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The influence of imagined interactions on verbal fluency

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THE INFLUENCE OF IMAGINED INTERACTIONS ON VERBAL FLUENCY

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ABSTRACT

Imagined interactions (IIs) are a type of social cognition and mental imagery whereby actors imagine an interaction with others for the purposes of planning. Within actual encounters, verbal fluency is a characteristic that contributes to the speaker's credibility. The planning that takes place through imagined dialogues can help a speaker overcome disfluency found in speech. This study shows that improvements in speaking style are also dependent upon the trait of communication apprehension that an individual experiences. Visualization can decrease apprehension levels, thus producing higher verbal fluency. Results from this study indicate planning's influence in the reduction of silent pauses but not vocalized pauses. Finally, the complexity of one's imagined dialogue has been found to play a role in an increase of verbal fluency.

CHAPTER 1: INTRODUCTION & LITERATURE REVIEW

"Um…today, we will…uh…be discussing the importance of…preparation before any…business meetings we might have…uh…in the future."

The communication that takes place within the organization has a significant impact on the daily operations of business. Communicative styles adopted by managers and employees can influence behavior, job satisfaction, and proficiency in the work place. Research in organizational communication has investigated the effects of these factors within corporate culture (Falcione, McCroskey & Daly, 1977; Infante & Gorden, 1985; Richmond & McCroskey 2000). An individual's demonstration of verbal fluency in particular has also been found to evoke certain impressions in the minds of listeners (Allen, 1990; Greene, 1984; Lay & Burron, 1968; Stagner, 1936). The effects of verbal fluency play a significant role in the development of one's credibility (Goldman-Eisler, 1968; Miller & Hewgill 1964). The importance of a fluent style in communication has brought this researcher to examine strategies for making speech flow more smoothly. Due to a positive relationship found between planning and verbal fluency (Berger, 1997), this review will focus specifically on the intrapersonal exercise of imagined interactions (IIs) used as planning. An individual's level of communication apprehension (CA) can play a factor in the amount of disfluencies. This analysis will also discuss how visualizing potential interactions can remediate CA, thereby reducing disfluencies.

A message does not solely consist of words. The manner in which the message is delivered plays a factor in its effectiveness and acceptance (Lay & Burron, 1968; Stagner, 1936). Based on delivery style, message recipients formulate opinions regarding the message sender's competence, social attractiveness, and trustworthiness (Greene, 1984).

When a situation calls for credible and effective communication, the message relies heavily on an appropriate style of delivery. Verbal fluency, in particular, has been found to play a significant role in shaping a receiver's perceptions of the speaker (Goldman-Eisler, 1968; Miller & Hewgill 1964). Research on the effects of verbal fluency has found that non-hesitant speakers are perceived as sincere, intelligent, good-natured, reliable, and warm. When it is absolutely necessary for recipients to hold positive impressions of a speaker, the cognitive process of planning ensures the minimization of hesitations (Berger, 1997).

The process of improving one's verbal fluency begins before any words are vocalized. By taking the time to prepare and plan, a person can ensure that the words will be delivered in a fluent manner. "Humans are uniquely endowed with the ability to engage in conscious forethought; they may choose to use or not to use this capability in a given set of circumstances" (Berger, 1997, p. 24). Planning is a faculty that distinguishes the human race from other species. Through this cognitive exercise, strategies can be developed and preparation can be made to ensure effective action. Those who participate in some form of planning may exercise greater control and avoid surprise when their actions result in unexpected consequences.

Plans are mental strategies people use to achieve personal goals (Berger, Karol, & Jordan, 1989). In order to formulate the strategies implemented in a plan, the planner must engage in either a verbal or cognitive expression of ideas prior to taking action. Through this type of communication, these plans are realized and made more specific by the planner. Berger states that, "Without communication, plans to achieve many goals would remain locked in the mind" (Berger, 1997, p. 15). At this point, the predetermined

goals of the encounter play a significant role in the formulation of a plan. People planning for interactions need to articulate their goals in order to ensure that the strategy is appropriate for that particular situation. When one forgoes this step in the planning process, the objective becomes muddled which in turn diminishes the potency of the plan.

Within this process, subgoals need to be satisfied in order for the primary goal to be obtained. "It is generally conceded that goals are arranged in hierarchies in which subgoals are nested under superordinate goals" (Berger, 1997, p. 21). These subgoals are the details that need to be addressed before the ultimate goal can be achieved. The hierarchy discussed by Berger and colleagues (1989), allows for an order to be followed in plan implementation. The author goes on to explain that the plan cannot depend solely on the desire that has sparked it; rather there needs to be some cognitive thought and preparation in order for it to manifest strategically. Berger goes on to say that, "…plans are bundles of intentions or intentions 'writ large' that are arranged hierarchically" (Berger, 1997, p. 9).

The purpose of planning is not necessarily to predict the future, but rather to cope with real world outcomes. The flexibility resulting from planning allows for this proper preparation to take place (Berger et al., 1989). Plans differ from writing out scripts; they allow for a more flexible path. Room is left for different paths to be taken in obtaining one's goals. A person cannot predict future encounters precisely. Factors not addressed during the initial planning process are always present, and there are also random occurrences that hinder the original plan. These factors can be minimized through the act of forming contingencies. Berger states that, "as a part of their detailed plans, individuals may not only lay out a specific course of action, they may also anticipate events that

might interfere with the successful completion of their plan, and thus explicitly plan for these contingencies" (Berger, 1997, p. 28). Although the contingency itself might not work out as planned, the individual will be more prepared for mishaps because they have assumed a deviation from the plan and have prepared for it.

The complexity found within the plan is another issue needing attention. Berger explains that, "Increases in strategic domain knowledge and specific domain knowledge tend to produce increases in the complexity of plans within the domain" (Berger, 1997, p. 31). When an individual knows detailed information concerning the expected situation, the chances are higher that the plan will turn out successful. For example, an individual who has a detailed account of political issues will be more successful in persuading undecided voters. The person with a complex plan consisting of numerous subplans will likely be able to deal with and adjust to unexpected occurrences much more easily.

Some may argue that planning is unnecessary. These individuals prefer to be spontaneous and contend that they are proficient speakers without planning their strategies. For these individuals, fluency is forfeited. "…these conceptual representations of actions must be available and accessible when they are needed. If they are not, action fluidity necessarily will decrease" (Berger, 1997, p. 41). By sifting through plans and contingencies, one is able to act accordingly and quickly to the surprising changes found in events. The plan allows for there to be some basis with which an individual may perform confidently. Imagined interactions are a more specific type of planning, which allow for fluency to increase and the factor of surprise to diminish.

The intrapersonal process of imagined interactions (IIs) functions as planning in order for the individual to be more prepared for actual interactions. IIs allow for the individual to be prepared for an interaction itself as well as random occurrences that might not have been expected. Berger describes his notion of planning (Berger, 1997), which is very similar to that of imagined interaction. These two concepts are similar in that they both address preparation for events and formation of contingencies. The following section presents evidence aimed at investigating IIs as a form of preplanning for an anticipated encounter.

Communicators imagine conversations with significant others before actual communicative episodes. These imagined dialogues serve important interpersonal and cognitive functions. Honeycutt, Edwards, and Zagacki (1989-90) have defined imagined interactions (IIs) as "…part of the social cognition process whereby actors imagine themselves in interaction with others" (p. 14). IIs tend to occur with significant others as opposed to total strangers. Being very similar to actual conversations, IIs generate a setting where a person may speak one's mind in a relatively safe environment.

Honeycutt, Zagacki, and Edwards (1989) describe imagined dialogues as a panel in a cartoon strip in which visual images are accompanied by verbal captions. The metaphor of a cartoon strip is important in fully understanding the concept of IIs. A collection of these scenes forms the dialogue and storyline for each II one experiences. The II participant figured as the cartoon reader in this analogy has the luxury of moving back and forth over the panel, and even rewriting the dialogue when they feel it necessary (Edwards, Honeycutt & Zagacki, 1988; Honeycutt 1990; Honeycutt, Zagacki & Edwards, 1992). The "special" power an individual possesses when reading these "cartoon strips"

is an advantage the metaphor dramatizes. According to Honeycutt and colleagues (1992), those engaging in IIs have powers of conversational control like mind reading, time-travel and timely pauses within conversations. Only in these imagined dialogues does one have this type of control, and the control ultimately allows the individual to develop stronger communication strategies.

Following the metaphor of a cartoon strip, the II may use different modes of imagery: visual, verbal, or a combination of both modes of imagery. Just as a cartoon reader can see the characters visually, he or she can also focus in on the words used by each of the characters. The reader or II participant can use both visual and verbal imagery to analyze the imagined encounter. According to Zagacki, Edwards and Honeycutt (1992) "…mental images accompany imagined interactions as individuals use these interactions to think about and to visualize prospective or retroactive communicative encounters" (pp. 58-59).

