding Berger et al. (1989) was that there are direct relationships between persons' levels of planning knowledge and their abilities to perform fluently in the pursuit of social goals.

The first experiment examined the relationships among verbal fluency, plan complexity, and action access. They predicted that greater plan complexity would decrease fluency. They also predicted that making more action alternatives accessible to less complex planners would improve their fluency. Finally, they predicted that persons whose action access was increased by being questioned about their plans would be less fluent than persons who were not questioned about their plans or persons who did not plan.

Three experimental conditions were designed. The first condition was a "plan only" condition. In this condition subjects were simply asked to write what they would say to a person if they had to induce another to accept their position on banning alcohol in dormitories. Following this activity, participants engaged in the task that they were asked to plan. The subjects engaged in the task with a confederate, and the interactions were video taped. Confederates were instructed to show neutrality on the alcohol issue initially, and to increase their opposition as the interaction progressed. In the second condition participants were not given a planning task. They went directly into the interaction activity with the confederate.
All interactions lasted about five minutes.

The third treatment was designed to raise the accessibility of alternative actions. In this condition, participants were asked to write a plan consisting of the steps they would use to induce another person to accept their position on banning alcohol in dormitories. Participants were then asked what they would do if a particular action described in their plan was unsuccessful.

Two measures were used to assess participants' fluency. First, two judges coded each conversation and independently rated the fluency of each participant's performance on a seven-point scale. Second, two judges scored four behaviors of each participant: frequency of vocalized pauses, frequency of false starts, frequency of non-vocalized pauses (excluding switch pauses), and duration of vocalized pauses. Plan complexity was assessed by analysis of the written plans that the subjects generated during the experiment.

Results indicated that judges' fluency judgments were influenced considerably by the subjects silent pausing behaviors. The results also indicated that the mean global fluency (both vocalized and non-vocalized pauses) for the plan-question group was significantly less than the mean fluency for the plan-only group. None of the remaining contrasts were significant.

Berger et al. (1989) concluded that fluency with which a message is communicated may determine its ultimate
effectiveness. They contended that research has shown that persons who show more verbal non-fluencies are judged to have lower levels of source credibility than are persons who have fewer verbal non-fluencies. They further suggested that while fluency is not the only determinant of source credibility, in many social situations, perceptions of fluency may be direct determinants of effectiveness. They suggested that future research should work toward defining the role that planning plays in verbal fluency.

Overall, research in psycholinguistics and interpersonal communication has indicated that vocalized and non-vocalized pauses may be used as an index of cognitive activity, particularly planning. One of the primary assumptions of the present dissertation is that imagined interaction is a type of mental activity that allows individuals to engage in preplanning for upcoming encounters. The following section presents a rationale, hypotheses and research question aimed at investigating mental rehearsal as a form of preplanning for an anticipated encounter.

Rationale

According to Butterworth (1980) planning imposes a substantial cognitive load when many choices are available. Due to unfamiliarity of the topic, sequences of on-line planning will be evidenced through increased pauses in the stream of speech. A large body of empirical evidence
suggests that preplanning and/or practicing the content of speech will reduce on-line planning time requirements, and in turn, reduce the proportion of pauses in speech. Consequently, since the complexity of cognitive processing and cognitive load is mediated by physical practice (Newell & Rosenbloom, 1981), it is reasonable to investigate the effects that mental practice or mental rehearsal has on processing demands.

Evidence from the research reviewed in the previous section indicated that complexity of cognitive processing and cognitive load may be evidenced by vocalized and non-vocalized pauses in the stream of speech (e.g., Goldman-Eisler, 1968). Preplanning the content of speech in advance should decrease the amount of cognitive planning needed for on-line processing. Therefore, engaging in preplanning should decrease the amount of pausing in speech. Likewise, if imagined interactions serve as a preplanning device, use of the rehearsal function of imagined interaction should decrease cognitive demands by allowing actors to plan strategies and select the words necessary to enact strategies that are aimed at goal attainment. Evidence of planning should be evidenced through decreases in the amount of pausing in speech.

The goal of the present investigation was to determine the effects that mental practice has on fluency of speech. For the purpose of the present investigation, two forms of
mental rehearsal were examined. First, the rehearsal function of imagined interaction was operationalized as mental rehearsal or mental practice. Conceptually, imagined interactions allow communicators to mentally represent upcoming conversations and rehearse or practice what they might say. Therefore, mental rehearsal for an anticipated encounter, experienced as imagined interaction, should be evidenced through fluency of speech, response latency, and message strategy. Second, induced rehearsal was operationalized in terms of an experimental condition in which subjects were instructed to plan for a specific upcoming encounter.

Speech fluency was operationalized in terms of hesitation phenomena (e.g., filled and unfilled pauses). The hypotheses tested in the present investigation represent a generalization from previous research to the previously unstudied process of mental rehearsal. The present investigation includes two independent variables: (1) induced mental rehearsal, and (2) an individual tendency to mentally rehearse. The following hypotheses reflect these two different forms of mental rehearsal and their effects on speech fluency:

H1: Induced mental rehearsal prior to an anticipated encounter will decrease the amount of silent pausing in that encounter.

H2: An individual tendency to mentally rehearse prior to an
anticipated encounter will decrease the amount of silent pausing in that encounter.

H3: Induced mental rehearsal prior to an anticipated encounter will decrease the number of "ah" pauses in that encounter.

H4: An individual tendency to mentally rehearse prior to an anticipated encounter will decrease the number of "ah" pauses in that encounter.

H5: Induced mental rehearsal prior to an anticipated encounter will decrease the number of "non-ah" pauses in that encounter.

H6: An individual tendency to mentally rehearse prior to an anticipated encounter will decrease the number of "non-ah" pauses in that encounter.

Greene (1988) and others have determined that the effects of cognitive load will lead to longer speech-onset latencies. Onset latencies have also been associated with planning and practice (Goldman-Eisler, 1961; 1968). Evidence suggests that the first few seconds before a speech production task are spent in planning if the subject has not preplanned for the task. Therefore, individuals who engage in practice have shorter onset latencies than individuals who do not engage in practice prior to an anticipated encounter. Therefore, the following hypotheses are presented:

H7: Induced mental rehearsal prior to an anticipated
encounter will result in shorter speech-onset latency in that encounter.

H8: An individual tendency to mentally rehearse prior to an anticipated encounter will result in shorter speech-onset latency in that encounter.

According to Berger (in press) one of the largest areas of research in interpersonal communication is aimed at defining strategies employed to attain social goals. While much attention has been paid to defining strategies that actors employ, little research has sought to determine cognitive processes related to the use of these strategies. The present study also sought to investigate strategy choice as a function of preplanning of speech.

Conceptually, imagined interactions allow speakers to imagine themselves in the act of discoursing, while generating simulation heuristics for possible alternatives (Zagacki et al., 1989). Speakers who make use of mental rehearsal via imagined interactions may consequently make use of a greater number or variety of message strategies. Therefore, this study also investigated the content of the speaker's messages in order to determine what impact mental rehearsal has on message production. Previous investigations on planning have not looked at the message strategies or actual verbal messages produced by speakers. Therefore, in order to investigate the links between preplanning and strategy selection, the following research
questions are presented:

RQ1: What effect does induced mental rehearsal have on the message strategies used by the speaker?

RQ2: What effect does an individual tendency to mentally rehearse have on the message strategies used by the speaker?

The present chapter reviewed research on imagined interactions and suggested that they allow actors to preplan the content of speech in anticipation of interaction. This chapter also reviewed research on preplanning and hesitation phenomena. Predictions were made concerning practice and hesitations in spontaneous speech.

In order to test the hypotheses and research questions proposed in the present investigation, an experiment was designed. Since planning for anticipated encounters often takes place in reference to encounters that require strategic communication, a situation was devised that would require the subject to plan for and engage in specific goal directed communication behaviors. The following chapter presents a detailed description of the methods and procedures used to investigate the hypotheses and research questions.
Chapter III
Examining Preplanning for Anticipated Encounters and Its Influence on Communication Behaviors:

METHODS AND PROCEDURES

The purpose of chapter three is to present a detailed description of the methods and procedures used in the present investigation. Data collection for the present investigation took place in two stages. The first stage of the data collection involved survey collection, the second stage of the data collection involved a laboratory experiment.

The following chapter provides a review of the dependent and independent variables, an overview of the procedures used in the present investigation, a discussion of experiment development, a description of the initial survey, the subjects, and the experimental procedures used. This chapter also outlines the procedures used in analyzing data, including the survey data, hesitation data, and message strategy selection data. Reliability estimates are also described.

Dependent and Independent Variables

The present investigation included two independent variables: (1) an individual tendency to rehearse mentally (operationalized using the rehearsal function of imagined interaction) and (2) induced mental rehearsal.

Five dependent variables were examined. First, three
forms of hesitation phenomena, defined according to Mahl (1956), served as the dependent variables for the present investigation. These include silent pauses, "ah" pauses, and "non-ah" pauses.

Message strategy also served as a dependent variable. A coding scheme developed by O'Hair & Cody (1987) was used to identify message strategies that subjects used while attempting to persuade a confederate that he/she should seek treatment for a serious drinking problem. Finally, speech onset latency also served as a dependent variable. The following section presents an overview of the procedures that were used in the present investigation.

Overview

The study involved two stages of data collection. In the first stage students from an introductory level interpersonal communication course were given the survey of imagined interaction. Two weeks later the same subjects were asked to volunteer to participate in an experiment, and were given extra credit for their participation.

At the beginning of the experiment the role playing activity was explained to all subjects. They were instructed to imagine that the other student (actually a confederate) was a "close friend" and that they needed to convince him/her that he/she "has a serious drinking problem and should seek treatment."

Subjects were randomly assigned to one of two treatment
groups. The first group was induced to plan for the upcoming encounter while the second group was given a distractor task in an effort to reduce planning for the encounter. After spending three minutes completing the initial task, a confederate was brought into the room, introduced to the subjects, and the two were told that they could begin the role playing activity. After two minutes the role playing activity was interrupted and subjects were taken to a room where they filled out a final inventory designed as a manipulation check. The following section provides a description of confederate training and how the experiment was developed. Subsequent sections include more detailed explanations of the actual experiment.

Experiment Development

In imagined interaction activity, an individual imagines the self engaging in talk with another person. In order to determine the role that imagined interactions play in the preplanning for anticipated conversations it was necessary to devise an experiment that included an actual interaction as well as the potential for an imagined one. A role-playing activity was chosen for the purposes of the current investigation.

