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POWER-OF-SPEECH STYLES' HEDGES, HESITATIONS, INTENSIFIERS, AND TAG QUESTIONS EFFECTS ON PERCEIVED INFORMATION MANIPULATION, HONESTY, AND SPEAKERS' CHARACTER, COMPETENCE, AND SOCIABILITY: A MULTI-PARALLEL AND SERIAL MEDIATION EXPLORATION

Kevin Bryant

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by

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ABSTRACT

This dissertation used Power of Speech Style (POS) theory's powerless linguistic cues (hedges, hesitations, intensifiers, and tag questions), Information Manipulation Theory and McCroskey's Speaker Credibility Scale to determine if perceived honesty mediates the relations between a speaker's use of powerless linguistic cues and evaluations of that speaker's credibility. Two studies were conducted. The first study tested these variables relationships with an experimental design involving reading a courtroom witness' transcript. An EFA was conducted to determine appropriate factors for perceived information manipulation. Then mediation analysis using PROCESS included four parallel mediators from the previously tested EFA. The second study provided replication and extension of study one by including three new message transcript scenarios between physician-patient, politician-constituent, and professor-student. Additional covariables such as gender, lie acceptance, political affiliation, perceived threat severity of pain medication, and student responsibility were included to account for any undue influence on the dependent variables. The results produced a new measurement with a CFA for the Information Manipulation Scale (IMS), a reordering of items for the factor structure of speaker credibility, and advice for improving speaker credibility by prioritizing the removal of hesitations from one's speech. Additionally, intensifiers were identified as not being powerless linguistic cues and should not be included in future studies of POS. Future research was proposed for how to overcome limitations of these studies, and various ways in which the new IMS and speaker credibility measurements can be tested and further validated.

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DEDICATION

This dissertation is dedicated to individuals who I cannot thank enough. To my mother Sherry Bryant for her unwavering support and never-ending love she provided me, may she rest in peace. To my grandparents Bobby and Ann Steward for showing me the pure love of Christ and helping rear me in righteousness. To my sisters Amanda and Krystal Bryant, for always being there to listen to my lame jokes but laugh anyways. To all my immediate aunts, uncles, cousins, and in-laws who never stopped believing in me, it is because of you all that I became the first PhD in our family.

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LIST OF ABBREVIATIONS

ANCOVA	Analysis of Covariance
ANOVA	Analysis of Variance
CFA	Confirmatory Factor Analysis
CI	Confidence Intervals
CP	Cooperative Principle (Grice's)
DV	Dependent Variable
EFA	Exploratory Factor Analysis
GCS	Generalized Communicative Suspicion
H	Hypothesis
IMS	Information Manipulation Scale
IMT	Information Manipulation Theory
IV	Independent Variable
KMO	Kaiser-Meyer-Olkin
M	Mediator
PLC	Powerless Linguistic Cues
POS	Power of Speech Styles Theory
RMSEA	Root Mean Standard Error Approximation
RQ	Research Question
SPSS	Statistical Package for Social Sciences
SRMR	Standardized Root Mean Squared Residual
TDT	Truth-Default Theory
Tukey's HSD	Tukey's Honest Significant Difference

CHAPTER I – Study One

Rationale and Justification

Honesty has been conceptualized as a measure of character (Hosman, 1989), sender demeanor (Levine, Serota, Shulman, Clare, Park, Shaw, et al., 2011), (un)certainty (Jensen, 2008), and sociability (Smith, Siltanen & Hosman, 1998). The Source Credibility Scale established a link between credibility and honesty (McCroskey & Young, 1981). In a recent study on power and deception, veridical speech, at least when immediately preceding deceptive communication, greatly improved a speaker's sense of power, "which affects both the [speaker's] subsequent communication" and credibility (Dunbar, Jensen, Bessarabova, Burgoon, Bernard, Harrison, et al., 2014, p. 869). A seminal study of powerful language components analyzed the credibility of a courtroom witness' testimony with items such as trustworthiness, convincing nature, believability, and competence (Erickson, Lind, Johnson & O'Barr, 1978). So, from its academic inception, powerful language has been tacitly tied to trust and honesty.

While much research has focused separately on powerful linguistic styles and deception, little research to date has been conducted on the effects of powerful language styles on attitudes about deception. Even when researchers have included concepts of veracity when studying these language features, often times the honesty items were not consistently applied (Bradac & Mulac, 1984; Hosman, 1989; Smith, Siltanen & Hosman, 1998). For instance, Hosman's (1989) factor structure for character included honesty and trustworthiness. In a later study, honesty and trustworthiness were conceptually aligned within the sociability factor; while the second factor of authoritativeness contained believability as one of its items (Smith, Siltanen & Hosman, 1998). The conflation of

these *trust* items suggests that the *trustworthy* dimension deserves further scrutiny as it relates to powerful and powerless language styles. This study will explicate the link between perceptual mendacity in powerful and powerless linguistic styles and other pertinent concerns such as credibility and persuasion.

Differences exist in communicative behavior between truthful and deceptive communicators (Dulaney, 1982; Knapp, Hart & Dennis, 1974; Newman, Pennebaker, Berry & Richards, 2003; Toma & Hancock, 2012; Zhou, Burgoon, Nunamaker & Twitchell, 2004). Many scholars have theorized about these differences and developed several prominent explanations. For instance, Knapp and Comadena (1979) argued that a need existed to "dissociate" oneself from the guilt or anxiety felt as a result of being deceptive. Perhaps deception facilitated greater strain on cognitive processes creating measurable differences between deceivers' and truth-tellers' communicative behaviors (Vrij, Granhag, Mann & Leal, 2011). Many times, behaviors and signifiers of deception were leaked unconsciously or intentionally for some ostensible gain (Buller & Burgoon, 1996; Ekman & Friesen, 1969; Ekman, 2001). Maturity, whether emotional, cognitive, or moral, affected the amount of and targets of lies (Levine, Serota, Carey & Messer, 2013). Increased motivation has led to a "motivation impairment effect" (DePaulo, Kirkendol, Tang & O'Brien, 1988); although, this effect may actually be the differences between behaviors of motivation rather than deception (DePaulo, Lindsay, Malone, Muhlenbruck, Charlton & Cooper, 2003) since motives that guided honesty were similar, if not the same, when producing deception (Levine, Kim & Hamel, 2010).

Currently, a paucity of research examining powerful language styles and deception is evident in two main ways. First, the alignment of items like honesty and

trustworthiness are inconsistent; and second, no research examines the intersection of powerful language styles and various forms of deception. Do people see powerful language as more or less deceptive than powerless language? Will perceptions of deception and associated behaviors match previously established evaluations of individuals who use powerful or powerless language styles? First, this study highlights deception literature, specifically the forms of and perceptions of dishonesty with associated manifest behaviors. Next, a review of the body of research surrounding components and evaluations of powerful language is presented. Then, research questions are offered followed by a detailed description of the methods of testing these scientific inquiries. Finally, the results of the data analysis are discussed including the implications, limitations, and directions for future research.

CHAPTER II - Literature Review

Information Manipulation Theory

Deception has long been a fascination for scholars. In 1992 McCornack codified information manipulation theory (IMT) using the four maxims of *quantity, quality, relevance,* and *manner.* IMT provides a more inclusive and comprehensive understanding of the phenomena of deception rather than trying to create mutually exclusive categories of deception like many others have done (Buller & Burgoon, 1996; Zuckerman, DePaulo & Rosenthal, 1981). Previously, deceit was categorized into many types, namely outright lies, subtle lies and exaggerations/minimizations (DePaulo, Kirkendol, Kashy, Wyer & Epstein, 1996). Others have referred to outright lies as falsifications (Burgoon & Buller, 1996). Ekman (2001) believed that the two primary ways to dissemble were through falsification and concealment. Still other forms of deception were classified as equivocations which meant varying the ambiguity or clarity of the message (Bavelas, Black, Chovil & Mullett, 1990). Originally, Turner, Edgley and Olmstead (1975) argued that information could be manipulated by concealment, distortion, and diversion. This typology concentrated on the message form rather than the "strategy" or "type" of deception classification ultimately enhancing conceptual distinctness within the deception construct and literature (McCornack, 1992).

IMT, based on Grice's Cooperative Principle (CP), articulated several basic continuums for how information can be managed, even to deceptive ends. The *quality* continuum was focused on veracity where one pole was 100% false information (fabrication), and the opposite end of the spectrum was 100% truth. Presumably, lies told that fell *near* the latter end of the spectrum (as only 100% can equal the absence of any

falsities) were white lies, or lies of little consequence. The second continuum related to the conversational maxim of *quantity* (McCornack, 1992). Too much information would be, as Metts (1989) put it, overt manipulation of information, and too little information would be covert manipulation. The third continuum, as already hinted at by Turner et al. (1975) was the *relevance* dimension, a dimension that Grice (1975) referred to as *relation*. Relevance was one of the sub-components of Bavelas et al. (1990) "message equivocality." Essentially, this continuum measures the pertinence or appositeness of the communication. Thus, a violation of this maxim could be with accurate and truthful information that is not germane to the topic at hand. The last continuum that IMT addressed was *manner* which has subsequently been referred to as clarity. This was understood as a being vague or obscure. (Again, this was a second of four sub-components used by Bavelas et al. (1990) to explain equivocality; the other two sub-components were claiming ownership of the message and recognizing the listener within the message.) All four of IMT's maxims can be manipulated independently or in concert to produce mendacious (or at least altered) messages which is why this structure is preferable to the strictly categorized "types" of deception seen elsewhere.