Visual imagery is in the form of mental pictures or images. Unlike those using primarily verbal imagery, those attuned to a more visual disposition are able to imagine the scene of the encounter and are well aware of the surroundings in which the interaction takes place (Gotcher & Honeycutt, 1989). Honeycutt and Gotcher (1990) propose that it is necessary for debaters on forensic teams to imagine visually the communicative environment before an event. In doing so, one can be prepared for the acoustics of the room, audience size, position of the critic, and room furnishing. Visual imagery allows the individual to see contextual environments that might help in the analysis or preparation of conversations.

Verbal imagery is primarily used for more understanding and rehearsal of communication (Zagacki et al., 1992). In this mode of imagery, the self takes a greater role in the II, and the content of the dialogue is considered more important due to the nature of the encounter. Because managing conflict is a significant reason to focus on the dialogue, Zagacki et al. (1992) propose that verbally based IIs are less pleasant.

The final mode is a mixture of both verbal and visual imagery. Gotcher and Honeycutt (1989) found that using both visual and verbal imagery in IIs enable forensic participants to rehearse messages mentally and prepare for possible exigencies. The combination of modes allows the individual to prepare for verbal as well as contextual aspects of the anticipated encounter. Emphasizing the use of visual modes, pleasant IIs have been associated with mixed imagery (Honeycutt, 1990). Imagined interactions with mixed imagery have been found to occur less frequently and compared to verbal imagery these IIs are less similar to actual communication events (Zagacki et al., 1992).

Having distinct characteristics, some of the functions of IIs include relational maintenance, conflict management, rehearsal, developing self-understanding, catharsis, and compensation. The characteristics include frequency, proactivity, retroactivity, variety, discrepancy, self-dominance, valence, and specificity. To understand the effects of planning on verbal fluency, this analysis will address the II characteristics of proactivity and specificity, while also analyzing the function of message rehearsal. IIs occurring before actual interactions (proactive IIs) are more likely to occur than those that take place after the real-life conversation (Edwards et al., 1988). Proactive IIs are used to test and imagine the consequences of alternative messages for actual conversations individuals intend to have, would like to have, or are anxious about having

(Honeycutt et al., 1989-90). IIs can help predict future events by taking the time to practice messages and predicting potential responses (Honeycutt et al., 1989). Essentially, the II allows the individual to place himself or herself in the position of the potential respondent and predict the consequences of communication strategies. The result of the II is a stronger sense of conversational sensitivity as well as a development of communication competence (Honeycutt et al., 1992-93).

Allen and Honeycutt (1997) found that proactive IIs resulted in fewer nonverbal expressions of anxiety. Exhibiting fewer silent pauses and shorter speech on-set latencies, those reporting high use of II activity for rehearsal also used fewer object adaptors when speaking. Research has indicated that the proactive characteristic of IIs can significantly increase readiness to communicate as well as decreasing the apprehension that may arise in communication (Allen, 1990). Rehearsal of communication increases the confidence of the person participating in IIs (Gotcher & Honeycutt, 1989).

The characteristic of specificity refers to the level of detail and distinction contained within the images of IIs. The II can contain descriptive contexts and distinct wording, but others experience IIs that take place in obscure scenarios and contain limited wording. The latter is found when individuals report having IIs, but are unable to provide details about them (Honeycutt, 1990). Other research has indicated that specificity found in IIs positively predicts several dimensions of conversational sensitivity. The specificity aids the individual in detecting meanings in other's messages, develops conversational memory and helps to produce conversational alternatives (Honeycutt et al., 1992).

"During imagined interactions, individuals actually work through representations of communication events and prepare responses based on those contingencies" (Honeycutt & Gotcher, 1990, p.140). During the process of proactive IIs, the individual has the unique ability to increase the chances of success before actually having to participate in communication. Some situations call for an individual to make a positional stand, or to give their insight on certain matters. Caught without preparation, the individual can easily say something unintended or communicate a message that did not come across clearly. Rosenblatt and Meyer (1986) state that a function of IIs is to aid the individual with making decisions in the midst of complex and disorganized thoughts. The II allows the self to compose a position through logical organization.

Gotcher and Honeycutt (1989) propose that rehearsing messages in IIs releases tension as the imaginer reduces uncertainty for the anticipated interaction. Having a firm grasp of what will be said, the II participant can engage in conversation smoothly without any hindrances. Prior to the conversation, the imaginer has already decided what will be said and is adequately confident of its success. Going into most conversations in this manner results in a stronger sense of conversational sensitivity as well as a development of communication competence (Honeycutt et al., 1992-93). The preparation resulting from IIs develops verbal fluency. The different functions and characteristics of IIs allow a speaker to prepare before the encounter, analyze the words of the dialogue at different levels of specificity, and practice them once through in order to reduce hesitation. A body of literature exists to suggest a positive relationship between preplanning and speech fluency. The next section provides a review of hesitation phenomena as they relate to cognitive planning.

The fluency of one's vocal expression contributes to that individual's credibility, trustworthiness and dynamism (Greene, 1984; Lay & Burron, 1968; Stagner, 1936). Even Moses from the Bible speaks of his lack of verbal fluency and his fear that it would discredit him as a leader (Exodus 4:1-10). Research on this subject has found similar results, and concurs with Moses' fears. Some individuals seem to have the ability to present information in a free flowing manner while others do not. The skill of fluent verbalization demands further investigation.

Many metaphors have been formulated to describe speech as water in motion. Adjectives such as gush, spout, stream and torrents of speech have been used to describe the continuous flow of verbalization. Goldman-Eisler (1968) refutes these prior notions with the explanation that speech is in fact fragmented and broken rather than flowing and smooth. At its most fluent, two-thirds of spoken language comes in chunks of less than six words. Therefore, vocalization and silence are two distinct ways in which speech consumes time. The variations of these two components in speech are what contribute to the perception of fluency and latency.

This investigation will deal with two categories of disfluency found in speech: vocalized and silent pauses. Miller and Hewgill (1964) define a vocalized pause as an utterance of the "uh" sound between two words within a sentence. Variations of this sound such as "um" and "ur" are also included within the definition. Silent pauses refer to breaks of vocalization in the middle of sentences (Miller & Hewgill, 1964). Breaks in conversation known as switch pauses are different from silent pauses. Not being classified as a disfluency, switch pauses are the times in a dialogue in which one person ends a sentence and another person begins his or her own (Berger et al., 1989).

Regarding these silent pauses, Goldman-Eisler (1968) has found that the hesitation demonstrates that the speaker is in the process of thinking or planning what he/she would like to say next. The total time of disfluencies during the delivery of a message, then, represents the amount of effort put into the plan. Greene (1984) has determined that the effects of cognitive load will lead to longer speech on-set latencies. Within this particular investigation, it is proposed that the duration of total disfluencies should reflect the level of this cognitive load throughout the speech. Communication scholars have sought to address the question of how these breaks in speech flow affect how the speaker is perceived as well as the credibility of what the speaker has to say.

The impressions derived from a speaker's style have been a common understanding since the beginning of speech itself. Through communication research, scholars have been able to solidify the influence of voice fluency with behavioral support. Voice qualities as well as other extra-linguistic aspects of speech have been consistently found to influence judgments about the personality of the speaker (Lay & Burron, 1968; Stagner, 1936). When evaluating a speaker, the listeners, according to Greene (1984), relate hesitations in speech to perceptions of competence, social attractiveness, and trustworthiness. Regardless of the words spoken during the interaction, these studies have indicated that voice fluency alone plays a significant factor in this judgment.

Lay and Burron (1968) found that judges asked to rate their impressions of both hesitant and fluent speakers rated the non-hesitant speaker more favorably with desirable characteristics such as being sincere, intelligent, good-natured, reliable and warm. The same judges characterized the hesitant speech as being averse to the listener. Verbal disfluencies also contribute to the perceptions of the speaker's competence. Miller and

Hewgill (1964) found that people rated a speaker as significantly more competent when the speech contained zero vocalized pauses or repetitions. This study went further to find that the mean competence ratings were lower for the repetition conditions than for the vocalized pause condition. These results indicate that repetition or false starts at the beginning of sentences contributed more to lower perceptions of competence by the listener. The pioneering work of Stagner (1936) found that nervousness was another perception resulting from disfluencies. Through self-reports and opinion seeking surveys, his research revealed a relationship between the flow of the speech and nervousness. Anxiety was attributed to a lack of verbal fluency and immediately the speakers were labeled as having a shortage of confidence when speaking.