An informal pilot investigation was undertaken in order to determine an appropriate role-playing activity. The semester prior to the data collection, students in undergraduate classes in speech communication were given
several different compliance-gaining tasks and asked to create messages that they might use in the situations. All of the responses were reviewed and the task in which subjects responded with the greatest number and variety of messages was selected for the role-playing activity. The task that was selected involved telling a close friend that he or she has a serious drinking problem and should seek professional help.

Since the goal of the investigation was to examine communication behaviors, confederates were used as interaction partners for the subjects so that verbal and nonverbal behaviors of the interaction partner would be constant for each subject. A male and a female confederate were used on alternate days in order to control for a confounding sex effect. The two confederates were sophomores at Louisiana State University. They were both average in height and weight, and had brown hair and brown eyes. The confederates were chosen, in part, because of their physical similarities.

Confederate Training. The two confederates were trained over a period of three weeks. They engaged in simulations of the experimental role-playing task, and rehearsed giving limited verbal and nonverbal feedback. The confederates engaged in the role-playing task with one another, and observed each other in the role-playing task with other individuals. The confederates attempted to "mirror" each
others' verbal and nonverbal responses. The confederates were also given course credit for their participation in the experiment.

Two other students were given course credit for working as experiment coordinators. The two experiment coordinators handled the running of the experiment including greeting subjects, giving oral instructions, and timing all portions of the experimental task. The coordinators were used so that the author would have limited contact with the experiment.

Pilot Investigation. A pilot investigation was undertaken in order to ensure that the experimental task was appropriate and to determine the amount of time subjects generally used in completing each segment of the experiment. Following the formal pilot investigation, several changes were made in the manipulation check (see Appendix A). In addition, the distractor task was found to be too difficult. A new, simpler, distractor task was constructed for the investigation. The revised task involved constructing as many different words from one root word (see Appendix B). Indications from the formal pilot suggested that the average amount of time that subjects took to complete either the planning or the distractor task was three minutes. Indications from the formal pilot also suggested that the role-playing activity took a maximum of two minutes. These times were used for the actual experiment.
Data Collection Procedures

The Survey. First, all subjects completed a revised version of the Survey of Imagined Interactions, or SII (Zagacki et al., 1988), and the PRCA-24B (McCroskey, 1986) (see Appendix C) during class time. The SII was revised in an effort to expand the number of questions concerning the rehearsal function of imagined interactions. Eight questions were added to rehearsal. All other questions concerning other characteristics and functions of imagined interaction were used except those relating to pleasantness. It was determined that pleasantness was not related to the present investigation. The PRCA-24B was used in order to assess communication anxiety. Anxiety has been found to be related to hesitation phenomena (Ragsdale, 1976); as such, the PRCA-24B was used to assess the effect of a possible confounding variable.

Subjects. Two weeks after they had completed the initial survey, subjects were asked to participate in the experiment. Subjects for the present investigation were drawn from undergraduate speech communication courses at Louisiana State University. Subjects were asked to participate on a voluntary basis and were given extra credit for their participation.

The Experiment

Subjects. Subjects (N=170) were those that had taken the initial survey and volunteered to participate in an
experiment for extra credit. The sample consisted of approximately 35% males, and 65% females. The subjects' mean age was 20, with a range of 18 to 37.

**Experimental Procedures.** Instructors were given sign-up sheets that included the dates, times and location of the experiment. Students were told to sign up for a time and date that was most convenient. Subjects were also told that someone would phone them to remind them of the experiment on the day that they were scheduled to participate. Each subject was telephoned on the day that they were scheduled to participate and reminded of their appointment. The experiment took place over a three week period, Mondays through Thursdays from 4:30 pm until 6:30 pm.

Subjects came to a reception room located in the Music and Dramatic Arts Building at Louisiana State University. They were greeted by one of the student coordinators and asked to read and sign a consent form (see Appendix D). The consent form stated the general purpose of the investigation and explained that the student could withdraw from the experiment at any time. Upon completion of the consent form, the subjects were taken to an interview room and given instructions by the student coordinator.

Next, subjects were given written as well as oral instructions concerning the experimental task (see Appendix B). Subjects were told that they were about to engage in an experiment that was aimed at determining communication
competence during interactions that involve one person trying to persuade another person about a certain issue of importance. Each subject, upon entering the laboratory room, were told that they were about to engage in a role-playing activity with another student. They were instructed to pretend that the other person was a close friend. They were also told that they were to imagine that this person had a drinking problem and that they were to convince him/her that that he/she should admit they had a problem and seek professional help.

Subjects were randomly assigned to an experimental condition. In condition "A" (the planning task) subjects were told that they should spend the next several minutes preparing for the task. They were told: "rehearse what you think you might say to this person and write what you will say and any responses that you think the other person might have." Subjects were given 3 minutes to prepare.

In condition "B" (the distractor task) subjects were told that researchers were interested in how language skills related to compliance-gaining activities. Subjects were given a distractor task for three minutes in an effort to keep rehearsal for the anticipated encounter to a minimum. Subjects in the distractor task were told that "Since we want to get an idea of your language skills we would like for you to complete the following language task. Below is a list of three words, you should try to see how many words
that you can make out of the letters in each word. For example, fro the letters in corporation you have 'car,' 'port,' and 'tap.' When you have finished the first word, move on to the second, then the third."

Following the three minute preparation time in condition "A" and the three minute task completion time in condition "B," a confederate was brought into the room. The coordinator introduced the confederate (as if he or she were another student volunteer) and instructed the two to begin the role-playing activity. The interactions were video taped in order to provide data for the present investigation. Each interaction lasted two minutes.

Following the video taped interaction, subjects were asked to complete an inventory designed as a manipulation check (see Appendix A). Subjects were also asked to answer a few questions regarding previous experience with the role playing topic. Subjects were asked not to discuss the details of the experiment with other students. Upon completion of the manipulation check, students were dismissed. The total time that a subject was engaged in the experiment was approximately 15 to 20 minutes. Finally, subjects were debriefed concerning the purposes and procedures of the experiment during class time. The debriefing took place once all of the data had been collected.

**Equipment.** Video recordings of subjects' interactions
with the confederate were made. Subjects were also video
taped during the manipulation phase of the experiment. A VHS
VCR was used for the present investigation. Video taping was
conducted via closed-circuit television in a Speech and
Hearing Laboratory. Each interview room contained a table
and two chairs, with a video camera attached to the wall.
While students were aware that the interactions were being
video taped, every effort was made to ensure that the
equipment was as unobtrusive as possible.

**Hesitation Variables.** Speech onset latency was
measured as the length of time between the instruction for
the subject to start the interaction and the first
substantive vocalization. Initial non-lexical utterances
and sociocentric sequences were not taken as the onset of
vocalization. This interval was measured by the use of
NONVERB (Honeycutt, 1987).

Since the experiment involved dialogue, it was
necessary to extract the pauses that were occurring because
the speaker was yielding his/her turn at talk from the
silent pause time. Switch pauses were defined as pauses
that occurred between a question (or request) and a
vocalized or non-vocalized response by the other. A similar
definition of switch pauses was used by Berger et al.
(1989). Therefore, silent planning pauses were
operationalized as total silent pause time minus switch
pause time. Using the video tapes as a data base, silent
pauses and switch pauses were measured by the use of NONVERB. Frequency and duration measures were tabulated in the present analysis.

Filled pauses were divided into two categories, "ah" and "non-ah" pauses. Using the NONVERB program, "ah" pauses were coded as "um," "er," "ah," and other such vocalizations that occurred before, during and between sentences. Frequency and duration measures were tabulated for each subject's use of "ah" type pauses. Coding of "non-ah" pauses included intra-sentence alterations of lexical items, sentence incompleteness, repetitions of words and phrases, omissions of words, sentence incompleteness, and tongue slips. Using the NONVERB program, frequency measures of "non-ah" pauses were tabulated.

Reliability. Two coders were trained to code each of the three types of hesitation phenomena and speech onset latency. Following a training session, the coders were asked to code three subjects' video taped interactions. Cohen's Kappa, an intraclass correlation coefficient, was used to assess the coders' reliability of the hesitation variables.

Content Evaluation. In order to assess the variety of message strategies used by subjects, interactions were coded using O'Hair and Cody's (1987) typology (see Appendix E) for the number of different compliance-gaining strategies used. According to O'Hair and Cody (1987) research into persuasive
strategies in everyday interpersonal communication reveals that people use a number of different, and sometimes subtle tactics to convince others to comply with their requests. Compliance-gaining strategies stem from bases of power and their use is almost always dependent upon interpersonal relationship factors. In their investigation O'Hair and Cody (1987) attempted to devise a typology that across all situations and types of relationships would account for all salient characteristics of interpersonal persuasive messages. They determined that there were nine global strategies that people use to solicit favorable responses in interpersonal relationships. The typology proposed by O'Hair and Cody included the following strategies: (1) direct request, (2) supporting evidence, (3) exchange, (4) distributive, (5) face maintenance, (6) other benefit, (7) referent influence, (8) empathic understanding, and (9) indirect tactics (see Appendix E).

In the present investigation O'Hair and Cody's typology was expanded by adding one additional category, probing questions. Although O'Hair and Cody (1987) categorized probing questions as an indirect strategy, for the purposes of the present investigation they were categorized by themselves. This was done because they were used so often by the subjects. Reliability was assessed by having two individuals code a portion of the data. Scott's Pi was used to assess interobserver reliability of the content coding.
Data Analysis. Once the survey data was collected, subjects' responses to the SII were factor analyzed. A frequency distribution was conducted in order to determine subjects' range of scores on the rehearsal scale. An examination of the frequency distribution indicated that the scores ranged from twenty-eight to sixty-four (M = 49, s.d. = 1.8). Subjects were divided into two groups, one reporting a high use of the rehearsal function of imagined interaction (range 28-35, M = 32, n = 71) and the second reporting a low use of the rehearsal function of imagined interaction (range 52-64, M = 58, n = 72). Twenty-seven subjects were deleted from further analyses since their scores represented a "middle" range (M = 44).

In order to assess pausing behaviors, data analysis included separate analyses of the frequency and duration of silent and ah type pauses described above. A durational measure was used to assess speech onset latency, and a frequency measure was used to assess "non-ah" type pauses. These, along with strategy use, served as the dependent measures. The two forms of mental rehearsal, mental rehearsal induced by the experiment and the self-reported tendency to mentally rehearse, served as the independent variables. Two-way analysis of variance was used in order to determine the degree to which mental rehearsal (induced and tendency) for an anticipated encounter was associated with speech fluency.
Nonparametric procedures were used in order to determine the relationship between rehearsal and message strategy selection. The use of compliance-gaining message strategy typology produced ordinal level data; therefore, it was necessary to use a test appropriate for ordinal data. The Mann-Whitney test, also known as the Wilcoxon test was selected. The procedure used by this test is analogous to that used in difference-of-means tests (see Blalock, 1979).