Perceived Deceit and Associated Behaviors

Vrij, Semin, and Bull (1996) found that people believed their use and others' use of deception were linked with an increase in body movements even though in actuality the opposite was true. This led Vrij et al. to conclude that deception is accompanied by physical rigidity. An important peculiarity of this study was that people could not accurately perceive the type or amount of behavior that they *themselves* were responsible for enacting. Commensurate with this inaccuracy, Vrij coined perceived cues of

deception as *subjective indicators* and actual cues of deception as *objective indicators*; and has reported that of the ten objective indicators of deceit, people only accurately perceived four of them (2008). Ten other subjective indicators were perceived as deceptive without any correlation to objective measurements. The current study is primarily concerned with individuals' perception of others' deception and the relationship with evaluations of powerful linguistic styles. Therefore, in order to prevent the conflation of the two types of cues (actual and perceived), perceived cues of deception will be detailed next.

A prominent way to find out how people detect deception is to measure their perceptions of behavioral cues. Three major ways that individuals' perceptions of these cues were measured in the literature were open-ended questions, close-ended questions and correlation methods. The Global Deception Team (2006), spearheaded by Charles Bond, used the open-ended questions approach to measure perceptions of citizens from 58 different countries. This enormous project demonstrated that, worldwide, people were strikingly similar in their beliefs about cues to deceit. Sixty-four percent of individuals thought that averting eye gaze was a sign of deception. More than 25% of the participants thought deceivers were more incoherent in their statements and made many body movements. Vrij (2008) reported "Lies were thought to be given away via facial expressions, verbal inconsistencies, speech hesitations, facial colouration, and pauses" (p. 119). These behavioral cues were broken down into vocal cues, visual cues, and verbal cues. Toma and Hancock (2012) further categorized these cues as strategic controllable cues or nonstrategic unknowable cues (or if knowable less able to be controlled). Visual cues and nonverbal cues not associated with the voice were considered outside the

purview of this study, so only the verbal and vocal cues are reviewed.

Vocal cues associated with nonverbal deceit included hesitations, speech errors, voice pitch, speech rate, latency and pause periods. Consistently, research has reproduced these findings about speech disfluencies, hesitations, and disturbances (DePaulo, Lindsay, Malone, Muhlenbruck, Charlton & Cooper, 2003; DePaulo & Rosenthal, 1981; DePaulo, Stone & Lassiter, 1985; Ekman, 1989; Zuckerman, DePaulo & Rosenthal, 1981; Zuckerman, Koestner & Driver, 1981). The presence of "ahs", "errs" (verbal fillers), response latency (pauses before the speech), and other forms of hesitations (pauses during the speech) were almost always perceived as more deceptive. These perceptions did not change significantly whether from trained police officers (Vrij, 1993; Mann, Vrij & Bull, 2004), prison inmates (Vrij & Semin, 1996), or non-western cultural inhabitants (Bond, Omar, Mahmoud & Bonser, 1990). In fact, when testing non-western cultures, stuttering, hesitations, negative statements, pauses and self-references were perceived as dishonesty cues by Jordanians (Al-Simadi, 2000).

Decreased immediacy, decreased consistency, and decreased plausibility of the statement, as well as increased levels of contradictions were some of the verbal cues that participants reported as deceptive (Vrij, 2008). Akehurst, Köhnken, Vrij, and Bull (1996) conducted a comprehensive study of lay persons' and police officers' beliefs about deceptive behaviors, which included beliefs about behaviors they demonstrated themselves and behaviors demonstrated by others and compared these beliefs to previous research indicating actual deceptive behaviors. Akehurst et al. (1996) reported on 64 different indicators of deception including several that were already mentioned. Lexical diversity (reported as range of vocabulary) was not perceived to increase in frequency

during deceptive interactions for oneself or others; however, the increased usage of clichés was an indicated perceptual clue. Participants believed that their own length of answers would increase during deception, but others' length of answers would decrease; paradoxically, participants believed short simple sentences would increase for self and others during times of deception. It is puzzling why people believe that their own answers would be longer when they were deceiving, notwithstanding the fact that they would use shorter, more simple sentences.

In other deceptive scenarios, respondents believed evasive responses reportedly increased for self but even more so for others. The amount of detail was thought to decrease in others while increasing for oneself, except for superfluous detail, which was thought to increase for both self and others. Reproduction of speech, admitting a lack of memory, and self-deprecation were all believed to increase for self when being deceptive (Akehurst, Köhnken, Vrij & Bull, 1996). The former two were perceived with increased usage in others as well, but the latter was reported as no change of frequency during deception. Lastly, participants believed that they would *describe* others' feelings more when they were deceiving, and other individuals would describe others' feelings less. Basically, perceptions of duplicitous behavior are relatively consistent across cultures, age, profession, training, and sex. Likewise, use of linguistic features like hedges, hesitations, intensifiers, and tag questions fairly consistently influence our perceptions of individuals who use them. How then do these previous findings on deception relate to individuals' attributions/perceptions of others who use these linguistic features?

Power of Speech Style Theory

> Individuals with low social power and low status vis-à-vis the court tended to make frequent use of intensifiers (so, very, surely, as in I surely did) hedges (kinda, I think, I guess,) especially formal grammar (use of bookish grammatical forms), hesitation forms (uh, err, you know), gestures (use of hands to express over there" while speaking), questioning forms (use of rising question intonation in declarative contexts), and polite forms (please, thank you). (Erickson, Lind, Johnson & O'Barr, 1978 p. 267)

Noticing this curious phenomenon, researchers theorized why this was happening and described the notion of powerful and powerless linguistic styles. Over the next few decades, scholars composed explanations for impression formations as a result of using these language components. Noticeable behaviors by persons high in power manifested in tendencies to use short responses, even one-word answers (Bradac, Hemphill & Tardy, 1981). Bradac and Mulac (1984) echoed this observation by claiming that a powerful style was evidenced by fluent, terse and direct communication. Notably this meant that one would not use these language features. When these features were present, speakers' ratings of competency, attractiveness, effectiveness, influence, credibility, sociability, employability, and *trustworthiness,* though not always at the same time, were affected. However, as stated earlier, this honesty dimension has not been considered exclusively, or in depth, and deserves more attention.

Molecular Approach

Research on linguistic cues has isolated the components that are most likely to negatively affect evaluations from others as hedges, hesitations, intensifiers, tag questions – or when aural, intonation in declarative comments – and politeness forms; though, Bradac and Mulac (1984) questioned whether uses of politeness forms were detrimental due to inconsistent findings involving this feature. For this reason, politeness will not be addressed in this study. Also, these linguistic components have been measured cumulatively (i.e., with multiple component types in a single message) and independently (i.e., only one type of component in a message). These different approaches to measurement have been referred to as molar or molecular views of language (Blankenship & Holtgraves, 2005; Wright & Hosman, 1983). Due to not knowing if or how each individual linguistic component influences judgements of various dimensions of honesty, the molecular approach will be used. Determining the influence that each linguistic feature individually has on ratings of honesty could facilitate our future understanding of how multiple powerless linguistic cues in the same message affect those honesty evaluations. Given the similarities between the behaviors presumed to be deceptive and the verbal and vocal behaviors innate to several of these linguistic features, people should rate these markers as more deceptive. Here is a review of the four linguistic components and how they might relate to the various types of information manipulation (perceived deceit).

Intensifiers. Speaker status, credibility, expertise, intentions, and frequency of use have all been manipulated to see how each linguistic element affects audience evaluations of the speaker (Hosman, 1989; Johnson & Vinson, 1987; Smith, Siltanen & Hosman,

1998). In the second part of his study, Hosman (1989) found high status speakers that used more intensifiers obtained the lowest character rating. The character dimension contained ratings of trustworthiness. Hosman suggested a low rating could have been the result of violated expectations that a higher speaker status should be seen as more trustworthy. Intensifiers are extra words or details that are superfluous to the meaning. Increasing details, and indeed superfluous details, were perceived as more deceptive (Akehurst, Köhnken, Vrij & Bull, 1996). This type of detail may not directly falsify the information presented. Exaggeration of truthful information through intensification can lead a subject to an inaccurate conclusion (Hopper & Bell, 1984). Deception in the quantity or relevancy maxims (i.e., equivocation or omission) was not perceived as negatively as deception in the quality maxims (i.e., fabrication of information) (Levine, Asada & Lindsey, 2003); and, Bradac and Mulac (1984) showed that intensifiers were rated relatively high on the powerfulness hierarchy; therefore, intensifiers should be rated as more deceptive on the quality maxim, but the relationship between the other deception maxims is still unclear.