Various hesitations found in speech can be attributed to cognitive variables (Allen, 1990; Goldman-Eisler, 1968; Lay & Burron, 1968). In other words, the cognitive process that takes place before and during the activity of speech plays a factor in the formation of speech itself. An interesting question is then proposed. While it has been well established that there are negative impressions associated with disfluent speech, can an individual overcome this blemish in credibility through cognitive development? Goldman-Eisler (1968) conducted a study in which half the subjects were asked to describe the content of a cartoon whereas the other half were asked to interpret its meaning. The differences in the amount of pausing led Goldman-Eisler to conclude that the "pause length per word increases considerably as we pass from describing concrete events to interpreting their general meaning" (p. 58). Goldman-Eisler's conclusion supports the understanding that hesitations found within speech are moments where the individual is contemplating the subject or trying to plan out what he or she will say. The

difficulties found in immediately verbalizing abstract thoughts are what hinder the speaker from being fluent. Eliminating spontaneity from this equation should dissolve a large amount of the hesitation.

According to Goldman-Eisler (1968), hesitation comes from uncertainty. Uncertainty may derive from a lack of situational knowledge, the complexity of the situation itself, or the inability to handle the spontaneous encounter. The detail found within the imagined dialogue contributes to the success of the plans devised. Up to a certain point, the complexity of the plan fosters verbal fluency (Berger et al., 1989). When the individual is aware of the specific situational knowledge, obstacles can be addressed and dealt with through the formulation of contingencies. Without this attention to the situational detail, factors such as the physical setting, characteristics of the dialogue partner, as well as prior interactions, can be overlooked in the planning process. These details are imperative to the success of the one's goals. Uncertainty then can be overcome through the specificity found within the imagined dialogue. Even when obstacles and details are not addressed, the foundation formed by planning increases the participant's ability to regroup and administer variations of contingencies (Berger, 1997).

The expression, "Practice makes perfect" applies when trying to increase one's verbal fluency. MacKay (1982) describes speech production as, "…the most extensively practiced, proficient, and flexible of human skills" (p. 485). When there is attention placed on speech, an individual has the ability to perfect its delivery in whatever manner appropriate. The flexibility of speech allows for variations in a wide range of fluency. Berger et al. (1989) describe fluency as being a direct result of mindfulness. In other words, when individuals are given time to think before they speak, arguments and

strategies can be formulated, which result in a more fluent style. Goldman-Eisler (1968) conducted a study in which participants were asked to recite a written speech a number of times to analyze the increase in fluency. Between the first practice recitation and the sixth, hesitation decreased considerably. The amount of practice or planning used prior to speech directly correlated with the fluency found within the latter recitations (Allen, 1990; Greene, 1984). O'Hair, McLaughlin and Cody (1981) conducted a different study in which liars who were given time to prepare engaged in shorter latencies when verbalizing the lies than the liars who were not given any time to prepare. Speech, through the use of practice and preparation, moves closer to an ideal perfection, and repetition of verbal material results in a more fluent performance (Greene, 1984).

As mentioned previously, the complexity of one's plan relates directly with the fluency found in the production of speech (Berger, 1997). Further research on fluency has indicated that there is a point in planning in which the complexity as well as the number of plans may actually hinder fluency (Berger, 1997). Berger et al. (1989) explain that as a plan becomes increasingly complex, the uncertainty that results from a number of contingencies actually increases the hesitation found in disfluent speech. The curvilinear relationship between plan complexity and disfluencies reveals that plans must remain only moderately complex in order to produce verbal fluency. In a study to test this phenomenon, investigators allowed subjects to plan before having to speak (Berger et al., 1989). Subjects within the experimental group were given the same amount of preparation time, but were also asked a series of questions regarding what they were about to say. Those in the plan-question condition were found to be significantly less fluent than those in the plan-only condition.

An individual's state of nervousness has also been found to play a factor in the fluency of one's speech. Stagner (1936) found that individuals who reported that they were nervous produced higher disfluencies in recited speech. With state anxiety being a factor in fluency, one may assume that different levels of trait anxiety may have just as much influence. If the effects of one's verbal fluency can drastically impair or enhance one's credibility, it is important to keep in mind the innate anxiety levels individuals might have when speaking. Since these levels differ significantly from person to person, the initial amount of trait anxiety plays a factor when trying to improve one's skills.

An active hindrance to public speech, or to any type of communication for that matter, is the concept of communication apprehension (CA). CA is defined as an individual's "…anxiety syndrome associated with either real or anticipated communication with another person or persons" (McCroskey, 1977a, p. 28). Oral communication apprehension refers to a broad-based apprehension about communication in situations ranging from talking to a single individual to giving a speech in front of a nationally televised audience.

The tangible obstacles that prohibit effective communication from taking place must be analyzed when evaluating speech behavior. An intense analysis of communication's strongest adversary, CA, has developed naturally in order to meet the need of mastering and refining this skill. Throughout the past century, and especially in the past four decades, scholars have analyzed and experimented on the effects and causes of this phenomenon. Considering the fact that CA has been found to affect at least 20% of the population (McCroskey, 1977a; 1977b; 1976; McCroskey & Richmond, 1979), there has been strong support for more information regarding the subject. Observing the

impact CA has had on individuals, researchers have collectively been able to monitor its potent influences.

The concept of CA can be linked to the construct of "reticence," which signifies a much broader category. Reticence is, "…the most global of the constructs in that it refers to a trait of an individual which results in that individual characteristically remaining silent rather than participating in communication" (McCroskey, 1977b, p. 79). CA is actually considered to be a sub-construct of reticence. While the predisposition of the reticent individual is caused by a number of different reasons, the characterization of a person with high CA is limited to mean those who avoid communication strictly as a result of fear and/or anxiety (McCroskey, 1977b).

The idea of CA is not necessarily that highly apprehensive people will not communicate. In fact, there are instances in which a person with high CA might communicate more than those with low CA, but the difference is that the highly apprehensive person feels more obtrusive levels of anxiety in communicating and anticipating communication than those who have less CA (McCroskey, 1977b). In other situations, individuals with high CA will choose to speak less frequently because the cost of communicating (i.e. anxiety, uncomfortable feelings, fear of failure) is much higher than the detrimental results of not communicating.

Recent development of a communibiological paradigm has shifted the study of CA. Once thought to be primarily a learned behavior through the social learning process, growing evidence suggests that an individual's predisposition to feel CA is linked to biologically based personality factors (Beatty & McCroskey, 1998). Although one may adopt the view that temperament is determined by what one inherits, it is a radical

oversimplification of the issue to ignore the benefits and results of treatment on CA. The communibiological paradigm does not portray traits as being exclusively genetic; rather some traits are attributed to learned behavior (Kelly & Keaten, 2000). Therefore, treatment should not be completely neglected and can have some effect on participants.

According to McCroskey, high CA's are seen as less composed, less task-attractive, less competent, and less socially attractive (McCroskey, 1977a; McCroskey, 1977b; McCroskey, 1976). Interaction was also perceived to be less relevant when high CA's did in fact communicate (McCroskey, 1976). After researching the expectations teachers have for low and high CA, studies have found that, "…teachers expect low CA students, as opposed to highs, to do better in all academic subjects, to have a much more promising future in education, and to have much better relationships with their peers" (McCroskey, 1977a, p.31). Because of their disposition, children who are high in CA are expected to perform less competently than those who are low in CA. In some instances a teacher's expectations become self-fulfilling prophecies. If a teacher expects less from a student, the tendency is that the student will offer less (McCroskey, 1977a). The research clearly shows how CA can pose a serious problem to the education of these individuals.

Detrimental effects of people's high CA condition do not stop once they have graduated from formal schooling. Stifled progress continues into the stages of occupation and career. Whether it is a conscious decision or not, throughout their lives, high CA's are regularly engaged in strategies to avoid situations in which they perceive that they will have to communicate. Based on this observation, those who have high CA avoid applying for job positions where communication is expected of them. According to McCroskey, however, positions requiring higher communication are also the ones that

carry higher status in society and provide greater economic return (McCroskey, 1979). The result is that those with higher CA are forced, by their preference, into those positions that do not require communication and the jobs that are of lesser quality and reward.

The hiring procedures for positions are biased against those with higher CA. Compared to the applicant with lower CA, the perception of those with higher CA is considerably lower (McCroskey, 1979). The high CA applicant is perceived to be less task and socially attractive, is projected to be less satisfied in their job, to have poorer relationships with peers, supervisors, and subordinates at work, to be less productive, and to have less likelihood for advancement in the organization (McCroskey, 1979; Daly & McCroskey 1975). If the application includes an interview, these biases and presumptions are made of the applicant who is not as lively within the interaction. A disposition to be apprehensive about communication restricts those in our society from achieving success on their own merit and performance.

Those who tend to be apprehensive about communication are clearly mistreated (Daly & McCroskey 1975; McCroskey, 1977a; McCroskey, 1977b; McCroskey, 1976; McCroskey, 1979). Society has labeled these individuals as having some sort of handicap and, at times, these individuals are not given the chance that they deserve. No one is to be blamed for favoring a low CA over a high CA; rather it is the responsibility of communication scholars to find resolutions for these individuals suffering from high CA. Answers can only be found by accurately measuring CA and developing treatments for CA.