The next chapter reports the results of the investigation described in chapter four. Results are reported in terms of preliminary data analysis and each of the hypotheses and research questions proposed in chapter two.
Chapter IV

Results of The Impact of Rehearsal on Speech Fluency and Message Strategy Selection

The purpose of chapter four is to report the results of the investigation. The first section will describe the results for the preliminary analyses, reliability estimates, confederate effects, and the manipulation check. The second section includes results concerning the hypotheses and research questions under investigation. Finally, this chapter will present the results of other analyses conducted on the data. Analyses for the present investigation were conducted with the assistance of SPSSx statistical package. Hand calculations were computed for reliability estimates for the dependent variables.

Preliminary Data Analysis

The first step of data analysis included two factor analyses of the survey of imagined interaction. Two factor analyses were necessary since the characteristics of imagined interactions are conceptually different from the functions of imagined interactions. The first factor analysis was conducted in order to determine if questions added to the survey concerning the rehearsal function of imagined interaction actually loaded on the rehearsal function factor. All questions concerning the functions of imagined interaction were included in the first factor analysis. The second factor analysis included
all questions concerning the characteristics of imagined interaction.

Consistent with previous research (Edwards et al., 1988), results from the factor analyses indicated that the survey of imagined interaction included three functions and seven characteristics. Items previously used to tap the pleasantness characteristic of imagined interaction were not included in the present investigation, since they were not theoretically relevant.

Results from the factor analysis also revealed that rehearsal emerged as an independent factor (factor 1). This factor included all of the items added for purposes of the present investigation (see Table 1). Other functions that emerged as independent factors were catharsis (factor 2) and self-understanding (factor 3). Characteristics that emerged as independent factors included activity, proactivity, dominance, retroactivity, specificity, variety, and discrepancy.

A second preliminary analysis was conducted to test for the effects of a confounding variable. Previous research has suggested a relationship between hesitation phenomena and anxiety (see Ragsdale, 1976). In an effort to determine if anxiety was a confounding variable, correlations were computed for communication apprehension (McCroskey, 1986),
<table>
<thead>
<tr>
<th>Scale Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rehearsal</td>
<td>.66846*</td>
<td>.13876</td>
<td>.12069</td>
</tr>
<tr>
<td>Catharsis</td>
<td>.70569*</td>
<td>.11541</td>
<td>.27953</td>
</tr>
<tr>
<td>Self-Understanding</td>
<td>-.68217*</td>
<td>-.05294</td>
<td>.17336</td>
</tr>
<tr>
<td>% of Variance</td>
<td>41.5%</td>
<td>11.6%</td>
<td>6.6%</td>
</tr>
</tbody>
</table>

I use imagined interactions in order to prepare for important conversations.

I use imagined interactions to practice what I will say in upcoming encounters.

I do not use imagined interactions to plan for conversations in advance.

I rarely use imagined interactions to prepare for upcoming encounters.

My imagined interactions do not enable me to rehearse for upcoming conversations.

My imagined interactions enable me to prepare for conversations in advance.

My imagined interactions do not enable me to rehearse for anticipated encounters.

My imagined interactions help me to understand my partner better.

My imagined interactions help me to understand myself better.
| My imagined interactions help me in clarifying my thoughts and feelings | .23744 | .72214* | .21347 |
| My imagined interactions help me to actually talk about feelings or problems later with the interaction partner. | .36097 | .55737* | .32086 |
| My imagined interactions help me plan what I am going to say for an anticipated encounter. | .76401* | .22240 | .30642 |
| My imagined interactions help me relive tension and stress. | .01807 | .60186* | .21891 |
| I have imagined interactions in order to practice what I am actually going to say to another person. | .71426* | .09733 | .39709 |
| My imagined interactions help me to reduce uncertainty about the other's actions and behaviors. | .08503 | .24597 | .77375* |
| My imagined interactions enable me to rehearse the words I will say in an upcoming encounter. | .77888* | .14231 | .34854 |

**Note.** * denotes item loaded on factor

Eigenvalue = 6.64427
the pausal variables under investigation, and an individual tendency to rehearse mentally. Results of the Pearson product moment correlation analysis indicated that while some significant correlations existed between communication apprehension, measured by McCroskey's PRCA-24b (Cronbach's alpha = .87), and the variables under investigation the percent of variance was minimal. They were as follows: (1) individual tendency to rehearse mentally (r = -.23, p < .005); (2) silent pause frequency (r = -.20, p < .013); (3) silent pause duration (r = .04, p < .328); (4) "ah" pause frequency (r = -.02, p < .408); (5) "ah" pause duration (r = -.001, p < .492); (6) onset latency, (r = .04, p < .295). Therefore, it was concluded that an individual tendency to rehearse mentally, and silent pause frequency were only minimally associated with communication anxiety. The remaining pausal variables were not significantly associated with communication anxiety.

A rehearsal scale was computed from items abstracted from the SII (Edwards, et al., 1988). This scale included ten questions concerning the use of imagined interaction as a precommunicative planning device. An individual tendency to rehearse mentally, one of the independent variables, was operationalized in terms of this computed scale (Cronbach's alpha = .90).

Reliability Indexes for Dependent Variables

In order to compute reliability for behavioral measures
of hesitations, Cohen's Kappa was used. Scott's Pi was used for non-ah pauses (frequency only) and compliance-gaining strategy use. According to Bakeman and Gottman (1986) when interval coding strategies are used, the investigator should not use intervals so long in duration that they mask onsets and offsets of the events being studied. They suggested that the larger the coding interval the more likely that the estimates of frequencies, durations and behavioral sequences will be distorted. Therefore, in the present investigation all durational measures reflect 10 second intervals.

Reliabilities are as follows: Raw scores for Silent pauses (K = 0.98), Ah pauses (K = 0.94), Non-ah pauses (Scott's Pi = 0.84), Switch pauses (K = 0.78) Speech onset latency (K = 0.96), Compliance-gaining strategies (Pi = 0.99).

Confederate Effects

In order to determine whether effects on the pausal variables were due to confederates, one-way ANOVAs were computed for each of the dependent variables. The two confederates served as the independent variables, while pausal variables and onset latency served as the dependent variables. Results from a one-way ANOVA for confederates indicated that silent pause frequency [F(1, 142) = 0.010, p > .80], silent pause duration [F(1, 142) = 2.18, p > .10], "ah" pause frequency [F(1, 142) = 0.020, p > .80], "ah" pause duration [F(1, 142) = 0.000, p > .95], and "non-ah" pause frequency [F(1, 142) = 0.000, p > .95] were not significantly
related to the confederates. Therefore, it was concluded that the confederates did not significantly influence the pausing behaviors of the subjects.

**Manipulation Check**

Subjects were asked to respond to four questions concerning the degree to which they engaged in planning activity during the initial task (planning or distractor) of the experiment. These four questions were designed as a manipulation check in order to determine if subjects in the planning task actually engaged in planning for the encounter and if subjects in the distractor task were actually distracted from planning for the encounter.

Each item was presented as a Likert type scale, in which 1 represented strongly agree, and 5 represented strongly disagree. Results of a t-test indicated that subjects in the planning task (M= 7.5, s.d.= 3.1, T= -15.28, p > .000) reported that they engaged in significantly more planning during the initial task, than did subjects in the distractor task (M=15.9, s.d.= 2.8).

**Hypotheses and Research Questions**

**Overview**

The present investigation included two independent variables: (1) mental rehearsal induced by the experiment; and (2) an individual tendency to rehearse mentally, operationalized as the rehearsal function of imagined interaction. Hypotheses and research questions reflect
predictions made in reference to both of these variables.

In order to use the rehearsal function of imagined interaction as a dichotomous variable, the subjects' scores were divided into three groups. A frequency distribution of the self-reported scores was used to divide the subjects into low, medium, and high use of the rehearsal function of imagined interaction, as described in the preceding chapter. The medium group was eliminated from further analysis. Therefore, the independent variable, individual tendency to rehearse mentally was divided into two groups: (1) a self-reported low tendency to rehearse mentally; (2) a self-reported high tendency to rehearse mentally. Both frequency and duration measures of silent pausing and "ah" pausing were included in the present investigation.

**Silent Pauses.** The first two hypotheses proposed that induced mental rehearsal and an individual tendency to rehearse prior to an anticipated encounter would decrease the amount of silent pausing in speech. Silent pausing due to planning was operationalized as total silence duration of the subjects' silence minus the duration of switch pauses. Results from the 2-way ANOVA for silent pause frequency indicated that there was a significant main effect for induced rehearsal \([F(1, 141) = 13.9, p < .000, R = .178]\) but not for an individual tendency to rehearse mentally \([F(1,141) = .02, p > .80]\) (see Table 2).

An examination of the means indicated that subjects who
engaged in the planning task had significantly fewer silent pauses \( (M = 11.9) \) than subjects who engaged in the distractor task \( (M = 15.7) \). Subjects who reported a high use of the rehearsal function \( (M = 13.7) \) did not have significantly fewer silent pauses than subjects who reported a low use of the rehearsal function \( (M = 13.5) \).
### Table 2

**Two-Way ANOVA for Silent Pause Frequency**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIN EFFECTS</td>
<td>312.181</td>
<td>2</td>
<td>160.590</td>
<td>7.11*</td>
</tr>
<tr>
<td>TASK</td>
<td>315.332</td>
<td>1</td>
<td>315.332</td>
<td>13.97*</td>
</tr>
<tr>
<td>TENDENCY</td>
<td>.453</td>
<td>1</td>
<td>.453</td>
<td>.88</td>
</tr>
<tr>
<td>2-WAY INTERACTIONS</td>
<td>5.358</td>
<td>1</td>
<td>5.358</td>
<td>.62</td>
</tr>
<tr>
<td>EXPLAINED</td>
<td>326.539</td>
<td>3</td>
<td>108.846</td>
<td>4.82*</td>
</tr>
<tr>
<td>RESIDUAL</td>
<td>2640.701</td>
<td>141</td>
<td>22.570</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>2967.240</td>
<td>143</td>
<td>24.727</td>
<td></td>
</tr>
</tbody>
</table>

**Note.** * indicates p < .01

**Note.** TASK (planning or distractor), TENDENCY (high or low individual tendency to rehearse mentally)
Results from the 2-way ANOVA for silent pause duration indicated that there were significant main effects for induced mental rehearsal, \[ F(1, 141) = 39.21, p < .000, R = .454 \], and for an individual tendency to rehearse mentally, \[ F(1, 141) = 5.85, p < .018, R = .454 \] (see Table 3). An examination of the means indicated that subjects in the planning task had significantly lower planning pause durations (M = 19.2) than subjects in the distractor task (M = 43.1). In reference to the main effect for an individual tendency to rehearse mentally, subjects with a low self-reported tendency to rehearse mentally had significantly longer silent pause durations (M = 37.5) than subjects who reported that they had a high tendency to rehearse mentally (M = 23.7).