Hedges. Hosman and Wright (1987) reported that litigants who did not use hedges or hesitations were perceived as less culpable of committing the crime. This was true for either admitting guilt as a defendant or when claiming victimage as a plaintiff (Bradac, Hemphill & Tardy, 1981). In the defendant scenario it was likely that the defendant was telling the truth. Generally, only a person who honestly thinks himself justified would admit to wrong-doing. If powerful language improved attributions of trustworthiness, then the plaintiff should have been judged as less blameworthy. Bradac, Hemphill and Tardy (1981) reasoned due to the violent nature of the encounter that powerful language

increased perceptions of relatively equitable blame for victims and perpetrators; however, in a second study (published in the same article) this explanation was contradicted by a serial manipulation of power of language (style) for *both* the plaintiff and the defendant (role). The results showed that when testimonies from both roles were read (as opposed to study 1 where testimony from only one role was read), the plaintiff (role) was rated less blameworthy than the defendant. Absent a significant main effect for style (power of language) or an interaction effect of role x style, powerful language could not exclusively be directly linked with increased trustworthiness since the plaintiff (not blameworthy) was also in the low-power classification (more blameworthy). Further incoherence of the veracity dimension was seen when researchers reported, "at both moderate and high levels of speaker expertise, a high level of hedges resulted in significantly lower perceptions of authoritativeness" (Smith, Siltanen & Hosman, 1998, p. 32), where authoritativeness contained an item measuring believability, while trustworthiness and honesty were categorized under a different construct that did not show the same results.

Other research on hedges indicated that when scientists reported findings, hedging was a way to improve trustworthiness unless the reported findings were attributed to someone else (Jensen, 2008). Hyland (1996) demonstrated that hedges in academic journals and scientific writings encompassed longer statements like method limitations, otherwise known as *discourse hedging*, in addition to the traditional shorter qualifying words/phrases like "maybe," "perhaps," or "in some instances" (lexical hedging). Direct ties were previously established between increases in lexical hedging leading to increased believability (Crismore & Vande Kipple, 1997). At other times (face-to-face interactions or when assessing readability), hedging was the epitome of powerlessness (Bradac &

Mulac, 1984; Meyer, 1997; Shaughnessy, 1977).

Admitting a lack of memory highlights the fact that something is unknown, uncertain, and perhaps unsaid. This could easily be interpreted as a discourse hedge (e.g., "it *happened so long ago so it's hard to remember*, but") or a lexical hedge (e.g., "yesterday I *vaguely* remember"). Forgetfulness is perceived as more deceptive, probably due to the fact that there is a chance that one could remember and just chose to omit the relevant information. No one can verify whether or not the forgotten memory is truly lost. Individuals already perceive omission as less threatening, deceptive, or immoral (Levine, Asada, Lindsey, 2003), due to this lack of verifiability. In other words, there is no need to expend cognitive resources trying to decipher (verify) if a statement is truthful or not without an obtainable certitude. Jensen (2008) called for an investigation of hedging and source attribution in relation to trustworthiness as it might have an intermediary effect.

Hesitations and Tag Questions. Hosman and Siltanen (1994) found that hesitations and tag questions were perceived as the most powerless linguistic features. When speaker expertise levels, a dimension of speaker credibility, were higher, large amounts of hesitations produced significantly greater negative attitude change; meanwhile, truth-tellers were seen as more fluent. It was questioned whether hesitations would interact with manipulations of trustworthiness to affect appraisals of speaker credibility and power (Smith, Siltanen & Hosman, 1998). Hesitations can be extrapolated as verbal disfluencies, response latencies, extended pauses, and prevarications; all of which have been correlated with perceived dissembling (though it is not definite if evasive responses are perceived as hesitancy to engage or answer the situation). The disfluent nature of hesitations may indicate that one is looking for or struggling to find

the next thing to say. The doubt cast in the minds of receivers would primarily be concerned with the veracity of the statement.

Lastly, tag questions were somewhat under-covered in the literature. These were represented by making a declarative statement quickly followed by a confirmatory interrogative (e.g., "It's over there, *isn't it?*"). The perceived deception behaviors that best symbolized tag questions were reproductions of speech or repetition of words. The extensive overlap between perceived deceptive behaviors and ostensive hesitation features and tag questions leads one to believe that these linguistic components will be perceived as more deceptive than truthful. However, there is insufficient or incompatible evidence to claim a predicted relationship between types of deception and hesitations or tag questions. Given all this, the following two research questions were posed:

RQ1: Will a message containing only a) hedges, b) hesitations, c) intensifiers, or d) tag questions be rated as more deceptive than a message without (or free of) any of these linguistic features across all four deception maxims?

RQ2: If messages with powerless linguistic cues are rated as more deceptive than messages without these four powerless linguistic cues, how will participants' ratings of perceived deceit influence evaluations of a speaker's credibility when the speaker uses these powerless linguistic cues?

CHAPTER III – Methods

Subjects

The subjects were native English speakers and were recruited by classroom announcements, social media requests, and via email send-outs. Many of the participants were college students (*N* = 145, 63%), but due to recruitment from various social media platforms and listservs, a substantial portion of participants were not college students (*N* = 86, 33%). The age range of participants was from 18 to 59 years old (27 participants did not report their age). When asked about employment status, 57 % (*N* = 132) reported they were employed. This percentage demonstrates that many of the students also have jobs while 9% (*N* = 21) of participants reported being unemployed and 5% (*N* = 11) reported being homemakers.

Sex and education level were two other demographics collected on this sample. Women comprised 59% (*n* = 138) of this sample. Men accounted for 40% (*n* = 92) of this sample and fewer than 1% (*n* = 1) of participants reporting their sex as other. Half of the participants reported having some college, but no degrees. Participants with some high school or a high school diploma reached 13% (*n* = 30), an associate's degree accounted for 12% (*n* = 27), bachelor's degree was reported by 11% (*n* = 26), and the remainder of participants (14%, *n* = 32) indicated having at least one graduate degree.

Messages

In this quasi-experimental design, participants were randomly assigned to one of four different message manipulations or one control message. Every participant had an equal 20% chance of being assigned to any specific message. The option in Qualtrics to constrain for equal group sizes was not selected and therefore the group sizes are as

follows: control had 43 participants (18.6%), hedges manipulation group had 48 (20.8%) members, hesitations contained 44 (19%) participants, intensifiers had 48 (20.8%), and the remainder of participants were in the tag questions manipulation group (n = 48, 20.8%).

This project aimed to replicate earlier research of linguistic markers of power by using a courtroom setting. When a witness is giving a testimony, there is an inherent judgement of veracity, especially when the testimony is in direct contradiction to another. This creates some inherent suspicion across all conditions without having to manipulate suspicion at all. Hosman and Wright (1987) gave fairly detailed messages represented as witness testimony concerning an automobile accident. These authors gave an example of a kernel message, which is the same control message or powerful message used for this study. The primary investigator created new experimental messages for this study so that the results are not an artifact of the previous messages. These included four sets of messages, each containing hedges, hesitations, intensifiers, or tag questions, respectively.

The control message has 353 total words. The range of words on the different experimental messages are as follows: hedges had 375, hesitations had 379, intensifiers had 372, and tag questions had 389. Considerable care was used to prevent any questions about whether the length of the messages unduly influenced the effects. All messages have either 12 or 13 uses of the linguistic component for each respective treatment condition. These same numbers have been used in previous research and have validated that an effect should surface (Hosman, 1989). Thus, there should not be too many uses of the linguistic components, but there should be enough that a manipulation is noticeable.

Manipulation Checks

Participants were asked to indicate their level of agreement with the following 6-point Likert-type statements in order to ensure that the participants did in fact perceive the intended manipulation. Two items measuring the hedges manipulation were, “This testimony made the witness seem unsure” and “You perceived this witness being doubtful.” The two items measuring hesitations were worded, “This testimony was full of hesitations” and “You perceived the witness being reluctant.” Next, intensifiers were identified with items such as, “This testimony had exaggerations” and “You perceived this witness embellishing.” The last manipulation was tag questions with items worded as, “This witness’s testimony was full of questions asking me to agree with them” and “You perceived this witness asking you to confirm their story.” Each two-item couple were found reliable with Cronbach’s alpha with the lowest alpha being .80 and the largest being .93. Therefore, each of these two item couples were averaged to create a single score measuring each groups’ perceived manipulation.

ANOVAs were conducted to test the differences between the control group and each experimental group’s intended message manipulation with the newly computed two-item score as the dependent variables. The messages containing the hedges manipulation (M = 4.21, SD = 1.22) was found to be greater ($F(1,88) = 43.186$, $p < .001$) than the control message (M = 3.58, SD = 1.31). Larger mean scores represent greater agreement that the manipulation was present in the message. The hesitations manipulation (M = 4.48, SD = .96) was greater ($F(1,84) = 74.42$, $p < .001$) than the control message (M = 2.64, SD = .96). Intensifiers (M = 4.26, SD = 1.12) were found to have higher scores ($F(1,89) = 28.91$, $p < .001$) than the control message (M = 3.05, SD = 1.02) in the

predicted direction and tag questions (M = 4.66, SD = 1.06) were also greater (F(1,88) = 43.19, p < .001) than the control message (M = 2.99, SD = 1.34).

The next manipulation check tested was the perceived power style of the messages. In order to ascribe the effects of the different messages to the powerful language styles the control message must have been perceived as being more powerful. Five items from previous research were identified as measuring the powerfulness aspect of messages such as confident, powerful, sympathetic, dynamic, and effective. These five items were semantic-differential 6-point scales with an item phrased as "This testimony made the witness sound…" Cronbach's alpha reliability for these five items was .70. These five items were averaged together to create a single score of perceived power.