A universal characteristic of CA is an internal discomfort associated with communication (McCroskey & Beatty, 1998). The feelings that arise from CA are completely personal and individual to each person experiencing them. Therefore, there are no standard physiological signs of CA. The levels of apprehension cannot be precisely detected unless expressed by the individuals themselves. Self-reports then have become the preference over physiological and observer measurements in measuring CA (McCroskey, 1970; McCroskey & Beatty, 1998). Measurement is a key factor in developing methods of treatment for CA. To assess the effectiveness of a particular method, it is imperative that the measure accurately depicts the change occurring in the subject going through therapy (Allen, 1989). As of now, the best known scale for measuring CA is the self-report, Likert scale of PRCA developed by McCroskey. This scale has consistently yielded reliability estimates above .90 and there have been comprehensive arguments in support of its validity as a measure of oral trait CA (McCroskey, 1978).

With a scale accurate enough to measure change in CA levels, scholars can begin to establish treatments for this condition. By rating CA levels before and after speculative treatments, researchers can develop and sharpen these methods in remediating CA. Since the unfavorable results of being highly CA have been discovered, treatments for this condition have been tested and tried. One of these treatments includes visualization (VIS). The following section will describe the different aspects of this particular treatment.

VIS allows an individual to go through a practice run of the anticipated encounter so that he/she may be more prepared and confident when the actual encounter occurs.

Athletes can discuss the thoughts that go through their minds before a competition gets underway. During this time of mental preparation the athlete will likely imagine the physical movement necessary to accomplish their goal. "Visualization involves asking speakers to imagine themselves making an effective presentation" (Ayres & Hopf, 1985, p. 318). This treatment parallels the intrapersonal exercise of IIs. The procedures for both concepts are essentially the same. The actors are asked to formulate mental images of themselves enacting the anticipated behavior. Based on the desired level of performance, the person may change, enhance, or subtract particular behaviors that may or may not help with the situation. As the most recent treatment for CA in the communication field, the method of VIS has been found to be quite successful. The idea is that if an apprehensive speaker can imagine the movements and words necessary to give an effective speech, his/her confidence level will increase making the actual encounter more bearable. The VIS treatment increases willingness to communicate, and increases perceptions that individuals are competent communicators (Ayres, Heuett, & Sonandre, 1998).

VIS asks individuals to imagine a day on which they are to deliver a speech. Establishing the comfort of the participant, the instructor of VIS proceeds in directing the thoughts of the person going through treatment. The person is taken through the day in a positive, upbeat fashion. Starting from the moment the individual wakes up, the instructor guides him/her through a regular morning routine: getting dressed, going to school, seeing their peers, and delivering an excellent speech. Throughout these imagined scenes, words such as, "confidence," "positive," "cheerful," "comfortable," and

"relaxed" are used to reduce levels of anxiety that might arise from this communication situation (Ayres et al., 1998).

Ayres and Hopf (1985) conducted a study in which 430 college students participated in verifying the effectiveness of this treatment. During the first week of class, they filled out the PRCA scale to rate their CA levels before the treatment. Split into four different categories, each group filled out the PRCA again after the assigned speeches were delivered. The first group was given the VIS treatment and delivered an informative speech directly after. The second group completed the informative speeches but did not engage in the VIS treatment. The third group was given VIS treatment before their first and second speeches for the semester, and the final group completed both speeches without the VIS treatment (Ayres & Hopf, 1985). The results of this study indicate that anxiety is lower among those who have been given VIS treatment than those who have not. The effectiveness of VIS has been attributed to individuals learning a means of self-control over their fears by stressing positive visualization (Ayres & Hopf, 1985). The optimistic thinking that takes place in visualization seems to be the factor that reduces anxiety. Another study compared the effectiveness of VIS to other forms of remediation. The results "…indicate[d] that VIS was as effective in reducing communication anxiety…" as other treatments (Ayres & Hopf, 1987, p. 239).

Efforts have been made to refine this treatment to accommodate the preferences of different individuals. Understanding that some people process information verbally, others through imagery, and still others through a balance of both, Ayres and colleagues have studied the effects of customized VIS that accommodate for these individual needs (Ayres et al., 1998). The treatment was modified by reading the script to those who

prefer verbal learning, giving pictured scenes to those who preferred learning through imagery, and offering both to those who had found both to be highly effective. As hypothesized, the results indicated that the largest reduction of CA occurred among those given treatment that matched their learning styles. What came as a surprise, however, was that exposure to VIS in a non-preferred mode dampened the procedure's effectiveness. The evidence found in this study urges researchers to develop forms of treatment that match individual tendencies and dispositions.

The factors that contribute to the fluency in one's speaking style include the amount of planning, the specificity of those plans, and the level of trait anxiety found within the individual. Fluency is a factor that plays a significant role in the perceptions formulated by message recipients, and by minimizing the number of hesitations found within speech, a speaker can ensure that his or her message and character can be perceived in a competent manner. The following section will discuss the predictions of this particular study based on the review of literature above, and evaluate the effects and influence of planning on the verbal fluency of speakers.

CHAPTER 2: RATIONALE & HYPOTHESES

The following chapter will present the predictions set forth in this particular study. Based on the theories presented in the previous section, II training and induced mental rehearsal should have a significant impact on speaking behavior. The general purpose of these hypotheses is to find a practical solution to the negative repercussions associated with disfluent verbal behavior.

Imagined interactions are used to test and imagine the consequences of alternative messages for actual conversations individuals intend to have, would like to have, or are anxious about having (Honeycutt et al., 1989-90). IIs can help predict future events by permitting individuals to take the time to practice messages and predict potential responses (Honeycutt et al., 1989). Allen and Honeycutt (1997) found that proactive IIs result in fewer nonverbal expressions of anxiety. Having fewer silent pauses and shorter speech on-set latencies, those reporting high use of II activity for rehearsal also use fewer object adaptors when speaking. This study shows that the proactive characteristic of IIs can significantly increase readiness to communicate as well as decreasing the apprehension that may arise in communication. Rehearsal of communication increases the confidence of the person participating in IIs (Gotcher & Honeycutt, 1989). The II then allows the self to compose a position through logical organization.

Gotcher and Honeycutt (1989) proposed that rehearsing messages in IIs releases tension as the imaginer reduces uncertainty for the anticipated interaction. Having a firm grasp of what will be said, the II participant can engage in conversation smoothly without any hindrances. If an apprehensive speaker can imagine the movements and words necessary to give an effective speech, confidence level will increase, making the actual

encounter more bearable. The visualization treatment has also been found to increase one's willingness to communicate thereby developing positive perceptions in others that the individual is a competent communicator (Ayres, Heuett, & Sonandre, 1998).

The preparation involved through IIs and visualization should also increase verbal fluency. When there is attention placed on speech, an individual has the ability to perfect delivery in whatever manner appropriate. Berger et al. (1989) describe fluency as being a direct result of mindfulness. According to Greene (1984), disfluencies found in speech are due to the cognitive process of deciding what to say. By preparing for the content of speech before the encounter, a person's disfluencies should be minimized. Consequently, this researcher proposes that:

H1: II training and induced mental rehearsal before an encounter results in the formulation of more plans prior to that encounter.

H2: II training and induced mental rehearsal prior to an anticipated encounter decreases the amount of silent pausing in that encounter.

H3: II training and induced mental rehearsal prior to an anticipated encounter decreases the number of vocalized pauses in that encounter.

H4: II training and induced mental rehearsal prior to an anticipated encounter decreases the total time of disfluencies in that encounter.

In planning, the more detailed one's thoughts are concerning the expected situation, the higher the chances are that the plan will be successful. The person with a complex plan consisting of numerous subplans will be able to deal with and adjust to unexpected occurrences much more easily. The flexibility resulting from planning allows

for the individual to be prepared for different outcomes (Berger et al., 1989). By establishing multiple alternatives, the planner is given more freedom to choose the most appropriate path to obtain his/her goals. Research has indicated that through preparation, the complexity of one's plan relates directly with the fluency found in the production of speech (Berger, 1997). Flexibility and preparation then fosters verbal fluency.

Other research on fluency has indicated that there is a point in planning in which the complexity as well as the number of plans may actually hinder fluency (Berger, 1997). Berger et al. (1989) explain that as a plan becomes increasingly complex, the uncertainty that results from a number of contingencies actually increases the hesitation found in disfluent speech. Plans must then remain only moderately complex in order to produce verbal fluency (Berger et al., 1989). So, the fifth hypothesis proposes that:

> **H5:** Individuals who participate in some form of planning will decrease in the number of total disfluencies, but those who participate in extremely specific and detailed plans will increase in the number of total disfluencies.