"Ah" Pauses. The third and fourth hypotheses addressed the notion of "ah" pauses. Utterances such as "ah," "er," and "um" were categorized as "ah" pauses. The third and fourth hypotheses predicted that induced mental rehearsal and an individual tendency to rehearse mentally prior to an anticipated encounter would decrease the amount of "ah" pausing in that encounter. Results from 2-way ANOVA's indicated of "ah" pause frequency indicated no significant effects \[ F(2, 141) = .36, p < .70 \]. Results also indicated no significant effects for duration of "ah" type pauses \[ F(2, 141) = .62, p < .53 \]. Therefore, neither of these hypotheses was supported in the present study.
TABLE 3
TWO-WAY ANOVA FOR SILENT PAUSE DURATION

<table>
<thead>
<tr>
<th>SOURCE OF VARIATION</th>
<th>SUM OF SQUARES</th>
<th>DF</th>
<th>MEAN SQUARE</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIN EFFECTS</td>
<td>10560.442</td>
<td>2</td>
<td>5280.221</td>
<td>28.64*</td>
</tr>
<tr>
<td>TASK</td>
<td>7230.888</td>
<td>1</td>
<td>7230.888</td>
<td>39.22*</td>
</tr>
<tr>
<td>TENDENCY</td>
<td>1078.674</td>
<td>1</td>
<td>1078.674</td>
<td>5.85*</td>
</tr>
<tr>
<td>2-WAY INTERACTIONS</td>
<td>181.472</td>
<td>1</td>
<td>181.472</td>
<td>.98</td>
</tr>
<tr>
<td>EXPLAINED</td>
<td>10741.914</td>
<td>3</td>
<td>3580.638</td>
<td>19.42*</td>
</tr>
<tr>
<td>RESIDUAL</td>
<td>12538.825</td>
<td>141</td>
<td>184.394</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>23280.739</td>
<td>143</td>
<td>327.898</td>
<td></td>
</tr>
</tbody>
</table>

NOTE. * indicates P < .01

NOTE. TASK (planning and distractor), TENDENCY (high and low individual tendency to rehearse mentally)
## TABLE 4

### TWO-WAY ANOVA FOR AH PAUSE FREQUENCY

<table>
<thead>
<tr>
<th>SOURCE OF VARIATION</th>
<th>SUM OF SQUARES</th>
<th>DF</th>
<th>MEAN SQUARE</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIN EFFECTS</td>
<td>10.374</td>
<td>2</td>
<td>5.187</td>
<td>.70</td>
</tr>
<tr>
<td>TASK</td>
<td>10.373</td>
<td>1</td>
<td>10.373</td>
<td>.71</td>
</tr>
<tr>
<td>TENDENCY</td>
<td>.324</td>
<td>1</td>
<td>.074</td>
<td>.02</td>
</tr>
<tr>
<td>2-WAY INTERACTIONS</td>
<td>.074</td>
<td>1</td>
<td>.074</td>
<td>.00</td>
</tr>
<tr>
<td>EXPLAINED</td>
<td>10.447</td>
<td>3</td>
<td>3.482</td>
<td>.23</td>
</tr>
<tr>
<td>RESIDUAL</td>
<td>1706.296</td>
<td>141</td>
<td>14.584</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>1716.744</td>
<td>143</td>
<td>14.306</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE.** TASK (planning and distractor), TENDENCY (high and low individual tendency to rehearse mentally.)
### TABLE 5

**TWO-WAY ANOVA FOR AH PAUSE DURATION**

<table>
<thead>
<tr>
<th>SOURCE OF VARIATION</th>
<th>SUM OF SQUARES</th>
<th>DF</th>
<th>MEAN SQUARE</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIN EFFECTS</td>
<td>10.840</td>
<td>2</td>
<td>5.420</td>
<td>.62</td>
</tr>
<tr>
<td>TASK</td>
<td>4.834</td>
<td>1</td>
<td>4.834</td>
<td>.55</td>
</tr>
<tr>
<td>TENDENCY</td>
<td>4.144</td>
<td>1</td>
<td>4.144</td>
<td>.47</td>
</tr>
<tr>
<td>2-WAY INTERACTIONS</td>
<td>.477</td>
<td>1</td>
<td>.477</td>
<td>.05</td>
</tr>
<tr>
<td>EXPLAINED</td>
<td>11.317</td>
<td>3</td>
<td>3.772</td>
<td>.43</td>
</tr>
<tr>
<td>RESIDUAL</td>
<td>1022.026</td>
<td>141</td>
<td>8.735</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>1033.342</td>
<td>143</td>
<td>8.611</td>
<td></td>
</tr>
</tbody>
</table>

**Note.** TASK (planning and distractor), TENDENCY (high and low individual tendency to rehearse mentally).
"Non-Ah" Pauses. The fifth and sixth hypotheses were concerned with what have been classified as "non-ah" pauses. According to Mahl (1956) these pauses include sentence changes, repetitions/stutters, omissions, sentence incompletions, tongue slips, and intruding incoherent sounds. Hypotheses five and six predicted that induced rehearsal and an individual tendency to rehearse mentally prior to an encounter would decrease the amount of non ah pauses in that encounter. Results from 2-way analysis of variance of frequency for "non-ah" type pauses indicated no significant differences for the two independent variables \[F(2, 141) = .17, p < .84\]. Therefore, the fifth and sixth hypotheses were not supported in the present investigation (see Table 6).

Speech onset latency. Hypotheses eight and nine predicted that induced rehearsal prior to an anticipated encounter and an individual tendency to rehearse mentally prior to an anticipated encounter would result in shorter speech onset latencies in that encounter. Results from a 2-way analysis of variance for speech onset latency indicated that there was a significant main effect for induced mental rehearsal \[F(1, 141) = 11.24, p < .001, R = .166\] (see Table 7). Speech onset latency was significantly shorter for subjects engaged in the planning task \(M = 3.6\), than for those engaged in the distractor task \(M = 7.6\).
<table>
<thead>
<tr>
<th>SOURCE OF VARIATION</th>
<th>SUM OF SQUARES</th>
<th>DF</th>
<th>MEAN SQUARE</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIN EFFECTS</td>
<td>2.706</td>
<td>2</td>
<td>1.353</td>
<td>.17</td>
</tr>
<tr>
<td>TASK</td>
<td>1.455</td>
<td>1</td>
<td>1.455</td>
<td>.18</td>
</tr>
<tr>
<td>TENDENCY</td>
<td>1.714</td>
<td>1</td>
<td>1.714</td>
<td>.21</td>
</tr>
<tr>
<td>2-WAY INTERACTION</td>
<td>27.842</td>
<td>1</td>
<td>27.842</td>
<td>3.50</td>
</tr>
<tr>
<td>EXPLAINED</td>
<td>30.547</td>
<td>3</td>
<td>10.182</td>
<td>1.28</td>
</tr>
<tr>
<td>RESIDUAL</td>
<td>930.263</td>
<td>141</td>
<td>7.951</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>960.810</td>
<td>143</td>
<td>8.007</td>
<td></td>
</tr>
<tr>
<td>SOURCE OF VARIATION</td>
<td>SUM OF SQUARES</td>
<td>DF</td>
<td>MEAN SQUARE</td>
<td>F</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>----------------</td>
<td>----</td>
<td>-------------</td>
<td>-------</td>
</tr>
<tr>
<td>MAIN EFFECTS</td>
<td>288.601</td>
<td>2</td>
<td>144.301</td>
<td>6.83*</td>
</tr>
<tr>
<td>TASK</td>
<td>237.642</td>
<td>1</td>
<td>237.642</td>
<td>11.25*</td>
</tr>
<tr>
<td>TENDENCY</td>
<td>7.580</td>
<td>1</td>
<td>.359</td>
<td>.36</td>
</tr>
<tr>
<td>TWO-WAY INTERACTION</td>
<td>14.097</td>
<td>1</td>
<td>.667</td>
<td>.41</td>
</tr>
<tr>
<td>EXPLAINED</td>
<td>302.698</td>
<td>3</td>
<td>100.899</td>
<td>4.78*</td>
</tr>
<tr>
<td>RESIDUAL</td>
<td>1437.177</td>
<td>141</td>
<td>21.135</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>1739.875</td>
<td>143</td>
<td>24.505</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE.** * indicates p > .004
**Message Strategy Selection.** Finally, two research questions were proposed in the present investigation. Research questions one and two sought to determine what effect induced mental rehearsal prior to an anticipated encounter and an individual tendency to rehearse mentally prior to an anticipated encounter had on message strategy in that encounter. Results from the Mann-Whitney tests indicated that significant differences were found for both research questions (see Table 8a and 8b). Subjects who engaged in the rehearsal task used more strategic messages (M = 76) during the actual interaction than subjects who had engaged in the distractor task (M = 44). Likewise, subjects who reported a high individual tendency to rehearse mentally (M = 41) used more strategic messages than subjects who reported a low tendency to rehearse mentally (M = 31).