This perceived powerfulness score was entered as the DV in an ANOVA to test whether the control group was rated as more powerful. The omnibus test was significant (F(4,226) = 10.08, p < .001) and post hoc results showed that the control message (N = 43, M = 3.92, SD = .64) was perceived as more powerful than hedges (n = 48, M = 3.50, SD = .76, p = .009), hesitations (n = 44, M = 2.93, SD = .97, p < .001), intensifiers (n = 48, M = 3.49, SD = .87, p = .033), and tag questions (n = 48, M = 3.29, SD = .73, p < .001). All manipulations of messages had achieved their intended manipulations and the control message was indeed perceived as more powerful than all four experimental messages that included the various linguistic cues. The degree of difference in these means may look small, but the control message was above the neutral point and all manipulated conditions were below the neutral point. O'Keefe (2003) argued that with message effects research manipulation checks are not necessary since the only differences are the specific aspects of the message that differ, but these manipulation

checks further corroborate the validity of this experimental design.

Measures

Dimensions of Deception

McCornack, Levine, Solowczuk, Torres, and Campbell (1992) developed semantic-differential items measuring four maxims of IMT. The construct being measured was deception dimensions. The quantity maxim was measured with items like "The witness's testimony seemed…" uninformative/informative, incomplete/complete, nondisclosive/disclosive, and concealing/revealing. Each of these four items has a six-point scale with one word from these pairings appearing at opposite poles. Quality was measured with semantic differential items with poles such as distorted/accurate, altered/authentic, fabricated/genuine, and false/true. The relevance maxim was represented by four items. These six-point response items contained poles with irrelevant/relevant, inappropriate/appropriate, nonapplicable/applicable, and impertinent/pertinent; while clarity's four scale items' response categories were ambiguous/clear, indefinite/definite, vague/precise, and obscure/straightforward. All four scales were found once before to be unidimensional and achieved reliability ratings of α = .93 or greater in previous research (McCornack, Levine, Solowczuk, Torres & Campbell, 1992). Due to the limited empirical support of this scale an exploratory factor analysis (EFA) was conducted.

After removing items that did not load or that cross loaded, the final factor structure ended with each factor containing three items. The sample size to scale items ratio was 19.3:1. This produced a KMO sampling adequacy of .94. Bartlett's test of sphericity was significant ($p < .001$) so the assumptions for this test have been met. The

cumulative percentage of total variance explained by these factors was 69.12%. Principal axis factoring was used due to the nature of exploring a theoretical factor structure. Varimax rotation was employed to produce orthogonal factors since each factor was to be used as a distinct mediator variable. This should help reduce any multicollinearity issues among the mediators. All factor loadings were above .4 and the reliability for each factor are as follows: "quantity violations" factor included uninformative, incomplete, and concealing (α = .83), "quality violations" factor included altered, fabricated, and false (α = .91), "relevance violations" factor included irrelevant, inappropriate, and not applicable (α = .77), and the final factor "manner violations" included ambiguous, indefinite, and obscure (α = .89).

Speaker Credibility Scale

Traditional treatments of McCroskey and Young's (1981) credibility scale included items such as honesty and trustworthiness. Intuitively, if these items are included in the mediating variables, then they should not be included in the credibility scale items. In order to assess the factor structure of the credibility construct without these items an EFA was conducted. All the original items from McCroskey and Young's (1981) scale and a few additional items from powerful language styles research were also included in the questionnaire. The final factor structure emulated previous research by producing two factors. One credibility factor, titled competence, consisted of seven items measuring stupid, incompetent, uninformed, inexpert, untrained, unintelligent, and ineffective. The second credibility factor, labeled sociability, also consisted of seven items measuring uptight, antisocial, irritable, cold, unpleasant, unlikable, and aggressive.

KMO sampling adequacy for this factor structure was .91 and Bartlett's test of

sphericity was significant ($p < .001$). Visualization of a scree plot confirmed the two-factor structure and the cumulative percentage of total variance explained was 51.75%. Again, principal axis factoring with Varimax rotation was used to produce theoretically justified orthogonal underlying factors. The reliability of the seven items for the competence factor ($\alpha = .71$) and the sociability factor ($\alpha = .73$) were both found adequate.

Of the forty-three items used in these assessments, 17 items were reverse worded. Two items were included to check insufficient effort responding (IER) and any respondents not meeting this criterion were screened out (excluded) from the analysis. Furthermore, after reading the message, the blocks of questions in Qualtrics were randomly ordered and the items within each block were also randomly ordered to prevent order effects in the data. Thus, these data should have substantial internal validity.

Procedures

Data Analysis

This project used a multiple parallel mediation model with a multicategorical focal predictor variable. The experimentally manipulated messages were entered into this model as the independent variable with indicator (dummy) coding. Hayes (2013) explained that this type of coding produced effects from each message group relative to the reference group which in this case is the control message with no powerless linguistic components. This coding scheme produces the same interpretation of dummy coding in multiple regression analysis. The composite scores for each information manipulation deception type (quantity, quality, relevance, and manner) were the mediating variables. The two dependent variables were the competence and sociability factors of the

credibility construct. See figure one for a graphical depiction of this model. OLS regression-based statistics program Process (macro for SPSS) was used for analysis of both models.

CHAPTER IV – Results

To answer RQ1, the relationship between the type of linguistic cue present in the message (X) and the type of perceived deceit (M) is evaluated with an OLS regression framework mediation model. Table 1 shows all predicted relationship coefficients between X and M. Due to indicator coding with the control message embedded in the constant, all relationships are relative to the control group. All negative coefficients indicate greater perceived deceit from the use of the specific linguistic cue as compared to the control message. Standard errors are based on confidence intervals from bias-corrected bootstrap samples of 10,000.

RQ1a asked about the relationship between a speaker's use of hedges and perceived deceit. Messages with hedge linguistic cues were perceived as more deceptive than messages with no powerless linguistic cues except when the perceived deceit was from the relevance maxim. Messages containing hesitations and tag questions were perceived as more deceptive than a message without any powerless linguistic cues across all four deception maxims. These significant relationships answered RQ1b and RQ1d. The last research question, RQ1c, focused on intensifiers that were also seen as more deceptive than the control message except when the perceived deceit was from the quantitative maxim. These coefficients in Table 1 quantify the relationship between the specific type of linguistic cue used (X) and the outcome variable (Y), which was perceived deceit relative to messages with no linguistic cues. The R^2 effect size for each

Figure 1. – Model of IMT Maxims as Mediating Variables

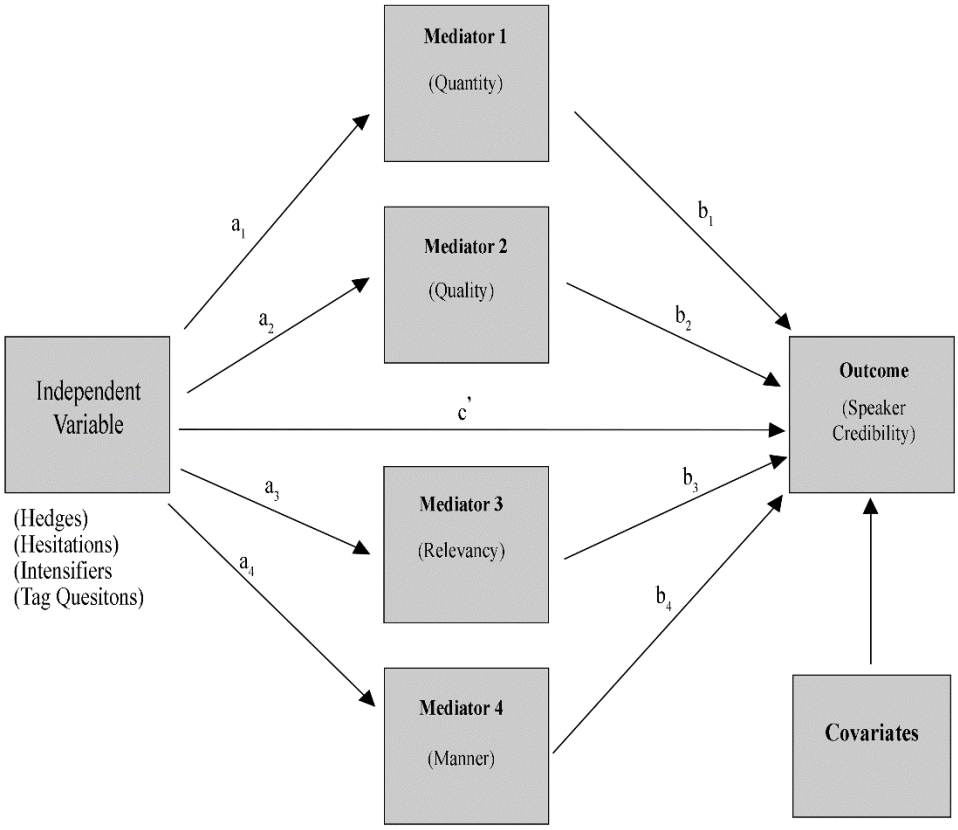


Table 1

Relationship of Linguistic Cues & Perceived Deceit Due to Information Manipulation of Amount, Honesty, Relatability, and Clarity.