A universal characteristic of CA is an internal discomfort associated with communication (McCroskey and Beatty, 1998). A highly apprehensive person feels more obtrusive levels of anxiety in communicating and anticipating communication than those who have less CA (McCroskey, 1977b). Stagner (1936) found that individuals who reported that they were nervous produced higher disfluencies in recited speech. With state anxiety being a factor in fluency, one may assume that different levels of trait anxiety may have just as much influence. More disfluencies should then be found in the

speech of the highly apprehensive. The high CA job applicant has also been perceived to be less task and socially attractive, projected to be less satisfied in his/her job, had poorer relationships with peers, supervisors, and subordinates at work, was less productive, and had smaller chances for advancement in the organization (McCroskey, 1979; Daly & McCroskey 1975). Therefore, the following hypothesis is proposed:

H6: Higher CA scores will predict more disfluencies in speech than lower CA scores.

CHAPTER 3: METHODS & MATERIALS

Methodology

Participants (N = 95) for this experiment were enrolled in introductory communication courses at Louisiana State University, and were given extra credit for their participation. The control group consisted of 48 participants and the experimental group included 47 participants. The sample consisted of approximately 48% female and 52% male. The participant's mean age was 20, with a range from 18 to 25 and a standard deviation of 1.61. Approximately 64% of the participants in the sample were first or second year students, while the remaining members of the sample were upperclassmen. About 77% of the participants were business majors, and the ethnic diversity of the sample consisted of approximately 78% classified as white, 11% black, and another 11% Asian. The demographics of this sample compare with the population at this particular Southern university. With a majority of white students, minority groups are under represented by this sample.

To maintain confidentiality, each student was assigned a code number. The number corresponded with the alphabetical roster in their enrolled class. Names of the participants were deleted as soon as the taped verbal evaluations had been matched with the initial code number. All data at this point were free of both name and identity.

Each participant was called individually into a room with only the proctor present. Before entering, the proctor determined whether the participant was a part of the experimental or control group based on a coin flip (Heads = Control; Tails = Experimental). After reading and signing a consent form (Appendix A), all participants were told that the experiment was a study on small group communication in order for the

individual's speech to be emphasized. Before verbal evaluations began, the PRCA was administered in order to identify the trait communication apprehension levels of participants (Appendix B).

Participants in the experimental group listened to a short 4-minute training session (Appendix C) that reviewed the planning characteristics of imagined interactions. After receiving exposure to IIs, the subjects were given a set of predetermined notes on a topic that was pertinent to this particular Southern university (Appendix D). The given notes were meant to simulate a small group discussion in which each member of the group brings a different piece of information to contribute to the discussion. Subjects were encouraged to role-play as accurately as possible to ensure realistic results. Participants in the experimental condition were given 3 minutes to read over and prepare with their set of notes and then were asked to present their information to the rest of the imaginary group. Each presentation did not exceed a minute and thirty seconds per person.

Members of the control group did not partake in the II training, but were given the same set of pre-determined notes. During the 3-minute planning period, those in the control group were given a distractor task to ensure that planning did not take place before they spoke. Subjects in the distractor task were told, "Since we want to get an idea of your language skills, we would like for you to complete the following language task." Those in the control group were asked to list as many words as they could with the letters found in the term 'small group communication.' This task was used in a similar study evaluating planning's effect on verbal fluency (Allen, 1990). Preventing the control group from planning ensured to a large degree that the verbal behavior presented

was free of any structured organization. Allen's study (1990) demonstrated the effectiveness of this strategy as well as its importance in preserving the resulting data.

The first 60-seconds of each speech was videotaped and analyzed by the sole researcher of this project. The coder counted the number of disfluencies under the categories of vocalized pauses (i.e., um, ah, & er), and un-vocalized pauses (i.e., silent pause time minus switch pause time). The total number of disfluencies was calculated to determine the overall disfluency of each participant. Duration measures were also tabulated so that each disfluency could be accurately represented. After the participant was videotaped, he/she was asked to fill out a post-experiment survey that tested for the variables of plan formation and specificity (Appendix E).

Instruments

Two separate surveys were necessary for the completion of this experiment. The first test was the PRCA 24 (Appendix B). The best scale of measuring CA is the self-report PRCA developed by McCroskey (McCroskey, 1982). This scale has consistently yielded reliability estimates above .90 (McCroskey, 1978) and produced an alpha of .94 in this particular study. The administration of this test controlled for the influence of trait CA in the development of verbal fluency, and deciphered its influence upon speech behavior.

The post-experiment survey (Appendix E) was constructed to meet the specific needs of this study. Within the survey, standard demographics and the levels of two variables, planning and specificity, were collected. The objective of this survey was to identify whether or not members of both the control and experimental group engaged in any type of planning behavior before the exercise began. Individuals in the control group

who were not given II training may actually have planned on their own accord while those given the training in the experimental group may in fact have disregarded planning. The survey also determined the level of specificity found within these plans. Some of the items were reverse coded to control for response bias. The reliability of the items testing planning obtained an alpha of .75, whereas the items for specificity produced a reliability estimate of .79.

Another instrument used for this experiment was the training video that the experimental group watched. The training was written and conducted by this researcher, Charles Choi, and was presented in a manner similar to visualization (Ayres et al., 1998). The video also included the definition, examples, and procedural steps in IIs. Benefits of this concept were also explained to encourage the use of IIs as planning. The goal of the training was for the subjects in the experimental group to prepare for their speeches properly.

The equipment necessary for this experiment included a television and VCR to administer II training, a video and video camera to record each subject's verbal performance, and the surveys, which have already been discussed.

Data Analysis

In order to assess pausing behaviors, data analysis included the frequency and duration of silent and vocalized pauses, trait CA levels of each participant, the extent of plans generated before the speech, and the level of specificity found within those plans. Six different Likert scale items were used in the post-experiment survey (Appendix E) to assess planning and specificity. Calculating the mathematical mean from the raw scores operationalized both variables. Hypothesis 1 sought to find a relationship between

induced planning and the number of plans formed. An independent t-test was used to assess this relationship between the two variables.

Hypotheses 2 through 4 hoped to find a negative relationship between the independent variable of induced planning and three separate dependent variables: the number of silent pauses, the number of vocalized pauses, and the total duration of disfluencies by seconds. Once again, an independent t-test was chosen to evaluate the relationship between the variables.

The statistical test of Pearson's correlation was used for the other hypotheses. Hypothesis 5 predicted an increase in disfluency as the specificity of the plans increased in complexity, while hypothesis 6 sought to find a relationship between the CA levels and the number of total disfluencies.

CHAPTER 4: RESULTS

Based on the methods of testing stated above, the following section will discuss the results from the predictions made at the onset of this investigation. Through the findings in this particular analysis, an explanation of the relationship found between planning and verbal fluency will be addressed. The present investigation included three independent variables: (1) induced mental rehearsal (2) individual trait CA levels and (3) the specificity of plans formulated within the experiment. Four dependent variables were examined: first, the amount of planning generated during the experiment; second, the frequency of silent pauses found within the speech; third, the frequency of vocalized pauses found within the speech, and fourth, the duration of total disfluencies measured by seconds.

The first hypothesis proposed that II training and induced mental rehearsal before an encounter would result in the formulation of more plans prior to that encounter. Results from an independent sample t-test indicated a significant relationship between induced mental rehearsal and the formulation of plans, t (82.85) = -6.271, $p < .001$. Participants in the experimental group, who were given the opportunity to plan, formulated more plans than members of the control group who were not given the same opportunity (M for the control group is 2.64, SD = .76; M for the experimental group is 3.47, SD = .51). Therefore, hypothesis 1 was supported.

The second and third hypotheses were concerned with the frequency of silent pauses and vocalized pauses found within speech. In hypothesis 2, an independent sample t-test examined the effect of induced mental rehearsal on the frequency of silent pauses within a speech. The results indicated a significant relationship, t (91.09) = 7.57,

$p < .001$. By participating in the preparation process before a speech, the disfluency of silent pauses decreased significantly (M for the control group is 10.88, SD = 3.36; M for the experimental group is 6.04, SD = 6.04). Therefore, hypothesis 2 was supported.

Hypothesis 3 also used an independent sample t-test to examine the effect of induced mental rehearsal on the number of vocalized pauses within a speech. The results were not significant for this prediction, $t(93) = .032$, $p > .05$. There was no significant difference found in the frequency of vocalized pauses between those in the experimental group compared to those in the control (M for the control group is 5.63, SD = 4.28; M for the experimental group is 5.60, SD = 4.73). Therefore, hypothesis 3 was not supported.

Hypothesis 4 predicted that the overall time of disfluencies by seconds would decrease for those who engaged in preparation before their speech. Results from an independent sample t-test indicated a significant relationship, $t(62.29) = 4.92$, $p < .001$. Through mental rehearsal before the speech encounter, participants were able to reduce the duration of disfluency significantly (M for the control group is 17.67, SD = 9.72; M for the experimental group is 10.21, SD = 3.94). Therefore, hypothesis 4 was supported.