In order to examine the use of the individual message strategies that subjects used, separate Mann-Whitney tests were performed for each strategy and the two independent variables. Results indicated that subjects in the planning task, as compared to those in the distractor task, used more referent influence, empathic understanding, indirect tactics, distributive tactics, exchange, and supporting evidence (see Table 9). Results also indicated that individuals who reported a high individual tendency to rehearse mentally used more indirect tactics than those who reported a low individual tendency to rehearse mentally (see
### TABLE 8a

MANN-WHITNEY TEST FOR TOTAL STRATEGY USE BY TASK

<table>
<thead>
<tr>
<th>TASK</th>
<th>n</th>
<th>U</th>
<th>W</th>
<th>Z-score</th>
<th>2-TAILED PROB</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLANNING</td>
<td>89</td>
<td>870.0</td>
<td>2410.0</td>
<td>-5.0135</td>
<td>.00000</td>
</tr>
<tr>
<td>DISTRACTOR</td>
<td>81</td>
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</tr>
</tbody>
</table>

### TABLE 8b

MANN-WHITNEY TEST FOR TOTAL STRATEGY USE BY TENDENCY

<table>
<thead>
<tr>
<th>TEN.</th>
<th>n</th>
<th>U</th>
<th>W</th>
<th>Z-score</th>
<th>2-TAILED P</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH</td>
<td>71</td>
<td>426.5</td>
<td>897.5</td>
<td>-1.9826</td>
<td>.0474</td>
</tr>
<tr>
<td>LOW</td>
<td>72</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>
### TABLE 9

**MANN-WHITNEY TESTS FOR INDIVIDUAL MESSAGE STRATEGIES BY TASK**

<table>
<thead>
<tr>
<th>STRATEGY</th>
<th>GROUP</th>
<th>MEAN</th>
<th>W</th>
<th>Z-score</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIRECT REQUEST</td>
<td>P</td>
<td>59.9</td>
<td>3484.5</td>
<td>-0.539</td>
<td>.589</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>63.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUPPORTING EVIDENCE</td>
<td>P</td>
<td>67.6</td>
<td>2958.5</td>
<td>-2.198</td>
<td>.027</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>53.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXCHANGE</td>
<td>P</td>
<td>67.6</td>
<td>2973.5</td>
<td>-3.148</td>
<td>.016*</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>54.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FACE MAINTENANCE</td>
<td>P</td>
<td>63.3</td>
<td>3261.5</td>
<td>-1.254</td>
<td>.209</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>59.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DISTRIBUTIVE</td>
<td>P</td>
<td>76.3</td>
<td>2390.5</td>
<td>-5.391</td>
<td>.000*</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>43.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INDIRECT TACTICS</td>
<td>P</td>
<td>74.9</td>
<td>2482.4</td>
<td>-4.842</td>
<td>.000*</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>45.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMPATHIC UNDERSTAND</td>
<td>P</td>
<td>67.3</td>
<td>2994.5</td>
<td>-2.535</td>
<td>.011*</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>54.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REFERENT INFLUENCE</td>
<td>P</td>
<td>71.2</td>
<td>2733.5</td>
<td>-3.625</td>
<td>.000*</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>49.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OTHER BENEFIT</td>
<td>P</td>
<td>62.4</td>
<td>3317.5</td>
<td>-0.484</td>
<td>.628</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>60.3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROBING QUESTION</td>
<td>P</td>
<td>61.1</td>
<td>3409.5</td>
<td>-0.139</td>
<td>.889</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>61.9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note.** P = Planning Task, D = Distractor Task

**Note.** indicates significant at the .02 level.
### TABLE 10

**MANN-WHITNEY TESTS FOR INDIVIDUAL MESSAGE STRATEGIES BY TENDENCY**

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Group</th>
<th>Mean</th>
<th>W</th>
<th>Z-score</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Request</td>
<td>L</td>
<td>39.6</td>
<td>1150.5</td>
<td>0.905</td>
<td>.364</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>35.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supporting Evidence</td>
<td>L</td>
<td>35.7</td>
<td>1032.5</td>
<td>0.461</td>
<td>.644</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>37.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exchange</td>
<td>L</td>
<td>35.3</td>
<td>1024.0</td>
<td>-0.889</td>
<td>.374</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>38.1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Face Maintenance</td>
<td>L</td>
<td>34.2</td>
<td>0993.0</td>
<td>-1.665</td>
<td>.095</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>38.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distributive</td>
<td>L</td>
<td>37.2</td>
<td>1075.5</td>
<td>-0.048</td>
<td>.962</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>36.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indirect Tactics</td>
<td>L</td>
<td>31.0</td>
<td>0901.5</td>
<td>-2.015</td>
<td>.043</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>40.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empathic Understand</td>
<td>L</td>
<td>35.9</td>
<td>1042.0</td>
<td>-0.417</td>
<td>.676</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>37.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Referent Influence</td>
<td>L</td>
<td>35.2</td>
<td>1076.0</td>
<td>-0.599</td>
<td>.548</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>37.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Benefit</td>
<td>L</td>
<td>37.1</td>
<td>1076.0</td>
<td>-0.048</td>
<td>.961</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>36.9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probing Question</td>
<td>L</td>
<td>33.5</td>
<td>0972.0</td>
<td>-1.142</td>
<td>.253</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>39.3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* L = low use of rehearsal function, H = high use of rehearsal function.
Table 10). In order to control for inflation of error alpha was set at the .02 level.

**Other Analyses.** Although no hypotheses or research questions were proposed, the present investigation also examined the degree to which individuals reported that they engaged in imagined interaction activity during the planning and distractor tasks. Following the role playing activity, subjects answered three questions to determine the degree to which they engaged in imagined interactions during the initial task (see Appendix A). Each question contained a Likert type scale, in which 1 represented strongly agree, and 5 represented strongly disagree.

Results from a T-test of the two initial task groups (planning and distractor) indicated that subjects in the planning task (M=6.7, s.d.=2.5, T = -8.93, p > .000) reported that they engaged in more imagined interaction activity than subjects in the distractor task (M = 10.88).

A T-test was also computed for reported high and low individual tendency to rehearse mentally. Results indicated that individuals who had a high tendency to rehearse mentally (M= 9.1, s.d.= 3.3, T = 3.2, p < .002 ) reported that they engaged in imagined interactions during the initial task more than subjects who reported a low individual tendency to rehearse mentally (M = 7.3, s.d. = 3.5, T = 3.2, p < .002).

Finally, subjects were asked two questions pertaining
to previous experience with the role playing topic (see Appendix A). They were asked to indicate whether or not they had: (1) thought about talking to a friend about a drinking problem; and (2) actually talked to a friend about a drinking problem. One hundred twenty-two of the subjects provided data for these two questions. Seventy-four subjects reported that they had thought about talking to a friend about a drinking problem, while forty-eight had not. Forty-two subjects reported that they had approached a friend about a drinking problem, while eighty reported that they had not.

A two-way ANOVA was computed using these two questions as independent variables, and silent pausing as the dependent variables. Only one significant main effect was found (see Table 11). A main effect for silent pausing was found for subjects that had thought about talking to a friend about a drinking problem \([F(1,121) = 4.2, p < .04]\), but no significant effect was found for individuals who had actually talked to a friend about a drinking problem \([F(1,121) = 1.4, p > .20]\). An examination of the means indicated that individuals who had thought about talking to a friend about a drinking problem had significantly less silent pause duration than those who had not thought about talking to a friend about a drinking problem (yes, \(M = 31.7\) seconds; no, \(M = 37.6\) seconds).

The following chapter provides a discussion of the
results reported in Chapter four. The fifth chapter also includes a discussion of the theoretical implications of these results in terms of links to invention and style. Finally, the last chapter makes recommendations for future research.
### TABLE 11

**2-WAY ANOVA FOR SILENT PAUSE BY PRIOR THOUGHT AND PRIOR EXPERIENCE**

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>SUM OF SQ</th>
<th>DF</th>
<th>MEAN SQ</th>
<th>F</th>
<th>SIG.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIN EFFECTS</td>
<td>1505.74</td>
<td>2</td>
<td>752.8</td>
<td>2.10</td>
<td>.126</td>
</tr>
<tr>
<td>PRIOR THOUGHT</td>
<td>1497.19</td>
<td>1</td>
<td>1497.1</td>
<td>4.28</td>
<td>.043</td>
</tr>
<tr>
<td>PRIOR EXP.</td>
<td>499.82</td>
<td>1</td>
<td>499.8</td>
<td>1.48</td>
<td>.239</td>
</tr>
<tr>
<td>EXPLAINED</td>
<td>1731.12</td>
<td>3</td>
<td>577.0</td>
<td>1.61</td>
<td>.190</td>
</tr>
<tr>
<td>RESIDUAL</td>
<td>42187.28</td>
<td>119</td>
<td>357.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>43918.41</td>
<td>122</td>
<td>362.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER V
CONCLUSIONS CONCERNING THE ROLE THAT PREPLANNING PLAYS IN SPEECH PRODUCTION

The primary purpose of the present investigation was to explore the link between invention and eloquence by examining the role that preplanning for interactions plays in speech fluency and message strategy use. The purpose of chapter five is to discuss the results of the present investigation. First, results will be discussed in terms of the hypotheses and research questions presented earlier. The second section will discuss theoretical implications of the results found in the present investigation and attempt to provide a framework for integrating theories of information processing into planning for anticipated encounters. Finally, the present chapter will make recommendations for future research and suggest general conclusions.

Hypotheses and Research Questions

Over the past three decades a great deal of research has sought to link hesitation phenomena with cognitive processing demands (Siegman, 1979). The present investigation sought to extend this body of research by investigating the role that mental rehearsal plays in speech production processes. The first two hypotheses proposed in the present study predicted that induced rehearsal for an anticipated encounter and an individual tendency to rehearse
mentally for an anticipated encounter would decrease the amount of silent pausing in that encounter.

In relation to duration of silent pauses, results from the present investigation were significant. Main effects were found for each of the independent variables. Therefore, both induced mental rehearsal and an individual tendency to rehearse mentally decreased the amount of silent pausing that subjects engaged in during the role playing activity.

These findings are consistent with previous empirical research on preplanning. Silent pauses in the stream of speech are often attributed to cognitive processes that are taking place at the time of the pause (Goldman-Eisler, 1968). The general notion is that preplanning the content of speech will reduce on-line planning time and will be evidenced in the form of fewer silent pauses in the stream of speech. Therefore, one conclusion that may be drawn from the present investigation is that individuals who do not preplan for anticipated encounters engage in more planning during the actual encounter, as evidenced by longer periods of silence in those encounters.

While the strength of association was not as great as for induced mental rehearsal, results also indicated that subjects who reported a high individual tendency to rehearse mentally had shorter silent pause duration than subjects who reported a low individual tendency to rehearse mentally. Therefore, an individual tendency to rehearse mentally also
has an effect on decreasing cognitive processing demands during actual encounters. Furthermore, since an individual tendency to rehearse mentally was operationalized as the use of the rehearsal function of imagined interactions, a second conclusion may be drawn for the present investigation. This conclusion is that imagined interactions serve as a type of cognitive preplanning device.