	Quantitative (M_1)		Qualitative (M_2)		Relevance (M_3)		Manner (M_4)	
	a coef	*SE*	*a* coef	*SE*	*a* coef	*SE*	*a* coef	*SE*
Hedge	-.54*	.24	-.67*	.26	-.20	.22	-1.00*	.26
Hesitation	-1.11*	.25	-1.34*	.27	-.77*	.23	-1.42*	.27
Intensifier	-.47	.24	-.86*	.26	-.44*	.22	-.66*	.26
Tag Question	-.82*	.24	-.94*	.26	-.85*	.22	-1.11*	.26
F(4, 226)	5.62*, R^2 = .09		6.90*, R^2 = .11		5.32*, R^2 = .09		8.33*, R^2 = .13	

* Significant at least at the .05 level

prediction equation is shown at the bottom of Table 1. Summing these effect sizes together yields a substantial 42% of the variance in perceived deceit explained by the use of the powerless markers. Of course, this 42% does not account for total variance from multiple mediators operating at the same time, and so less variance might be explained in the full mediation model. Regardless, these results show the significant impact powerless linguistic cues have on measurement of perceived deceit.

RQ2 posited that the type of perceived deceit might play a substantial role in the relationship between a speaker's use of linguistic markers and evaluations of that speaker's credibility. This research question was tested with the same mediation model from RQ1. Relative indirect effects (Hayes, 2013) are interpreted as X's effect on Y through M relative to the reference group. Because the reference group is a one-unit incremental difference, the interpretation of the coefficient (a_ib_i) reflects how much more or less X_i group's average on Y is when operating through M_i in comparison to the reference group.

Table 2 presents the coefficients and standard errors for the relative indirect effects of this mediation model. An omnibus test for each mediator is calculated by holding all X variable classifications constant. This omnibus test has potential to produce a non-significant effect for a specific mediator even though that mediator has a significant relative indirect effect for one of the linguistic (X) cue classifications compared to when zero powerless linguistic cues were present. For this reason, bias-corrected bootstrap 95% CI were assessed for each individual linguistic grouping comparison to prevent losing or including statistically significant results due to suppression or additive effects that otherwise should not be included. For example, the

relative indirect effect of hedges on speaker credibility through the relevance mediator (a_3b_3 = -.03, *SE* = .03) is not significant even though an omnibus effect (.01, *SE* = .01, 95% CI = .001 - .024) of the cumulative mediator effect is significant.

Table 2

Relative Indirect Effects of Cues on Credibility Through Information Manipulation

Speaker Sociability								
	Quantitative (M_1)		Qualitative (M_2)		Relevance (M_3)		Manner (M_4)	
	a_1b_1	*SE*	a_2b_2	*SE*	a_3b_3	*SE*	a_4b_4	*SE*
Hedge	.02	.04	-.12*	.07	-.03	.03	-.05	.07
Hesitation	.05	.08	-.24*	.11	-.10*	.06	-.07	.10
Intensifier	.02	.04	-.15*	.08	-.06*	.04	-.03	.05
Tag Question	.03	.06	-.17*	.08	-.11*	.05	-.05	.08
Speaker Competence								
	Quantitative (M_1)		Qualitative (M_2)		Relevance (M_3)		Manner (M_4)	
	a_1b_1	*SE*	a_2b_2	*SE*	a_3b_3	*SE*	a_4b_4	*SE*
Hedge	-.06*	.04	.02	.04	-.01	.01	-.31*	.09
Hesitation	-.13*	.07	.05	.07	-.02	.04	-.44*	.11
Intensifier	-.05*	.04	.03	.05	-.01	.02	-.20*	.09
Tag Question	-.09*	.05	.03	.05	-.02	.04	-.34*	.10

* Significant at least at the .05 level.

Essentially this table shows that the quantitative mediator and the manner mediator do not produce significant relative indirect effects for any of the linguistic cues tested with the sociability factor as the DV, but all four linguistic cues have significant relative indirect effects for the competence factor of speaker credibility. The qualitative mediator produced significant results for all four linguistic cues and the relevance

mediator produced significant results for all linguistic cues, except the hedges versus control condition when the sociability factor was the DV.

Table 3

Relative Direct Effects of Linguistic Cues on Speaker Credibility Ratings

	Sociability	Factor		Competence	Factor	
	C’	*SE*	*p*	C’	*SE*	*p*
Hedge	.13	.14	.34	.14	.12	.25
Hesitation	-.13	.16	.37	-.06	.12	.62
Intensifier	-.19	.14	.16	.13	.12	.25
Tag Question	-.05	.14	.73	-.16	.12	.18

* Significant at least at the .05 level.

All coefficient signs were negative, which indicated that linguistic cues decreased speaker ratings of sociability and competence due to the violation of each respective deception mediator. The direct effects help determine if the mediators are more responsible or not for the relationship between linguistic cues and speaker evaluations of credibility. The overall model with both indirect and direct effects was significant (F[8, 222] = 10.54, $p < .001$, $R^2 = .28$). When these mediators are included in the model, nearly 30% of the total variance in speaker evaluations of sociability is explained. The second overall model (F[8, 222] = 28.21, $p < .001$, $R^2 = .50$) showed that 50% of the variance of evaluations of speaker competence is explained by these mediators. In both models all four relative direct effects are not significant, which corroborates mediation taking place.

CHAPTER V – Discussion

Unlike previous research, this study highlighted what types of linguistic components were seen as more or less dishonest and what forms of dishonesty these components were mostly ascribed. Due to non-significant relative direct effects and significant relative indirect effects, the use of powerless linguistic cues, when compared to a powerful message, affected attributions of speaker credibility due to perceived mendacity and manipulation. Additionally, because all four deception maxims were identified as mediators for some aspect of credibility, IMT's claim of four distinct manipulation types is strengthened.

As the results showed, quality and relevance were mediators for the sociability factor, but quantity and manner were not. Previous credibility research (McCroskey & Young, 1981) already aligned truthfulness items in the character (or sociability) factor, so theoretically an explanation exists for why this mediator is related to this DV. Moreover, sociability is often judged according to social norms. Politeness theory suggests that reciprocity is an integral part of turn-taking in conversations. If a conversational partner was responding with irrelevant or inappropriate comments, then it might be seen as rude, ultimately decreasing likability. So, the relationship for the quality and relevance mediators seems theoretically obvious, but why the quantity and manner measurements are not operating as mediators is less obvious.

Another social expectation that exists is privacy. Privacy management theory and social penetration theory articulate ways (how and why) privacy is structured. The quantity maxim is a measurement of completeness of information. The perception that someone may be concealing information may not adversely affect their sociability ratings

due to the mutual respect for and expectation of privacy. If someone is shy, then their conversational partner should not necessarily like them any less because they disclose less. As for manner, which can be understood as clarity, there is no theoretical reason for why affect towards an individual should decrease because they are less clear or precise; however, Horan and Dillow (2009) commented, "the deceiver should experience some aversive emotional state, because lying violates both relational (DePaulo & Kashy, 1998) and moral partner expectations (Peterson, 1996)" (p. 150).

One last consideration for this model with sociability as the DV is why hedges were not significantly different than a powerful message when operating through the relevance mediator. First, the coefficient is negative, so this result may be an artifact of this study. Second, recent research has indicated the nuanced difference found in hedging. Hedging could be lexical or discursive (Jensen, 2008). Thus, hedging can be professional or colloquial and can have different impacts due to placement (e.g., hedges in a results section are data hedges, while hedges in the discussion section are interpretation hedges) (Durik, Britt, Reynolds & Storey, 2008). For these reasons, hedges may not have been operationalized as successfully as possible for this study. More consideration and control of this variable should be enacted in future studies.

In the second model with competence as the DV, quantity and manner are the two maxims that are operating as mediators. Quantity (i.e., completeness) and manner (i.e., clarity) should work in tandem to produce greater understanding. Clarity can facilitate the ability to process information deeply by reducing cognitive load (Bolkan, Goodboy & Kelsey, 2016). Clearly, if a speaker was seen as lacking or withholding information, or as being unclear and vague about said information, then that speaker would be judged more

harshly with respect to competence (i.e., they do not know, they do not want me to know, or they cannot or will not explain it simply so I can understand it).

One reason that the quality maxim is not a mediator in this study may be the context. Participants evaluated a witness's testimony of a car crash. There is no way to objectively verify whether or not the witness is telling the truth. Since quality is most concerned with authenticity and truthfulness and each participant has no way to verify this account, the participants relied on perceptions of how complete and clear the information was. Also, relevance may be confounded by the courtroom setting. When a witness is prompted to answer questions by a lawyer, a viewer of this interaction may assume that the information is inherently relevant to their case.

These analyses suggest that communication researchers have wrongly operationalized (and to a lesser extent conceptualized) credibility research writ large. Knowing that perceptions of different manipulations of deception influence evaluations of credibility should change the way practitioners and teachers of communication behave. For example, if a politician is being prepped for a debate and knows that hedging is not perceived as serious a violation of trust as hesitations, then the politician's behavioral responses can be trained to follow suit and minimize all hesitations or extended pauses. Students' affective learning is greatly affected by their perceptions of their instructor's trustworthiness. Intimate relational partners could benefit from knowing how the use of the linguistic components are perceived by their loved ones. Doctors could decrease fear of physicians by strategically employing or avoiding certain linguistic forms. The utility of this research is far reaching.