Hypothesis 5 predicted that the individuals who participated in some form of planning would decrease in fluency as the specificity of the plans increased. The sample was first filtered to only include participants who formulated moderate and high numbers of plans. Results did not correlate with the predictions made at the beginning of this investigation. The results of a correlation test revealed no correlation between plan specificity and the total number of disfluencies, $r(52) = -.18$, one tailed $p > .05$.

A post hoc analysis was conducted on the entire sample to evaluate the effects of plan specificity on the other measurements of disfluency. For the entire sample the

results of a correlation test revealed a negative correlation between plan specificity and the total number of disfluencies, r (95) = -.29, two tailed $p < .01$. Participants actually increased in fluency when formulating more specific plans. The results of a correlation test revealed another negative correlation between plan specificity and the number of silent pauses, r (95) = -.44, two tailed $p < .001$. Another correlation test revealed no correlation between plan specificity and the number of vocalized pauses, r (95) = .001, two tailed $p > .05$. Finally, the results of another correlation test revealed a negative correlation between plan specificity and the total duration of all disfluencies by second, r (95) = -.49, two tailed $p < .001$. Therefore, the original prediction of hypothesis 5 was not supported.

Finally, hypothesis 6 sought to examine whether higher CA scores (indicating more anxiety) would predict more disfluencies within a speech. The results of a correlation test revealed a weak positive correlation between CA levels and the total number of disfluencies, r (95) = .22, one tailed $p < .05$. As the participant's CA level increased, so did the number of their total disfluencies. Additional correlation tests were conducted to assess the effects of CA levels on different measurements of disfluencies. A weak positive correlation was found between CA levels and the number of silent pauses, r (95) = .19, one tailed $p < .05$. No correlation was found between CA levels and the number of vocalized pauses, r (95) = .13, one tailed $p > .05$. A significant positive correlation was found between CA levels and the total duration of disfluencies within a speech, r (95) = .34, one tailed $p < .001$. Finally, a negative correlation was found between CA levels and the average number of plans formulated by participants, r (95) =

-.28, two tailed $p < .01$. The post hoc analysis attempted to determine the extent in which those with higher CA levels actually planned and what effect planning had on disfluencies. Based on these results, Hypothesis 6 was supported.

CHAPTER 5: DISCUSSION

This portion of the investigation will review the predictions speculated at the onset and attempt to tie together the importance of the findings in this particular study. The theoretical implications of the results found in this investigation will be addressed along with an attempt to provide a framework for the outcomes of planning. Relating this discussion to future research concerning this topic, this section will finally discuss some of the limitations of the present investigation.

The effects of verbal fluency play a significant role in the development of one's credibility (Goldman-Eisler, 1968; Lay & Burron, 1968; Miller & Hewgill 1964; Stagner, 1936). By addressing a method to mediate disfluencies, advances can be made to ensure the effectiveness and authority of a person's message. The ultimate goal of this analysis was to create concrete strategies for developing a speaker's verbal fluency.

The first four hypotheses dealt with the influence of II training and time to prepare plans. The results indicated that the fluency of a person's speech was affected by this double prompting. The first hypothesis predicted that participants would formulate more plans when exposed to II training and induced mental rehearsal. Plans are mental strategies people use to achieve personal goals (Berger et al. 1989). The process of developing plans takes time, and those who engage in this process are better prepared for the actual speech encounter. The results for this directional prediction indicated a significant finding. This study indicated that the speaking behaviors of those that planned versus those that did not plan resulted in a more fluent style of speech.

The second hypothesis dealt specifically with the silent pauses found within speech. Regarding these silent pauses, Goldman-Eisler (1968) found that the hesitation

demonstrates that the speaker is in the process of thinking or planning what he/she would like to say next. Research has indicated that the time taken by a disfluency is mainly due to the cognitive load of message development and planning (Goldman-Eisler, 1968). According to Berger et al. (1989), up to a certain point, the formulation of plans fosters verbal fluency. This hypothesis predicted that those led through the planning process would reduce silent pauses within their speech. The results indicated that this was in fact true. Participants who did not have time to plan had more instances of silent pauses when compared to those who were encouraged to plan. Those who had time to plan prior to their presentations exhibited evidence of less cognitive load during their speech.

Hypothesis 3 predicted that those who were asked to plan would vocalize less verbal disfluency. Miller and Hewgill (1964) define a vocalized pause as an utterance of the "uh" sound between two words within a sentence. Like silent pauses, "uh's" and "um's" indicate the mental process of planning. The findings in this particular study did not find a significant difference for vocalized pauses. Regardless of whether or not a participant was encouraged to plan, planners exhibited approximately the same number of vocalized pauses as those in the control group who did not plan. The findings of this investigation suggest the unique function of vocalized pauses, and offer more room for further study. The following section will address some of the possible influences contributing to the results.

A study conducted by Allen (1990) found similar results to those in the present study. The results from Allen's investigation found that members of the sample who participated in planning before a speech had similar amounts of vocal disfluencies when compared to those who did not engage in planning. Allen proposed that those who

planned before the speech did not necessarily focus on word choice for the encounter, but rather concentrated on referential planning. In other words, preparation before the encounter only included the general ideas of the intended message, while the specific words were selected during the delivery of the message.

Vocalized pauses may also be used as a strategy to maintain a person's turn to speak. When conversing with other people, an individual will at times maintain vocalization through vocalized pauses to communicate to their partner that there is more to say. Based on this habit formed within actual conversations, the participants of the present study might have expressed their desire to communicate more information through the use of vocalized pauses. Finally, the context of the speaking engagement might have been one other reason why planners exhibited more verbal disfluencies. The imaginary scenario might not have been real enough for a participant to control or try to impede the use of vocalized pauses.

Goldman-Eisler (1968) found that the total time of disfluencies during the delivery of a message represents the amount of effort put into the plan. Hypothesis 4 analyzed the duration of disfluencies found within messages. Greene (1984) and Goldman-Eisler (1968) propose that moments of disfluency are due to the efforts exerted by the individual from cognitive load. The participants in the experimental group were predicted to spend more time on the actual message of their statements when compared to those who were not given time to prepare. The findings of this particular study supported prior research and found that those who did not plan before the encounter took more time to prepare during the speech through hesitations.

Hypothesis 5 predicted that individuals who participated in some form of planning would decrease in fluency as the specificity of those plans increased. The complexity of one's plan relates directly with the fluency found in the production of speech (Berger, 1997). According to Berger et al. (1984), the specificity of one's plans decreases the amount of disfluencies in a speech up to a certain point. However, the theory then goes on to propose that overly specific plans hinder a speaker's fluency due to multiple options and cognitive load. Berger et al. (1989) explain that when plans become overly complex, the uncertainty that results from a number of contingencies actually increases the hesitation found in disfluent speech. Results did not correlate with the predictions made at the beginning of this investigation. However, a post hoc analysis of the entire sample did find a significant negative correlation between the variable of plan specificity and both the number of silent pauses and the total duration of disfluencies. The results of this study coincide with previous research and indicate that as plan specificity increased the majority of the sample decreased in speech disfluencies.

The theory behind plan complexity describes a curvilinear relationship. As plans are made more specific, disfluencies in speech decrease, but when plans become overly specific and complex, the disfluencies are multiplied due to uncertainty (Berger et al., 1989). Due to methodological reasons, this analysis did not find evidence of the latter claim. Participants in this particular study were not given the opportunity to develop overly complex plans due to time restraints and the items in the post experiment survey calculating plan specificity may not have accurately measured overly complex plans. However, data from this study did coincide with current plan complexity theories by

showing a reduction of disfluencies occurring through the development of moderately complex plans.

Hypothesis 6 predicted a positive correlation between the level of an individual's trait anxiety (CA) and the disfluencies found in speech. Stagner (1936) found that individuals who reported that they were nervous produced higher disfluencies in recited speech. A universal characteristic of CA is an internal discomfort associated with communication (McCroskey & Beatty, 1998). A highly apprehensive person feels more obtrusive levels of anxiety in communicating and anticipating communication than those who experience less CA (McCroskey, 1977b). When a person with high CA approaches a speaking encounter, mental preparation is at times forfeited for thoughts concerning their nervous condition. People who experience higher levels of CA cannot focus on anything other than the internal discomfort that comes with extreme anxiety. The results of this investigation supported prior research and indicated a positive correlation between the CA levels and the number of disfluencies. However, the results demonstrated only a weak correlation. An explanation that might be extrapolated from the data is the factor of planning. Individuals who experience high levels of trait CA may emphasize preparation to alleviate extremely uncomfortable feelings in situations where they are forced to communicate. The results of this present study have found that induced mental preparation decreases the amount of disfluency found in speech. The weak correlation between CA levels and the number of total disfluencies may be due to the fact that the participants with high CA engaged in planning behaviors whereby moderately decreasing the number of disfluencies. A weaker negative correlation was found between individual CA levels and the average amount of planning. In other words, while those with higher

CA scores planned considerably less than those with less anxiety, there were still a number of highly anxious communicators whose planning seems to have reduced their total number of disfluencies.