Previous research on imagined interactions has suggested that actors use imagined interactions to rehearse for anticipated encounters (Edwards et al., 1988). Zagacki et al. (1989) posited that imagined interactions are representations of scripts that allow actors to access information and therefore plan for future interaction. Results from the present investigation support the notion that imagined interactions serve a rehearsal function and allow the actor to engage in preplanning for anticipated encounters. Implications for imagined interactions as a type of cognitive preplanning device will be discussed later.

A second type of pausal phenomena that has been linked to preplanning the content of speech is the filled pause (Siegman, 1979). For the purposes of the present investigation filled pauses were divided into two categories: "ah" and "non-ah" pauses. The present study proposed that induced mental rehearsal prior to an anticipated encounter and an individual tendency to rehearse
mentally prior to an anticipated encounter would decrease the amount of "ah" pausing in that encounter. The present study also predicted that induced mental rehearsal prior to an anticipated encounter and an individual tendency to rehearse mentally prior to an anticipated encounter would decrease the amount of "non-ah" pausing in that encounter.

Evidence from the results of the present investigation suggested no significant relationship between induced mental rehearsal for anticipated encounters or an individual tendency to rehearse mentally for anticipated encounters and filled pauses. Several theorists have suggested that "ah" pauses reflect uncertainty about lexical decisions (Goldman-Eisler, 1968; Siegman, 1979). According to Siegman (1979) cognitive decision-making in conversation may manifest itself in filled pauses, so that the speaker will not lose his or her turn at talk, especially if the speaker is searching for the appropriate word or phrase.

Based on the results from the present investigation, if one concludes that "ah" type pauses reflect lexical decision points, then one must also conclude that preplanning for anticipated encounters does not necessarily include making word choices. Instead, preplanning the content of speech may reflect more referential planning. Actors may plan "general ideas" about what they anticipate saying to another, and what they anticipate another might say to them. However, these "general ideas" may exist in limited
linguistic form. The notion of linguistic form will be discussed in the section concerning theoretical implications.

Few studies have examined the role of "non-ah" pauses in cognitive processing. In fact, many studies do not distinguish between "ah" and "non-ah" pauses. Therefore, there is limited theoretical evidence for the role that "non-ah" pauses play in planning for anticipated encounters.

Some evidence has suggested that "non-ah" pauses are related to anxiety (Siegman & Pope, 1965). An examination of the subjects that had the highest "non-ah" pause frequency revealed an interesting pattern. Three subjects had "non-ah" frequency scores that were well above the mean. In each case, the subject disclosed to the confederate that he or she had a close family member die from an alcohol related illness. While this is merely an observation, future research should attempt to explore the role that anxiety produced by certain conversational topics plays in message production.

A fourth variable that has been linked to cognitive processing demands and speech production is speech onset latency. In a study conducted by Siegman (1979) he found that since prolonged silence during conversation carries the risk of losing one's speaking turn, a great deal of cognitive decision making often takes place at the onset of the conversation. He concluded that cognitive decision
making often manifest itself in prolonged initial delays. These findings had been supported in previous research by Goldman-Eisler (1968).

The eighth hypothesis predicted that induced mental rehearsal prior to an anticipated encounter would result in shorter speech onset latency in that encounter. A significant main effect was found for induced mental rehearsal and speech onset latency.

An examination of onset latency duration indicated that subjects in the planning task had shorter speech on-set latencies than subjects in the distractor task. The initial delays found in subjects engaging in the distractor task may indicate that these subjects were engaging in on-line planning prior to initiating the encounter. As reported earlier, previous research has suggested that cognitive decision-making and uncertainty about the encounter are likely to manifest themselves in the form of prolonged initial delays (see Siegman, 1979). Results from the present investigation support the notion that preplanning the content of speech may allow the speaker to reduce uncertainty and make decisions concerning the course of action that he or she may follow in the anticipated encounter.

The ninth hypothesis predicted that an individual tendency to rehearse mentally prior to an anticipated encounter would result in shorter speech onset latencies in
that encounter. Results from the present study did not indicate significant effects for this hypothesis. Overall, the results from the eighth and ninth hypotheses indicate that while induced preplanning had an effect on speech onset latency, an individual tendency to rehearse mentally did not have an effect on this variable.

While a large body of research has supported the notion that speech fluency is related to preplanning of speech, few investigations have examined the actual content of preplanned and unplanned speech. A second focus of the present study was to integrate research on compliance-gaining strategies with research on preplanning for anticipated encounters. The present study attempted to investigate compliance-gaining strategy use from a behavioral perspective by categorizing the types of message strategies used by individuals who engaged in rehearsal (induced and individual tendency) for anticipated encounters and those who were distracted from rehearsing or who reported a low individual tendency to rehearse mentally.

The rationale behind this portion of the investigation proposed that individuals who preplan for anticipated encounters access more relevant information, procedural records, and knowledge structures related to the anticipated topic. Therefore, these individuals may, in turn, make use of different compliance-gaining strategies than those who do not engage in preplanning.
The present investigation proposed two research questions. The first question sought to determine if induced mental rehearsal prior to anticipated encounter had an effect on the message strategies used by the speaker. Results from the present study indicated that there were significant results for this research question. Individuals who engaged in the planning task used a greater number and variety of message strategies than those who did not engage in the planning task.

An examination of the individual strategies indicated that subjects who engaged in the planning task used more of the following strategies: exchange, which includes attempts to gain the compliance of the target by offering favors, services, money; distributive tactics, which are attempts to use coercive influence or attempt to make the target feel guilty, sad, or selfish for not complying; indirect tactics, which involve initiating a conversation for which the target will infer or assume the actor's real intent; empathic understanding, or appealing to the target's love and affection for the actor; and referent influence or references to how alike the target and actor are.

Zagacki et al. (1989) suggested that rehearsal for anticipated encounters, experienced via imagined interactions, reflect representations of scripts that allow actors to access information and therefore plan for future interactions. They also suggested that rehearsal for
anticipated encounters may be seen as a type of simulation heuristic, "insomuch as scenarios and simulations are experienced by actors in the form of imagined interactions" (p. 5).

The results from the present investigation concerning message strategy use and rehearsal for anticipated encounters lend support to the notion that individuals who engage in preplanning for anticipated encounters may generate simulation heuristics for possible alternatives and consequently make use of a greater variety of message strategies. Results may also indicate that preplanning for anticipated encounters allows the actor to devise more complex plans for interaction. This finding can also be contrasted with the null results reported for hypotheses two and three.

The second and third hypotheses proposed that induced rehearsal and an individual tendency to rehearse mentally prior to an anticipated encounter would decrease the amount of "ah" pausing in that encounter. The present study did not find significant results for these two hypotheses. Furthermore, an interpretation of these results suggested that "ah" pausing may be related to lexical decision points. During the stream of speech an actor may search for a precise word or phrase. While this search is taking place the speaker may hold his or her turn at talk by uttering nonlexical sounds such as "ah," "um," and "er."
Individuals who have little to say are not likely to attempt to hold their turn at talk. Therefore, they engage in less "ah" type pausing. On the other hand, individuals who have more information to communicate may attempt to hold their turn at talk so that the information is communicated to the receiver. In the current investigation, subjects in the planning task used a greater number and variety of message strategies, indicating that they had communicated more information to the confederate than those in the distractor task. Overall, these strategies represented more complex speech acts than those used by the subjects in the distractor task; so that individuals in the planning task had more lexical diversity than those subjects in the distractor task.

Results from the second research question sought to determine what effect the individual tendency to rehearse mentally prior to an anticipated encounter had on message strategy selection in that encounter. Results from the present investigation determined that high rehearsal individuals (operationalized as the rehearsal function of imagined interaction) used more messages than those who reported a low tendency to rehearse prior to an anticipated encounter. An examination of the individual strategies indicated that individuals reporting a high tendency to rehearse mentally used significantly more indirect tactics than individuals reporting a low tendency to rehearse.
mentally.

In exploring the role of imagined interaction in planning, it is important to note that in a survey given immediately following the role playing task, subjects who engaged in the planning task reported that they engaged in imagined interactions during the initial task significantly more than individuals engaged in the distractor task. Therefore, one may conclude that inducing the subject to "rehearse" prior to an anticipated encounter may also induce imagined interaction activity. The following section explores the theoretical implications of this study.

**Theoretical Implications**

While historically scholars in speech communication have been concerned with developing a theory of invention that incorporates style and delivery (Kneupper & Anderson, 1980) limited empirical research has focused on this goal. The present study sought to investigate one area that incorporates invention and style by examining the links between rehearsal for anticipated encounters and actual communication behaviors in those encounters.

This section will discuss the results of the present study in terms of their relevance to imagined interaction theory, specifically imagined interaction as a type of cognitive planning device. This section will also discuss the results of the present study in terms of invention and style by examining the role that mental rehearsal plays in
speech production processes. Imagined Interaction Theory

Theoretically derived from Mead's (1934) notion of "internal conversation" the construct of imagined interaction as defined by Edwards et al. (1988) represents a type of mental activity in which one may consciously take the role of others and imagine how the other might respond to one's messages in a particular situation. The primary implication, in terms of communication, is that through imagined interaction one can imagine and test the consequences of possible alternatives prior to communication.

Rosenblatt and Meyer (1986) conceptualized imagined interactions as attempts to simulate real-life conversations with significant others. They also suggested that imagined interactions serve a number of functions, especially for emotionally distressed individuals. These functions include: (1) rehearsal for upcoming encounters; (2) talking through problems with one who is not physically present; (3) gaining insight into one's feelings; (4) reviewing interactions that have already taken place so that one can determine how other courses of action may have led to different consequences.

The focus of the present investigation has been the rehearsal function of imagined interaction. Specifically, the present study has attempted to explore some cognitive and behavioral aspects of the rehearsal function of imagined interaction.
interaction. Research by Edwards et al. (1988) sought to conceptualize imagined interactions as an element of social cognition. They suggested that progression within an imagined interactions is analogous to reading a cartoon in that the individual having an imagined interaction is afforded the luxury of moving back and forth over the panel, and even "rewriting" the strip if necessary. Furthermore, they suggested that imagined interactions may provide information that actors utilize during actual interactions.

One critical question that arises in the current investigation is: "Is there a link between planning for anticipated encounters and imagined interaction?" Evidence from the current investigation suggested that when subjects were instructed to plan for an upcoming encounter they were more likely to engage in imagined interaction activity than when they were given a distractor task. This indicated that when individuals are induced to plan, they are also induced to have imagined interactions.