Future Research and Limitations

This current study of powerful language styles is couched within a molecular approach. People do not tend to talk with only one linguistic component or the other. While it may be true that some people have a propensity to use some more than others, there is still a variety of use of these language features by virtually everyone. Until future research satisfies answers about how unique combinations of these linguistic forms create interaction effects, the external, ecological validity will continue to be questioned. However, the fact that credibility research can still enter a new paradigm of study regardless of whether it is in relation to powerful language styles made this endeavor worthwhile.

Message effects scholars' work are replete with charges to include more than one message in the experimental designs (Slater, 2014). Some scholars argue that multiple studies with a different message in each can help attenuate the problems associated with assuming effects are due to certain components rather than a mere artifact of the specific message under study. This design is limited in that only one message was used, but future research could implement several different messages, each with equitable manipulations, to see if the effects hold true for this model.

Conclusion

This study has provided a better understanding of the different forms of manipulations of honesty and how a mediation model of honesty produces a better understanding of the relationship between use of powerless language styles and peoples' ratings of speakers' credibility. Ultimately this research sets up future studies to test a model of information manipulation theory's maxims, quantity, quality, relevance, and

manner as mediating variables in the relationship between use of powerless linguistic components and evaluations of speaker credibility outside a courtroom scenario and with varying degrees of familiarity between the conversants. As the results support, appraisals of both speaker's character and competence are negatively affected by the use of hedges, hesitations, intensifiers, and tag questions, through perceived mendacity or manipulation. Additionally, inclusion of hedges hesitations, and tag questions while speaking can negatively affect ratings of both types of speaker credibility based on of the perceived relevance of the message.

CHAPTER VI Study Two

Rationale and Justification

Based on a previously conducted experiment (study one), this current study seeks to explore the relationship between the use of powerless linguistic cues (PLC), also referred to as powerless language style features, and perceived deceptions on evaluations of a speakers' credibility. Specifically, the first study presented a model with four dimensions of information manipulation (McCornack & Levine, 1992), based on Grice's (1975) maxims of conversational implicature and the cooperative principle, as mediator variables between speakers' use of hedges, hesitations, tag questions, and intensifiers and their speaker credibility evaluations from others. One overarching rationale for this exploration was directly stated by Hosman (2015) after he reviewed over thirty-five years of research on power of speech styles (POS) when he said, "future research might consider further exploring the links between Grice's conversational maxims and perceptions of power and dominance" (p. 230). Study two intends to replicate and broaden the scope of the model to include three additional contexts where the communicative exchange takes place and measuring the perceived amount of the PLC, not merely just its use in the exchange.

The first study established a link to courtroom witness testimony and subsequent credibility assessments of that witness, but that context alone is insufficient to generalize the model beyond the courtroom. The three new scenarios for messages include physician-patient communication, teacher-student communication, and politician-constituent communication. These three different environments provide a broader range of communicative context that will help determine the plausibility and versatility of the

previously proposed model. These three scenarios were chosen based on the applicability for the general population. It is hard to imagine a person who has not dealt with education and healthcare or felt the effects of policy-actions from the government. Another important justification for these scenarios is the potential magnitude of outcomes. Determining guilt in a courtroom, receiving a prognosis from a physician, being accountable to your public, or influencing an assessment for educational credit all have serious potential implications for quality of life, length of life, freedom, and economic viability. For instance, when power differentials are perceived by patients between themselves and their physician, whether the patient perceived greater power or less power, patients were more likely to lie than when there were no perceived power differences (McHan, 2017). This lying was correlated with satisfaction and a willingness to follow the physician's orders. Not following the orders can prolong treatment, or worse, lead to graver consequences. Knowing that the use of certain powerless language style features can influence a person's perception of another's power (Hosman, 2015), doctors may want to strategically select from these PLCs to enhance the perception of a power-even relationship between themselves and their patients. Furthermore, once physicians are aware of biases that may arise due to their patients' use of specific linguistic features, then they should be better suited to squelch those biases when determining a prognosis. Rapoport (1950) echoed this sentiment when he stated that our ignorance of linguistic cues, rather than the inevitable distortions of our language, was responsible for our poor functioning of linguistic maps. This study should help decrease our collective ignorance of these powerless language features.

Many other scenarios could have been selected to test this model (and depending on the outcome of this second study, they likely will need to be tested), but trying too many different scenarios all at once can introduce noise in the data. An increase in unsystematic error due to idiosyncratic differences between the participants in the study can prevent the materialization of the model from the outset. Certainly, this model might work well in a particular context but not others. Ultimately, introducing too many scenarios at the outset could thwart researchers' ability to establish a starting foundation from which more nuanced analyses could be gleaned. For these reasons, study two will only include these three new communicative scenarios.

Study two extends the same molecular-approach framework proposed in study one, but also attempts to measure the molar-approach framework by testing the collective perceived amount of the linguistic cues and not just the presence versus absence of the PLCs. Several early studies (Hosman & Wright, 1987; Wright & Hosman, 1983) consistently reported that the inclusion of a singular type of powerless linguistic cue would cause a speaker to be perceived as submissive; however, the inclusion of more than one type of powerless language style feature did not further reduce a speaker's perceived dominance. Ordinarily, individuals would use a mixture of these powerless language features in everyday conversations; however, before research can begin to unravel how a mixture of POS linguistic cues can additively affect speaker credibility, we must first understand how each individual cue may affect change in the various message scenarios. Johnson, Vinson, Hackman and Hardin (1989) astutely noted that combining multiple language features into a singular experimental message might produce significant results, but those results could be entirely due to one specific linguistic cue.

This study seeks to test specific effects of each PLC as well as the collective influence of PLCs.

The mere inclusion of PLCs is not the only qualification for affecting change in one's perceived power or dominance. The types and placement of hedges also influenced a message receiver's attitude about a speaker or their messages (Durik, Britt, Reynolds & Storey, 2008). In light of these findings, the molecular approach intuitively makes more sense, especially considering that the different types of powerless style linguistic features may interact differently with each of the different dimensions of deception; however, attempts at understanding the molar effects of PLCs is an obvious next step for this line of research which is why it will be included in this study's analysis.

The following paragraphs will define four POS style linguistic features – hedges, hesitations, intensifiers, and tag questions. Then literature germane to each message context/scenario will be reviewed before proffering testable hypotheses and research questions (RQs). For a more in-depth review of each linguistic feature and their ostensible connection to perceived deceit and effects on speaker credibility ratings, see study one. After proposing hypotheses and RQs, a detailed account of the methods and procedures of this study will be reported. Results of statistical analyses will be presented and discussed. Lastly, limitations and future research will be considered before the concluding remarks.

CHAPTER VII – Literature Review

Power of Speech Style Linguistic Features

When considering hedges, these cues can express uncertainty, but can also ameliorate the force of speech acts (Fraser, 2010). Hedges can take the form of single-word semantic hedges or longer lexical phrases (Jensen, 2008). Durik et al. (2008) reported that the positioning of hedges can have different outcomes when placed with data claims or with interpretation claims. Specifically, these authors determined hedges with data claims acted to undermine that claim while hedges placed with interpretation claims did not. These authors also termed hedges as *academic* or *colloquial*. Jensen referred to academic hedges as *discourse* hedges and colloquial hedges as *lexical* hedges (2008). Academic hedges are similar to discourse hedges where entire sentences and paragraphs can act as a hedge exemplified in the discussion of limitations in research papers. Colloquial hedges are generally not seen in academic reports (e.g., 'sort of' or 'kinda').

Hedges have been examined in written text formats as well as oral (Blankenship & Holtgraves, 2005). Prince, Frader and Bosk (1982) developed a taxonomy for the use of oral hedges in medical discourse. Drawing from Prince et al.'s work, Zhang (2021) reported that approximators (a subclassification of hedges) can "affect the truth value of the proposition, and [approximators] can be further divided into two subcategories: adaptors and rounders" (p. 56). These authors also reported hedge forms as two types of shields: plausibility shields and attribution shields. Plausibility shields exemplified how speakers could manipulate their full commitment to the truth. For our purposes, hedges are "words whose job is to make things fuzzier or less fuzzy" (Lakoff, 1973). For more

clarity, Brown and Levinson (1987) defined hedges as "a particle, word or phrase that modifies the degree of membership of a predicate or a noun phrase in a set… that is partial or true only in certain respects" (p. 145). It is clear that hedges are complex structures and are inherently linked to truthfulness evaluations even among different message environments and modalities.

As reported in study one, hesitations can be extrapolated as verbal disfluencies, response latencies, extended pauses, and prevarications. Like hedges, hesitations have also been subjected to multiple categorizations. In one such categorization, hesitations were identified by their function as topic avoidance strategies when being evasive or outright shifting the topic (Afifi, Afifi, Morse & Hamrick, 2008). Hesitation markers are words or phrases such as "I mean" or "let me think" that can roll back previous assertions (Areni & Sparks, 2005). Hesitations have also been operationalized in written form with the appearance of "dashes, parentheses, brackets, or ellipses" (Fandrich & Beck, 2012, p. 43).

Research on intensifiers have produced more mixed or inconsistent findings than hedges or hesitations. In one study individuals who used intensifiers were perceived to have more control of others than individuals who used hedges (Hosman & Siltanen, 2006). Conversely, an earlier study questioned the powerlessness of intensifiers as there was insufficient evidence to differentiate perceived power of speakers who used intensifiers vis-à-vis those who did not. Hosman (2015) summarily defined intensifiers as "words which increase the force of a statement" (p. 223). Hyland referred to intensifiers as boosters (2000). With the presence of such mixed results, it is currently unclear as to whether *intensifiers* should be classified as powerless linguistic features.