The following section will explore the theoretical implications of this study. The result of a lack of planning may be detrimental in certain critical situations. Caught without preparation, a person can easily say something unintended or communicate a message that does not come across clearly. IIs aid a person with making decisions in the midst of complex and disorganized thoughts (Rosenblatt & Meyer, 1986). By planning through IIs, a speaker can compose a position through logical organization and strategically figure out how he or she will communicate the message (Edwards et al., 1988; Honeycutt et al., 1989-90). Not only will the general ideas of the message be formatted logically, this investigation has concluded that the style in which the message is delivered will improve in fluency.

Some may argue that planning before a speaking encounter is unnecessary. These people prefer to be spontaneous and contend that they are proficient speakers without planning their strategies. For these individuals, fluency is forfeited. "…These conceptual representations of actions must be available and accessible when they are needed. If they are not, action fluidity necessarily will decrease" (Berger, 1997, p. 41).

Results of this current investigation lend support to the notion that mental planning provides information and strategies that actors utilize in laboratory presentations. Participants who were encouraged and given time to plan out messages not only reported the formulation of more plans, but also exhibited fewer silent pauses

and had a smaller duration of overall disfluencies. The significance of this finding lies in the importance most people place on fluency within a message.

Voice qualities as well as other extra-linguistic aspects of speech have been consistently found to influence judgments about the personality of the speaker (Lay & Burron, 1968; Stagner, 1936). When evaluating a speaker, the listeners, according to Greene (1984), relate hesitations in speech to perceptions of competence, social attractiveness, and trustworthiness. Lay and Burron (1968) found that judges asked to rate their impressions of both hesitant and fluent speakers, rated the non-hesitant speaker more favorably with desirable characteristics such as being sincere, intelligent, good-natured, reliable and warm. The same judges characterized the hesitant speech as being averse to the listener. Perception of a speaker's fluency have also been linked to effectiveness in job interview situations (Berger et al., 1989). The effects of verbal fluency can add or detract from a person's message. Hesitations found within a speaker's delivery can result in negative perceptions of the message. When it is absolutely necessary for message recipients to hold positive and competent impressions of a speaker, prior research and the findings in the present study have concluded that the cognitive process of planning ensures the minimization of hesitations (Berger, 1997).

Gotcher and Honeycutt (1989) propose that rehearsing messages in IIs releases tension as the imaginer reduces uncertainty for the anticipated interaction. Having a firm grasp of what will be said, the II participant can engage in conversation smoothly and without any hindrances. The results of this present investigation support the reduction of uncertainty through IIs. As the participant's levels of anxiety increased, there were more disfluencies exhibited within the speech. A positive correlation between these variables

explains that planning played a factor in this relationship. Participants who engaged in the planning process demonstrated a reduction of nervousness through the minimization of disfluencies in their speech. CA refers to a trait of an individual, which results in that individual characteristically remaining silent rather than participating in communication (McCroskey, 1977b). The results in this investigation support that a person's CA level will influence the number of disfluencies in his or her speech, but that these effects can be minimized by planning strategically through IIs.

Limitations & Future Research

The findings of the present study are only a small description of the role that II's and planning play in communication behaviors. The following section will address some of the limitations to this study and offer other avenues of investigation that need to be pursued to have a clearer understanding of this process.

The first issue to address is the results found concerning the fifth hypothesis. Hypothesis 5 predicted that individuals who participated in some form of planning would decrease in fluency as the specificity of those plans increased. Instead of increasing in disfluencies with increased plan specificity, the results of this study demonstrated a negative correlation between the specificity of plans and the number of disfluencies. Methodological reasons are most likely to blame for not obtaining the results that both prior research and current theory point towards. Participants in the experimental group were only allowed 3 minutes to prepare for their speech. This time period is sufficient to devise moderate levels of plan complexity and deliver messages in a relatively fluent manner. Participants were not given the opportunity to develop overly complex plans for the speeches. The results of this study only reflected the disfluencies of those who were

given enough time to produce moderately detailed plans. To test for overly specific and complex plans, another experimental group should be added in future studies in which the participants would have 15 minutes to prepare and be encouraged at the same time to formulate as many different plans as possible. By allowing more time, the results would then indicate the disfluency levels of those who produce overly complex plans.

Due to the nature of this study, a laboratory was used to collect data. The results could possibly be different if participants were speaking with live confederates or conversing with people in a more natural setting. The duration of pauses might have been longer or shorter in this particular study because there was no threat of interruption. For example, if a person was in an actual conversation, pause time would decrease considerably because the dialogue partner might understand a pause to be a cue to begin his or her own sentence.

Another limitation might be that the participants considered their speaking turn as an invaluable or unimportant encounter. Because students knew that there were no negative repercussions to their lack of effort, it is possible for the data to have been skewed. The current method was sufficient to obtain the predicted results, but the parameters of the population may vary due to context. Future research may include different settings such as actual student government meetings or laboratory interviews with live confederates.

The participants of this sample represented only a small portion of the entire population. The majority of the sample included mostly young, white, business students. With a larger and more representative sample, the results may have offered different findings. For instance, when compared with younger college students, it is possible for

older people to have learned more fluency evoking methods of planning through more life experience. More life experience may also prove to develop an urge to minimize overall verbal disfluencies and therefore reduce them when presenting a strategic message. Only by participating in more business meetings and professional speaking encounters, does a young individual learn the value of fluency. Future research can analyze a wider representative sample as well as investigate the differences in context and situation.

A large body of research supports the notion that speech fluency is related to preparation before a speech. However, few investigations have examined the actual content of those plans. Hypothesis 3 predicted that induced mental rehearsal prior to an anticipated encounter would decrease the number of vocalized pauses in that encounter. The results in the present study did not find a significant relationship. Prior research (Allen, 1990) has proposed that the amount of semantic processing within the planning period was made secondary for more concept oriented thought. Verbal disfluencies in particular may represent a process of word selection during the speaking encounter. The degree to which mental rehearsal involves semantic processing is an important area for future research. By understanding the order of events addressed in planning, researchers can further understand the exact mental process that takes place within the disfluencies found in speech.

The style in which people communicate plays an important factor within both organizational and interpersonal contexts (Falcione, McCroskey & Daly, 1977; Infante & Gorden, 1985; Miller & Hewgill, 1964; Richmond & McCroskey 2000). The manner in which the message is delivered plays a factor in its effectiveness and acceptance (Lay &

Burron, 1968; Stagner, 1936). Based on the delivery style, message recipients formulate opinions regarding the message sender's competence, social attractiveness, and trustworthiness (Greene, 1984). Research on the effects of verbal fluency found that non-hesitant speakers are perceived as sincere, intelligent, good-natured, reliable, and warm (Miller & Hewgill, 1964). When it is absolutely necessary for recipients to hold positive impressions of a speaker, the cognitive process of planning ensures the minimization of hesitations (Berger, 1997).

This study has examined the mental process of IIs used as plans and its effect on verbal fluency. The results indicate a positive relationship between the variables and increased fluency through the preparation process. Further attention is necessary on this subject and it is only through continued investigation that researchers will understand the cognitive and behavioral aspects of preparation through IIs.

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APPENDIX A

PARTICIPANT CONSENT FORM

1. Study Title: Communication within Small Groups

2. Performance Site: Louisiana State University and Agricultural and Mechanical College

3. Investigators The following investigators are available for questions about this study, M-F, 8:00 a.m. - 4:30 p.m.

   Mr. Charles Choi, 334-1946

   Dr. Loretta Pecchioni, 578-6724

4. Purpose of the Study: The purpose of this research project is to examine small group behavior and individual interactions by participants.

5. Subject Inclusion: Students in introductory speech communication courses, age 18 and older who do not report psychological or neurological conditions.

6. Number of subjects: Approximately 90.

7. Study Procedures: The study will be conducted in two phases. In the first phase, subjects will all be tested with the PRCA questionnaire (a communication anxiety test). In the second phase, each person will be called individually into a room with only the proctor present. Subjects will be divided into control and experimental groups and will give a two-minute speech to an imaginary small group. The speeches will be videotaped for further examination.

8. Benefits: The study may yield valuable information about communication.

9. Risks: None. Every effort will be made to maintain the confidentiality of your study records. Files will be kept in secure cabinets to which only the investigators have access.

10. Right to Refuse: Subjects may choose not to participate or to withdraw from the study at any time without penalty or loss of any benefit to which they might otherwise be entitled.

11. Privacy: Results of the study may be published, but no names or identifying information will be included in the publication. Subject identity will remain confidential unless disclosure is required by law.