Another question that must be addressed is: "Does mental rehearsal for an anticipated encounter have an effect on communication behaviors in that encounter?" Results of the current investigation also lend support to the notion that mental planning provides information that actors utilize during actual interactions. In the current investigation, subjects in the planning task had shorter speech onset latencies indicating that they were better
prepared to begin the conversation. Subject in the planning task also exhibited shorter silent pause duration during actual interaction. Finally, subjects in the planning task used a greater number and variety of compliance-gaining message strategies.

Results from the current study also indicated that subjects who reported a high use of the rehearsal function of imagined interaction, as opposed to those who reported a low use of the rehearsal function of imagined interaction, exhibited shorter silent pause duration during the actual interaction. Furthermore, subjects who reported a high use of the rehearsal function of imagined interaction used a greater number of compliance-gaining message strategies. Overall, these results suggest that rehearsal for anticipated encounters has an effect on the communication behaviors in that encounter.

One conclusion that may be drawn from the present investigation is that imagined interactions serve as a type of pre-communicative cognitive processing device that communicators use to plan for anticipated encounters. Furthermore, individuals differ in the degree to which they use imagined interactions as a device for preplanning. The next section will explore the links between preplanning for anticipated encounters and speech production processes.

Speech Production

One important aspect of communication behavior is
speech fluency. Perceptions of the speakers' fluency have been linked to effectiveness in job interview situations (Berger et al., 1989). In general, fluent speakers are often viewed as more credible and effective than their less fluent counterparts. Therefore, speech fluency can be operationalized as an element of style. The present investigation sought to examine the effects of rehearsal for anticipated encounters and fluency in that encounter.

Although attempts to develop models of invention have been limited in speech communication research, recent psycholinguistic theories of speech production provide a starting point for advancing a theory of invention that incorporates the role that rehearsal for anticipated encounters plays in message production and delivery processes.

Bock's (1982) model of sentence formulation provides a context for developing a theoretical explanation of how individuals use mental rehearsal to produce messages. Although Bock's (1982) model is primarily concerned with syntactic processing, certain aspects of her model provide a means for explaining how communicators use thoughts about communication to develop messages for anticipated encounters.

Bock (1982) suggested that cognitive processes that support message production can be divided into five arenas in which information is formulated. These five arenas
include: (1) a referential arena; (2) a semantic arena; (3) a phonological arena; (4) a phonetic arena; and (5) a motor assembly arena. The referential and semantic arenas are particularly relevant to the focus of the present investigation. The following section will provide an explanation of the referential and semantic processing in Bock's (1982) model.

Referential Processing. According to Bock (1982) the referential arena is primarily responsible for the translation of nonlinguistic representation of thought into a format that can be used by the linguistic system. The referential arena furnishes the ideational content of language. Bock (1982) suggested that within the referential arena "schematization" processes take place. In this process memories and knowledge are accessed and translated into plans. Plans for goal directed events include specified or inferred goal along with a sequence of subgoals that define the actions required to achieve the main goal.

Furthermore, within the referential arena communicators engage in "framing" which requires the selection of participants and their assignment to particular roles. The communicator has certain options in the selection of participants to include in a frame. Bock (1982) suggested that there are a number of characteristics, situations, ideas, and events that have implications for linguistic form and all of these are processed in the referential arena.
Processing in the referential arena also includes such things as speech act type, hierarchical relationships, and designation of topic or perspective. Bock (1982) describes information processing in this arena as "sets of propositions that structure and segment non-linguistic conceptual patterns" (p. 4).

**Semantic Arena.** Once the components and relationships have been defined within the referential arena, these propositions are then processed within the semantic arena. This arena is responsible for putting propositional relations and components into lexical concepts. According to Bock (1982) semantic processing involves "mapping the propositional components onto those linguistic categories that will serve to communicate the speaker's thoughts" (p. 4). She also suggested that the speed with which lexical selection takes place within the semantic arena is mediated by the match of the representation of the lexical concept. The next section attempts to link the results of the present investigation to Bock's (1982) model.

**Mental Rehearsal and Speech Production.**

The purpose of the present section is to develop a theoretical perspective on the role that rehearsal, particularly mentally rehearsal, plays in information processing related to speech production. The assertion made by this perspective is that mental rehearsal experienced via imagined interactions takes place primarily within the
referential arena of information processing. Imagined interactions serve as a type of cognitive planning device whereby actors activate memories and knowledge structures in order to schematize and frame ideational content.

First, it is important to note that subjects in the planning task were more likely to engage in imagined interaction activity than individuals in the distractor task. Therefore, it can be assumed that planning for anticipated encounters activates imagined interaction activity.

Imagined interactions are reported to be visual as well as verbal (Edwards, et al., 1988). This notion lends support to the assertion that imagined interaction is a part of information processing at the referential arena. Actors may activate memories that are both visual and verbal, frame events for anticipated encounters, and then begin to map this information onto linguistic categories that will serve to communicate the actors thoughts.

The question as to the degree to which individuals engaged in mental rehearsal also engage in semantic processing is an empirical one. The results from the present investigation present a somewhat unclear picture of the role that mental rehearsal plays in semantic processing. Results from the examination of filled pause behaviors do not lend support to the notion that mental rehearsal involves semantic processing. However, results from a
content evaluation of the subjects messages revealed that subjects who engaged in preplanning used a greater number and variety of message strategies. These results could be interpreted as an indication of greater lexical diversity, however more research is needed in this area. The degree to which mental rehearsal involves semantic processing is an important area for future research.

Since individuals report varying degrees of the use of the rehearsal function of imagined interaction, they may also vary in the degree to which they engage in semantic processing during imagined interaction activity. Planning for some individuals may involve getting a general idea of what they are going to say, while for others it might involve actually choosing specific words. This phenomena could also be influenced by the perceived importance of the anticipated encounter.

According to Brotherton (1979) silent pauses reflect difficulty in semantic planning while filled pauses are related to lexical choice. This assertion can be contrasted with the results of the present investigation. Individuals who were distracted from planning and individuals who reported a low individual tendency to engage in mental rehearsal had longer silent pause duration than individuals who were induced to plan and individuals who reported a high individual tendency to mentally rehearse. The groups showed no significant differences in reference to filled pauses.
The conclusion that may be drawn from these findings is that mental rehearsal, either induced or an individual tendency, is related to referential planning. Individuals who engaged in the planning task and who reported a high individual tendency to rehearse mentally also communicated a greater number and variety of compliance-gaining message strategies. Since they communicated more than the individuals in the other two groups they may have simply made more lexical choices, thus elevating their filled pausing behavior; more research is needed in this area. The following section will present suggestions for future research on planning, imagined interaction, and speech production.

Suggestions for Future Research

The results of the present investigation are only one step toward understanding the role that imagined interactions and planning play in communication behaviors. Future research should seek to extend this work by examining the lexical diversity and complexity of the content of the speech of individuals who have been induced to plan versus those that have been distracted from planning. While the subjects who engaged in planning used a much wider variety of message strategies than those who were distracted from planning, the question still remains as to how much actual semantic planning persons engage in while preplanning for anticipated encounters.
Future research should also work toward explicitly defining silent pauses due to planning. During conversation, when individuals do not have anything to say and they remain silent, they may not be engaging in planning. Research should work toward examining other behaviors related to "on-line" planning. This may give scholars insight into distinguishing between silent pauses due to planning and silent pauses that are not related to planning.

The role that "ah" and "non-ah" type pauses play in conversational production also needs further exploration. Individuals who are not engaged in talk do not exhibit these types of pausing behaviors. Future research should also attempt to explore the role that anxiety and decision-making play in these types of pausing behaviors.

Conclusions

According to Edwards (1989) imagined interactions serve as vehicles for self-expression. Research on imagined interaction has linked the concept to intrapersonal communication (Honeycutt, Zagacki, & Edwards, 1989). According to Honeycutt et al. (1989) intrapersonal communication represents communication with the self. Imagined interactions have also been presented as an internal process that involves the use of a representational language system, both visual and verbal, that focuses on specific features of communication and influences actual
behavior (Edwards, 1989).

Furthermore, imagined interactions occur with some level of conscious awareness that affords the self opportunities for control. Research has revealed that the self often dominates the imagined interaction by initiating dialogue, speaking more lines of dialogue, and by speaking more overall words (Edwards et al., 1988). According to Edwards et al. (1989) the self also selects the topics, partners, setting, timing, and even the words that the other will say in the interaction. These characteristics of imagined interaction are directly related to thought processes described in Bock's (1982) model that represent referential and semantic processing.

Edwards (1989) suggested that when persons are engaged in a particular situation or task, that situation or task often appear as a component of their imagined interaction. She found support for this notion in research on cancer patients (Gotcher & Edwards, 1989) and students who were participating in forensic competition (Gotcher & Honeycutt, 1989). The present investigation also supported this notion. When individuals were induced to plan for an anticipated encounter they reported engaging in more imagined interaction activity than individuals who were distracted from planning. Individuals who reported a high use of the rehearsal function of imagined interaction reported more imagined interaction activity than individuals
who reported a low use of rehearsal whether they were
induced to plan or distracted from planning.

Finally, the current investigation provided behavioral
support for the role that rehearsal plays in message
production processes. Individuals who engaged in rehearsal
communicated a greater number and variety of messages and
those message were communicated with fewer silent pauses
than the messages of individuals who did not engage in
rehearsal. The current investigation supports the notion
that imagined interactions function as one way that
communicators plan and rehearse for actual communication and
that mental rehearsal affects communication behavior.
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APPENDIX A

PLEASE INDICATE THE DEGREE TO WHICH YOU AGREE WITH THE FOLLOWING

1=STRONGLY AGREE
2=AGREE
3=UNDECIDED
4=DAGREE
5=STRONGLY DISAGREE

1. I planned for the role-playing activity after I received the instructions.
   Strongly Agree 1 2 3 4 5 Strongly Disagree

2. I had imagined interactions about the role playing activity after I received the instructions.
   Strongly Agree 1 2 3 4 5 Strongly Disagree

3. I did not have a chance to plan what I would say during the role-playing activity after I received the instructions.
   Strongly Agree 1 2 3 4 5 Strongly Disagree

4. I did not have imagined interactions about the role-playing activity after I received the instructions.
   Strongly Agree 1 2 3 4 5 Strongly Disagree

5. I was able to think about what I would say in the role-playing activity after I received the instructions.
   Strongly Agree 1 2 3 4 5 Strongly Disagree

6. I imagined what the other person would say in the role-playing activity after I received the instructions.
   Strongly Agree 1 2 3 4 5 Strongly Disagree

7. I planned what I would say during the role playing activity after I received the instructions.
   Strongly Agree 1 2 3 4 5 Strongly Disagree

120
8. Have you ever thought about talking to a friend about a drinking problem?
   Yes   No

9. Have you ever approached a friend about a drinking problem?
   Yes   No

10. In the space below, write down what you recall saying during the role playing activity.
APPENDIX B

Instructions:

Researchers at LSU are interested in investigating how students' interpersonal communication and problem solving skills operate in personal relationships. You are about to engage in an exercise designed to tap your communication and problem solving skills.