Tag questions are the last POS style language feature that this study explores. As the name implies, these types of linguistic features are usually brief interrogative phrases that tag along, usually at the end, of a declarative statement (Johnson, 1987). Their purpose is generally construed as confirming said statement (e.g., "Of course this is easily understood, right?") or decreasing the forcefulness of the declaration (e.g., "It is, isn't it?"). These tag questions do not always have a clearly stated interrogative phrase; Bradac and Mulac (1984) pointed out these language features could simply be a declarative sentence with a rising intonation. Since this research design will use written text for its experimental messages, the tag phrases will be directly stated in the experimental message vignettes.

Politician-Constituent Communication and Deception

It might be a sad realization, but politicians have notoriously been associated with mendacity (Barnes, 2005). Even more worrisome, some scholars have noted that the "objective of politics is power, not truth, while truth is only then acknowledged when it can advance the finality of power" (Albescu, 2016). Understanding these misgivings, constituents may presuppose that a politician is lying. How then do constituents determine if that politician is lying? Do cues or behaviors exist that the public may attune to, rightfully or otherwise, that can lead them to the belief the politician is not being *completely* truthful?

The impacts of politicians lying are important because "false information can have dire civic consequences, depriving the voters of the best information available (Bok, 1989), resulting in corrupt or incompetent governments (Hollyer, Rosendorff & Vreeland, 2019) and bad public policies (Stolberg, 2017)" (Davis & Sinnreich, 2020, p.

2). This is even more salient given the recent rise of "post-truth" populist political movements (Waisbord, 2018).

Politician-Constituent Communication and Linguistic Cues

Extant literature has corroborated that word choice can be altered in predictable ways when someone is being deceptive. This word choice variability was present even at an unconscious level of cognition (Dilmon, 2009). Benoit and Hansen (2004) argued when politicians use hedges, their constituents often change their impressions of that politician, usually for the worse. Hedging was found to be the most common avoidance strategy for politicians' spoken discourse (Taweel, Saidat, Hussein & Saidat, 2011). In written discourse such as transcripts of televised political debates in America, in Great Britain, in Australia, in Iran, and even in tweets (Elhambakhsh & Jalalian, 2015), offer corroborating evidence of the use of hedges, hesitations, and tag questions (use of interrogatives) when politicians try to manipulate the truth (Davis & Sinnreich, 2020).

Brewer (1999) noted that distrust of politicians may be more salient when constituents belonged to a different political party (read out-group). This was supported by Clementson (2018b) when he found that out-group members were more accurate at identifying when a politician dodged a question. Arguably, dodging a question could be seen as hesitation whether by concealing/omitting information or equivocating (Fiordo, 2010; Griffin, 2011). thereby potentially violating the relevance, clarity, or quantity cooperation principles of Grice's (1975) conversational implicature (which is three of the four mediating variables of information manipulation in this study).

When Butterfuss, Aubele and Kendeou (2020) examined source partisan influence and the use of hedges about scientific claims, they found participants whose faith in

institutions were higher ultimately reported lower belief scores for scientific sources' claims. This compounded with evidence that higher faith in institutions can influence an individual to more readily believe in conspiracy theories or misinformation (Garrett & Weeks, 2017) clearly shows negative impacts for society. Interestingly, Butterfuss et al. (2020) also found a correlation between conservative ideologies with higher faith in institutions. Given these findings, participants' political underpinnings should be included as a covariate in the analysis. Moreover, the participants' perception of the sources' political ideology should also be included.

Instructor-Student Communication and Deception

An alarming number of college students indicated they have been dishonest with their instructors (McCabe & Trevino, 1993); however, a review of public speaking textbooks demonstrated a deficiency of coverage for deceptive communication topics (Fiordo, 2010). In a study about the motivations and implementation strategies for students lying to their professors, Griffin, Bolkan and Goodboy (2015) found the most used method, as reported by the students, was falsification; but students also admitted to concealing relevant information (e.g., telling half-truths) and using emotionally laden expressions. Since hesitations may indicate a cognitive load (Vrij, 2008) whereby the interlocutor is selectively choosing what or how to phrase their utterance, conversational partners may interpret (be suspicious of) this action as a form of concealment. Likewise, hedges may be perceived as telling half-truths (or concealing half-truths). Desire to elicit emotional arousal from a message could be accomplished with concerted focus on language intensity and valence. Previous literature informs us that negative emotion words are used far more often by individuals when they are being deceptive than truthful

(Newman, Pennebaker, Berry & Richards, 2003) which could function as the language feature - intensifiers.

Credibility in a learning environment is generally understood as believability (Frymier & Thompson, 1992). Shared trust between instructors and students is essential for classroom environments' successful learning outcomes (Dobransky & Frymier, 2004). Students admitted they would engage in destructive practices like revenge or deception when perceived injustice occurred in the classroom (Chory-Assad & Paulsel, 2004a; Chory, 2007). For a review of classroom justice, see Chory-Assad & Paulsel, 2004b. When teachers become aware of (or are suspicious of) mendacity from students, they become more critical of future assignments and communications with that student. As Knapp (2008) recounted, studying deception is a central tenant of the mission of higher education – seeking truth. In order to prevent actual or perceived injustice in the classroom, research should focus on how certain linguistic cues relate to deception, and detection between a student and their instructor. Indeed, "Integrating deception theory into public speaking classes makes learning more relevant, beneficial, and real to students trying to communicate optimally in contemporary society" (Fiordo, 2010, p. 40). Moreover, one consequence of perceived academic dishonesty functioned as a normalizing agent for students (Harding, Carpenter, Finelli & Passow, 2004). Students who perceive other students as being dishonest were more likely to develop a sense that everyone *cheats*. This reinforces a spiral of academically dishonest behaviors. The key aspect in this notion is that the academic dishonesty could merely be perceived but not actually occurring proffering yet another reason why studying language features and their perceived effects, specifically in a classroom, is noteworthy. Teachers have been

encouraged to scrutinize potentially deceptive messages and students' excuses, especially when delivered in a computer-media channel (McHan, 2017), due to the strategic ability of message construction utilizing various language features.

Instructor-Student Communications and Linguistic Cues

The literature is more nuanced when looking at instructional environments and the use of linguistic cues and their outcomes. Extant literature is somewhat scarce for instructors' or students' explicit use of linguistic cues and their relationship to veracity. A few studies have focused on instructional environments such as academic tutoring (Porayska-Pomsta, Mavrikis & Pain, 2007) or workplace training. It appears that the truth-default is not well represented in the classroom (cf. Levine, 2014) due to this dearth of research focusing on student dissembling and PLCs. A lack of research on deception extends the narrative that deception does not *really* happen or is not common. Ostensibly, if deception does not really happen, then a truth-default seems obvious. Investigating and even teaching deception theory and praxis can prevent this "naively totalistic adherence" to truth and honesty bias by predisposing our students to "healthy skepticism" or "sane suspiciousness" (Fiordo, 2010). Some authors even used POS research to train students on when powerful/powerless language features were more appropriate or effective. Johnson (1987) coached students to be more forceful and direct in employment interviews but less powerful when politeness was more desirable for the situation like when comforting a friend. He also noted that students are generally less persuasive when asking for assistance, particularly when they used hedges or hesitations.

Verbal disfluency is negatively associated with evaluations of teachers' competence; and, trustworthiness is positively associated with evaluations of teachers'

character (Myers & Bryant, 2004). Hesitations are operationally defined as stumbles or extended pauses. Students reported their instructors are less desirable for employment and harder to listen to in class when their speech includes more verbal hesitations (Johnson, Vinson, Hackman & Hardin, 1989). When reading academic texts, students attuned to intensifiers more closely than hedges. Additionally, when peer-tutors used hedges, tutees learned more than when their peer-tutors used more direct language (Madaio, Cassese & Ogan, 2017). The use of powerless language features impacts impression formations, perceived deception, persuasiveness, and learning outcomes of students. However, this evidence is piecemealed from a cacophony of different studies and the findings are sometimes contradictory. No study to date has attempted a comprehensive review of all four of these linguistic cues when used by students.

Physician-Patient Communications and Deception

The use of PLCs is quite frequent in the medical field. Parascandola (2000) stated that uncertainty and tentativeness were a necessity within certain situations. Specifically, research in the science and health industry all have limitations that delineate when their findings may not be applicable or are only applicable under certain conditions (Schwartz & Woloshin, 2004). "How truthful patients are about disclosing relevant information prior to and following diagnoses is germane to an understanding of disease prevention and control" (Burgoon, Callister & Hunsaker, 1994, p. 444). This sentiment buttressed the notion that doctors must attune to the quality, quantity, clarity, and relevance of truthfulness of their patients' statements to provide the best possible care. Some research has indicated that doctors tend to assume that truthfulness, completeness, and accuracy of their patients' statements (Burgoon, Callister & Hunsaker, 1994). This is further support

for this study's aim to uncover if linguistic markers emphasize (or trigger) attention to different types of dimensions of deception leading the physicians to reject their truth-bias.

Physician-Patient Communication and Linguistic Cues

Eighty-five percent of patients reported concealing or equivocating with their doctors, while at least one-third claimed to lie outright some of the time (Burgoon, Callister & Hunsaker, 1994). Patients have increased reticence with speech when dissembling which can manifest as hesitations in their messages to prevent offering information that can discredit their previous messages (Buller & Burgoon, 1994). This is just one example of how increased use of powerless language features in a healthcare context can have profound consequences for society.