The study has been discussed with me and all my questions have been answered. I may direct additional questions regarding study specifics to the investigators. If I have questions about subjects' rights or other concerns, I can contact Robert C. Mathews, LSU Institutional Review Board, (225) 578-8692. I agree to participate in the study described above and acknowledge the investigator's obligation to provide me with a signed copy of this consent form.

Signature of Subject_____ Date_____

APPENDIX B
PRCA

ID#_____
Group_____

Personal Report of Communication Apprehension

Instructions: This instrument is composed of 24 statements concerning your feelings about communicating with other people. Please indicate in the space provided the degree to which you agree or disagree with each statement by noting whether you:

strongly agree	**agree**	**are undecided**	**disagree**	**strongly disagree**
1	**2**	**3**	**4**	**5**

There are no right or wrong answers. Many of the statements are similar to other statements. Do not be concerned about this. Work quickly, and just record your first impression.

_____1. I dislike participating in group discussion.

_____2. Generally, I am comfortable while participating in a group discussion.

_____3. I am tense and nervous while participating in group discussions.

_____4. I like to get involved in group discussions.

_____5. Engaging in a group discussion with new people makes me tense and nervous.

_____6. I am calm and relaxed while participating in group discussions.

_____7. Generally, I am nervous when I have to participate in a meeting.

_____8. Usually, I am calm and relaxed while participating in meetings.

_____9. I am very calm and relaxed when I am called on to express an opinion at a meeting.

_____10. I am afraid to express myself at meetings.

_____11. Communicating at meetings usually makes me uncomfortable.

_____12. I am very relaxed when answering questions at a meeting.

_____13. While participating in a conversation with a new acquaintance, I feel very nervous.

_____14. I have no fear of speaking up in conversations.

_____15. Ordinarily, I am very tense and nervous in conversations.

_____16. Ordinarily, I am very calm and relaxed in conversations.

_____17. While conversing with a new acquaintance, I feel very relaxed.

_____18. I'm afraid to speak up in a conversation.

_____19. I have no fear of giving a speech.

_____20. Certain parts of my body feel very tense and rigid while giving a speech.

_____21. I feel relaxed while giving a speech.

_____22. My thoughts become confused and jumbled when I am giving a speech.

_____23. I face the prospect of giving a speech with confidence.

_____24. While giving a speech, I get so nervous I forget facts I really know.

Calculating your score: You can compute an overall, total apprehension score as well as different subscores for four familiar contexts: talking in groups, meetings, dyads, and public situations.

Group = 18 + scores for items 2, 4, and 6, minus scores for items 1, 3, and 5.
Your group score = _____.

Meeting = 18 + scores for items 8, 9, and 13, minus scores for items 7, 10, and 11.
Your meeting score = _____.

Dyadic = 18 + scores for items 14, 16, and 17, minus scores for items 13, 15, and 18.
Your dyadic score = _____.

Public = 18 + scores for items 19, 21, and 23, minus scores for items 20, 22, and 24.
Your public score = _____.

Overall Communication Apprehension = sum of your subscores.
Your total score =_____.

Interpreting your overall score: possible range 24-120.

High communication apprehension (scores higher than 83) are characterized as low talkers, shy, withdrawn, fearful, tense, and nervous

Moderates (scores between 55 and 83) are considered "average." They know there are time when they should talk and times when they should not. Moderates are apprehensive in some situations, but not in others.

Low communication apprehension (scores lower than 55) talk a lot, seem to enjoy the company of others, are more immediate with people, and occasionally communicative even when others would rather they didn't.

Source: McCroskey, J.C. (1982). *Introduction to rhetorical communication* (4th ed.). Englewood Cliffs, NJ: Prentice Hall.

APPENDIX C

II TRAINING SESSION

I. Definition

a. Researchers have discovered that in our efforts to prepare for difficult situations or people, we often find ourselves engaging in self-talk. Sometimes that talk includes what researchers call "imagined interactions." This kind of self-talk occurs in our heads and involves mental conversations with partners who may not even be physically present. IIs allow for the individual to be prepared for an interaction itself as well as random occurrences that might not be expected. Such mental conversations usually occur before an anticipated actual conversation. Imagined interactions can be one-sided where one person does most of the talking -- or they can be two-sided. These mental conversations can be very brief -- or very long. They can be fairly vague -- or highly detailed. They might also address a number of different topics -- or focus exclusively on one thing.

II. Description

a. Used as planning

    i. Plans are mental strategies that a person uses to achieve their personal goals

b. One can see the encounter (i.e. characters, setting) before it actually happens, and we can imagine what we might say during the encounter. Each individual uses varying degrees of both verbal and visual imagery.

c. This form of planning allows for the addition of different factors that then produce varying outcomes. IIs are comparable to writing and viewing a comic strip
    i. Mind reading; time-travel; timely pauses
    ii. Verbal captions
    iii. Rewriting dialogue when you feel necessary

III. Benefits and Goals

a. The objective of any message is to communicate one's thoughts thoroughly, strategically, and effectively
    i. Through the mental preparation of IIs, this objective can be achieved
b. IIs can help predict future events by taking the time to practice messages and predicting potential responses
c. Those who participate in some form of planning, experience more control in their surroundings by knowing what to expect and being less surprised when deviations from expectations occur.
d. IIs create a flexible path
    i. Factors not addressed during the initial planning process are ALWAYS present, and there are also random occurrences that hinder the original plan. These factors can be minimized through the act of forming contingencies.

IV. Results of ignoring the planning process

a. At the moment of an important / anxiety producing communicative encounters, one's thoughts may be filled with too many options and variables to distinguish from.
b. It is difficult to be effective and strategic in the midst of muddled thoughts
c. Also, caught without preparation, the individual can easily say something unintended or communicate a message that did not come across clearly.
d. IIs aid the individual with making decisions in the midst of complex and disorganized thoughts. The II allows the self to compose a position through logical organization.

So, imagine that you are about to enter an important cabinet meeting with your peers in student government. Because of your recent appointment, this is the first time attending a meeting of this nature, and you hope to make a strong first impression. Prepare a 2-minute speech advocating your particular position.

APPENDIX D

SPEECH TOPIC

Imagine that you are a member of the LSU student government. You are currently discussing issues regarding next semester with 5 other members of your staff.

Topic: Alumni have generated excess funds for the 2002 fall semester. The funds need to be distributed, and administration has asked you to nominate prospective options. Please be prepared to advocate your petition for about 2 minutes.

Here are some notes you jotted down last night:

A new facility for Mike the Tiger.

- It's been 10 yrs since the last one was built.
- Mike's getting sick.
- With your plan, Mike will be happy for 50 yrs.

APPENDIX E
POST EXPERIMENT SURVEY

ID#_____
Group_____

1. Age: _____

2. Sex: (a) Female (b) Male

3. Primary ethnic background: (Circle one)

   (a) African American (b) Latino/a (c) Asian / Pacific Islander (d) White

   (e) Native American (f) Middle Eastern (g) Other_____

4. Major: (a) Sciences (b) Humanities (c) Business (d) Art (e) Other

5. Year in school: 1 2 3 4 5+

PLEASE INDICATE THE DEGREE TO WHICH YOU AGREE WITH THE FOLLOWING:

6. Did you plan out what you would say?

NO no Not Sure yes **YES**

7. While preparing my speech, I imagined the exact words I would say.

Strongly Agree! Agree Undecided Disagree **Strongly Disagree!**

8. Were the things you said the first words that came to mind?

NO no Not Sure yes **YES**

9. The plans I formulated before I spoke were very detailed.

Strongly Agree! Agree Undecided Disagree **Strongly Disagree!**

10. Did you formulate complete sentences in your mind before it was your turn to speak?

NO no Not Sure yes **YES**

11. Did you participate in any preparation before your turn to speak?

NO no Not Sure yes **YES**

12. When deciding what to say, were your plans detailed and well developed?

NO no Not Sure yes **YES**

13. Before my turn to speak, I had decided on multiple ways of discussing my given topic.

Strongly Agree! Agree Undecided Disagree **Strongly Disagree!**

14. I imagined or planned about the role-playing activity after I received the instructions.

Strongly Agree! Agree Undecided Disagree **Strongly Disagree!**

15. When preparing to speak, did you picture images of yourself speaking about the given topic?

NO no Not Sure yes **YES**

16. My preparation for this speech can be considered complex, specific, and detailed.

Strongly Agree! Agree Undecided Disagree **Strongly Disagree!**

17. I participated in some type of mental preparation before speaking.

Strongly Agree! Agree Undecided Disagree **Strongly Disagree!**

I want to thank you for participating and being videotaped in this exciting research on small group communication!!

VITA

Charles W. Choi, the son of Mr. and Mrs. Hong Ki Choi, is a Korean-American born and raised in Los Angeles, California. In May of 2000, Charles received his bachelor of arts degree in public relations at Biola University. He will receive the degree of Master of Arts in communication theory in May of 2002. A child of God and an older brother to Christopher and Cliff, he plans on surfing forever.