Suppose that you think that a close friend of yours has a serious drinking problem. You feel it is necessary to confront her/him, have her/him face up to the problem, and seek professional help.

In a few minutes you are going to engage in a role playing activity, with another student, in which you will be asked to pretend that the other person is this "friend." Your job is to try to convince him/her that he or she has a drinking problem and that they need to seek help.

For the next few minutes you should plan what you are going to say during the role playing activity. In the space provided below write down what you think you will say, and what you think the other person's responses might be.

If this activity makes you feel uncomfortable, you may withdraw at any time.
Instructions:

Researchers at LSU are interested in investigating how students' interpersonal communication and language skills operate in personal relationships. You are about to engage in an exercise designed to tap your communication and problem solving skills.

Suppose that you think that a close friend of yours has a serious drinking problem. You feel it is necessary to confront her/him, have her/him face up to the problem, and seek professional help.

In a few minutes you are going to engage in a role playing activity, with another student, in which you will be asked to pretend that the other person is this "friend." Your job is to try to convince him/her that he or she has a drinking problem and that they need to seek help.

Since we want to get an idea of your language skills, we would like for you to do the following language task. If this activity makes you feel uncomfortable, you may withdraw at any time.

Below is a list of 3 words, you should try to see how many words that you can make out of the letters in each word. For example, from the letter in "corporation" you have car, port, tap, etc. When you have finished the first word, move on to the second, then the third.

nevertheless
resurfaced
modifications
Survey of Imagined Interaction

Imagined interactions are "mental" interactions we have with others who are not physically present. People may have imagined conversations that occur in self-controlled daydreams or while the mind wanders. Sometimes they may occur after a real interaction has taken place.

Imagined interactions may be brief or long. They may be ambiguous or detailed. They may address a number of topics or examine one topic exclusively. The interactions may be one-sided where the person imagining the discussion does most of the talking, or they may be more interactive where both persons take an active part in the conversation.

In the following section there are several items asking you about your experiences with imagined interactions with others. Please read each item carefully and try to answer it as honestly as possible.

Yes! = very strong agreement  No! = very strong disagreement
Yes = strong agreement  No = strong disagreement
yes = agreement  no = disagreement
? = neither agreement or disagreement

1. I have imagined interactions all the time.

No!  No  no  ?  yes  Yes  Yes!

2. I use imagined interaction in order to prepare for important conversations.

No!  No  no  ?  yes  Yes  Yes!

3. I often have imagined interactions before interacting with someone of importance.
4. Most of my imagined interactions are with different people.

5. I often have imagined interactions after interacting with someone of importance.

6. When I have imagined interactions, they tend to be detailed and well-developed.

7. I have recurrent imagined interactions with the same individual.

8. In my real conversations, I am very different than in my imagined ones.

9. After important meetings, I frequently imagine them.

10. Most of my imagined interactions are with the same person.

11. I usually say in real life what I imagined I would say.

12. I use imagined interactions to practice what I will say in upcoming encounters.

13. When I have imagined interactions, the other person talks a lot.

14. I frequently have imagined interactions.
15. I do not use imagined interactions to plan conversations in advance.

No! No no ? yes Yes Yes!

16. When I have a real conversation that I have imagined, the actual conversation is very different from what I imagined.

No! No no ? yes Yes Yes!

17. After I meet someone important, I imagine my conversation with them.

No! No no ? yes Yes Yes!

18. I rarely imagine myself interacting with someone else.

No! No no ? yes Yes Yes!

19. In my real conversations, other people are very different than in my imagined ones.

No! No no ? yes Yes Yes!

20. My imagined interactions are quite similar to the real conversations which follow them.

No! No no ? yes Yes Yes!

21. I rarely use imagined interactions to prepare for upcoming encounters.

No! No no ? yes Yes Yes!

22. It is hard recalling the details of imagined interactions.

No! No no ? yes Yes Yes!

23. My imagined interactions are very specific.

No! No no ? yes Yes Yes!

24. I talk a lot in my imagined interactions.

No! No no ? yes Yes Yes!
25. The other person has a lot to say in my imagined interactions.
   No! No no ? yes Yes Yes!

26. The other person dominates the conversation in my imagined interactions.
   No! No no ? yes Yes Yes!

27. Before important meetings, I frequently imagine them.
   No! No no ? yes Yes Yes!

28. My imagined interactions do not enable me to rehearse for upcoming conversations.
   No! No no ? yes Yes Yes!

29. I have imagined interactions with many different people.
   No! No no ? yes Yes Yes!

30. I dominate the conversation in my imagined interactions.
   No! No no ? yes Yes Yes!

31. In my imagined interactions, I can "hear" the other person.
   No! No no ? yes Yes Yes!

32. My imagined interactions enable me to prepare for conversations in advance.
   No! No no ? yes Yes Yes!

33. Before I meet someone important, I imagine a conversation with them.
   No! No no ? yes Yes Yes!

34. More often than not, what I actually say to a person in a real conversation is different from what I imagined I would say.
   No! No no ? yes Yes Yes!

35. More often than not, what the other actually says in a real conversation is different from what I imagined he/she would say.
36. When I have an imagined interaction I often have only a vague idea of what the other says.

No! No no? yes Yes Yes!

37. My imagined interactions tend to be on a lot of different topics.

No! No no? yes Yes Yes!

38. During my imagined interactions I tend to see and concentrate attention on:

Myself ___:___:___:___:___:___:___ Other person
Both

39. My imagined interactions do not enable me to rehearse for anticipated encounters.

No! No no? yes Yes Yes!

40. My imagined interactions help me to understand my partner better.

No! No no? yes Yes Yes!

41. My imagined interactions help me to understand myself better.

No! No no? yes Yes Yes!

42. My imagined interactions help me in clarifying my thoughts and feelings with my interaction partner.

No! No no? yes Yes Yes!

43. My imagined interactions help me to actually talk about feelings or problems later with the interaction partner.

No! No no? yes Yes Yes!

44. My imagined interactions help me plan what I am going to say for an anticipated encounter.

No! No no? yes Yes Yes!

45. My imagined interactions help me relieve tension and stress.
46. I have imagined interactions in order to practice what I am actually going to say to another person.

47. My imagined interactions help me to reduce uncertainty about the other's actions and behaviors.

48. My imagined interactions enable me to rehearse the words I will say in an upcoming encounter.
Section 2

The following ten statements concern your communication with other people. Please indicate the degree to which each statement applies to you by circling whether you:

1 - Strongly agree
2 - Agree
3 - Are Undecided
4 - Disagree
5 - Strongly disagree

1. I look forward to expressing myself at meetings.
   
2. I am afraid to express myself in a group
   
3. I look forward to the opportunity to speak in public
   
4. Although I talk fluently with friends, I am at a loss for words on the platform.
   
5. I always avoid speaking in public if possible.
   
6. I feel that I am more fluent when talking to people than most other people.
   
7. I like to get involved in group discussions.
   
8. I do not like to use my body and voice expressively.
   
9. I am afraid to speak up in conversations.
   
10. I would enjoy presenting a speech on a local televisions show.
APPENDIX D

TO BE RETAINED BY THE INVESTIGATOR:

EXPERIMENT SIGN-UP FORM

My signature, on this sheet, by which I volunteer to participate in the experiment on interpersonal communication and language competence.

conducted by: Terre Allen, Department of Speech Communication

Experimenter

indicates that I understand that all subjects in the project are volunteers, that I can withdraw at any time from the experiment, that I have been or will be informed as to the nature of the experiment, that the data I provide will be anonymous and my identity will not be revealed without my permission, and that my performance in this experiment may be used for additional approved projects. Finally, I shall be given an opportunity to ask questions prior to the start of the experiment and after my participation is complete.

Subject's Signature
APPENDIX E

DIRECT REQUEST - the actor asks the target to comply with a request in a direct manner. These messages do not contain any manipulation or motivation.

"You have a drinking problem and you need to get some help"

SUPPORTING EVIDENCE - the actor utilizes one or more reasons why the target should comply - evidence, data, logic, appeals to rules, etc.

"You have been going out a lot and your grades are dropping"

EXCHANGE - The actor attempts to gain the compliance of the target by offering to exchange things of value (services, money, favors, etc.)

"If you go to an AA meeting I'll go with you"

DISTRIBUTIVE - The actor attempts to use coercive influence of attempts to make the target feel guilty, sad or selfish for not complying.

"You are hurting your family and friends, and you could end up killing someone if you don't get help"
FACE MAINTENANCE - The actor uses strategies such as ingratiating (flattery, favors, attractive self-presentation)

"You are such a nice person. You have so much going for you"

OTHER BENEFIT - Tactics similar to supporting evidence, but listed cases where the reasons benefit the target only.

"You'll feel better, you'll be healthy, your life will seem totally different if you get control of this problem"

REFERENT INFLUENCE - References to how alike and how much the target and actor can identify with one another.

"We have always been so close" "You know how much our friendship means to me."

EMPATHIC UNDERSTANDING - Appeals to the target's love and affection for the actor are used.

"Isn't our friendship important to you?" "If it is, then you will seek treatment"

"You know that I am your friend, and if there is anything that you want to talk with me about I am here for you."

INDIRECT TACTICS - The actor requests compliance by initiating a conversation from which the target will infer or assume the actor's real intent.
"I saw you at Sport's last night." "You were pretty wasted."

"I heard that you have been out every night this week."

PROBING QUESTION — a type of indirect strategy in which the actor asks the target a series of questions about his or her behavior.

"Have you been going out a lot lately?"

"Do you drink much when you go out?"

"Do you drive yourself home?"

"Do you remember what you did when you were drinking?"
VITA

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Title of Dissertation: The Effects of Imagined Interaction and Planning on Speech Fluency and Message Strategy Selection

Approved:

Signed: Ronnie Edwards

Major Professor and Chairman

Signed: Dean of the Graduate School

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Signed: Andrew King

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Signed: Larry Campbell

Date of Examination:

July 17, 1990