Linguistic agency can be strategically assigned in the creation of a message. These agentic assignments often are intended to strengthen the power or persuasiveness of that message (Zhang & McGlone, 2019). Use of certain hedges to distance oneself from the statement is synonymous with a linguistic agentic assignment. In a survey of more than forty countries, United States citizens were more likely to believe their own locus of control is greater than the effects of external forces. This widely held notion can increase the likelihood of patients choosing a linguistic marker (hedges) to control the linguistic agency of their messages. However, as previously stated, the use of hedges can be strategic or not and could result in a negative or opposite effect than intended. This linguistic agency control was seen in patients who used hedges to create "a view of the self that contrasts sharply with the active or accountable, assertive self" (Campbell & Futak-Campbell, 2014, p. 143). Thus, hedges are often accompanied with a culture of skepticism.

Similar to the political realm, hedges were identified as the main type of powerless linguistic cue used in a written health context (Fandrich & Beck, 2012). However, these authors did report that hesitations and tag questions were also used. In magazine articles written for a healthcare-focused publication, hedges were used significantly more often than in periodicals with a generic-focused publication and those hedges were employed even more frequently by female physicians than their male counterparts (Fandrich & Beck, 2012). These authors commented that these results may be due to the text being written rather than spoken. However, they opined that because hesitations and tag questions are rarer, their appearance in written text may be influential because norms are violated. Readers do not expect to see extended pauses written into a magazine article. Perhaps when these norms are challenged, individuals pay closer attention to the meaning and function of these cues. When doctors compiled notes of their visits with patients, they used words or phrases like "patient thinks" or "according to the patient" to indicate the source of the comment and the certitude of that statement (Lövestam, Fjellström, Koochek & Andersson, 2015). Hobbs (2003) argued that these linguistic devices help doctors evaluate the reliability of the patients' comments. Certain linguistically hedged verbs like *claims* or *denies* imply a smaller degree of trustworthiness (Lövestam et al., 2015). So, whether patients or doctors are using these linguistic markers verbally, nonverbally, in exchanges with each other, or in private notes to themselves, an inherent evaluation of truth occurs.

Hypotheses and Research Questions

Overall, these literature reviews highlight the potential for different outcomes across these three communicative scenarios. Here I propose specific hypotheses unique

to four different POS linguistic cues across three different message contexts with consideration of four different types of perceived dimensions of deception, and research questions as a gestalt approach for exploration of these theoretical constructs and their relationships.

H1: The scale creation of four dimensions of information manipulation will replicate the findings from study one by producing a factorially valid structure.

H2a: The exclusion of items measuring honesty/trustworthiness from the Speaker Credibility Scale will still produce a multidimensional theoretically sound factor structure for the speaker credibility construct.

H2b: Scale items measuring honesty will mediate the relationship between a speaker's use of PLCs and subsequent evaluations of that speaker's credibility.

H3: Suspicion will have a mediating influence between a speaker's use of PLCs and evaluations of a) perceived honesty and b) credibility of that speaker.

RQ1: How will the use of PLCs such as 1) hedges, 2) hesitations, 3) intensifiers, and 4) tag questions affect the evaluations of information manipulation of a) patients, b) politicians, and c) students?

RQ2: How will participants' ratings of information manipulation (quantity, relevance, clarity, and quality) relate to evaluations of each factor of speaker credibility when PLCs are used by that speaker?

H4: The more PLCs are perceived in a speaker's message, the worse the evaluations of information manipulation and speaker credibility will become for that speaker.

CHAPTER VIII – Methods

In the first study, a conditional process model with four parallel mediator variables was used to determine the relationship between using PLCs (IV or X) and audiences' perceptions of speaker credibility (DV or Y). That model supported all four deception dimensions as mediating the causal pathway between the independent variables and the dependent variables. This model's message context focused on courtroom witness testimony. In study two, three additional message scenarios are included to verify the generalizability and applicability of the model. These three new scenarios -- physician-patient, politician-constituent, and professor-student, -- were chosen due to their salience, significance, and commonality to the broader public.

Participants

Participants were recruited from communication courses at a large southeastern university, as well as online through social media posts, listserv announcements, and Amazon mTurk. Participants recruited from mTurk were offered a small financial compensation (25 cents) and some students were offered extra credit (extra credit varied according to the instructor that recruited the students). Approval from the Institutional Review Board was acquired before data were collected. IRB approval and voluntary informed consent documents are available in Appendix A. A total of 989 individuals initially participated in this research.

Sample demographics were collected on gender, education level, age, and political affiliation. This sample consisted of 202 (37.1%) males, 325 (59.6%) females, 9 (1.7%) other, and 7 (1.3%) preferring not to answer. Education levels were reported with 9 (1.7%) having some education, 62 (11.4%) having a diploma or GED, 157 (28.8%)

having some college, 8 (1.5%) having a technical or vocational certificate, 41 (7.5%) with associates degrees, 139 (25.5%) having a bachelor's degree, and 127 (23.3%) having some graduate-level courses or degree/s. The age range of this sample was 18 – 79 years old with an average age of 32.6 years old and a median age of 28 years old. An initial item on the Qualtrics survey asked if the participant was at least eighteen years or older. If they respond with no, they were redirected to the ending page of the questionnaire where they were thanked for their time. They never truly participated in the research. Political party affiliation was recorded with 154 (28.3%) Republican, 203 (37.2%) Democrat, 107 (19.6%) Independent, 31 (5.7%) Other, and 50 (9.2%) reported None as their affiliation.

mTurk Selection Criteria

Sampling from mTurk included qualifiers to participate such as having English as a first language and being a US citizen; though, participants did not have to be located in the USA at the time they took the survey. One last qualification for selection criterion for mTurkers was their "HIT Response Completion" percentages. Previous research indicated participants with less than 95% response completion introduced too much unsystematic error in the data. This "HIT Completion" percentage criterion does introduce a different type of error with sampling bias, but intuitively this approach increases systematic error rather than unsystematic, which is preferable for the research process (Babbie, 2012).

Data Cleaning

Cleaning the data consisted of several steps. Several insufficient effort response (IER) checks were included in the survey. One such check requested that participants

select the number six on a dial, while another questionnaire item was asked twice verbatim. Any participant who did not correctly select "6" or whose two answers did not match for the duplicated question were excluded from the analysis. The next step for data cleaning consisted of an open-ended question asking the participants to state the topic of the transcript they just read. This method was used to prevent mTurk bots from completing the study or being included in the analysis. Any participants that left this question blank or responded incorrectly were excluded from any further analysis. Lastly, any participant that took shorter than five minutes or longer than thirty minutes to complete the questionnaire were excluded from this study.

Participant/Respondent checks are ubiquitous in social sciences' experimental designs. These checks are particularly necessary when crowd-sourcing participation from mTurk. Procedures for these checks included reverse-worded items, specific request (e.g., asking participants to select the number six), duplicate questions (i.e., determining a 1-to-1 correlation of answers on the same question asked multiple times throughout the questionnaire), and open-response questions (i.e., participants' speculation about the focus of this study). The open-ended responses, aside from acting as a participant attention and comprehension check, has reportedly helped screen for the halo effect (Clementson, 2019). Any participants who failed the time requirement or other respondent checks were excluded from the analysis. It is also true that people who skipped an entire subscale were also excluded from the sample. After cleaning these data, 545 participants' answers were left for subsequent statistical analysis.

Procedures

Message Creation

Ecological Validity. Research on powerless linguistic cues has used many different modalities to test for message effects. Flemming, Feinkohl, Cress, and Kimmerle (2015) recounted how minor manipulations of "text-inherent" cues such as message tentativeness (i.e., hedging or tag questions) produced drastic differences in effects of respondents' perception of information. Due to these effects being previously identified in text-based message manipulations and to prevent interaction effects from hearing a speaker's voice in audio, or seeing their aesthetic quality in video, written transcripts were used for this study. A few other reasons that justified the use of written transcripts were to help prevent influence of gender, and the expedited use of a computer-mediated questionnaire modality.

A Qualtrics survey was developed with message vignettes unique to each of the scenarios. To maximize ecological validity, transcripts from a doctor training program and a televised town hall debate were obtained. The use of real transcripts should help prevent the findings from being an artifact of a contrived message (Jacobs & Brasher, 2008). These transcripts followed a question-and-response design similar to study one. Questions were kept brief to focus attention on the answerers' remarks.

In the physician-patient conversation the patient was complaining of pain while in the politician-constituent design, random audience members asked questions pertinent to the candidate's political ideology or policy agenda. Names were not used for the questioners or the respondents to control for various effects, such as gender, that could

confound the analysis. Titles were used on the transcripts (e.g., doctor, patient, politician, and audience member) to indicate who was speaking.

For the instructor-student scenario, a transcript was created based on an amalgamation of the primary investigator's previous experiences. This scenario presented a student asking for an extension of an assignment deadline. After the initial development, this transcript was given to other instructors and graduate assistants at various institutions to verify the authenticity or realness of the conversational interaction. Drawing from real-life experiences and checking with other experts satisfied face or content validity (Wrench, Maddox, Richmond & McCroskey, 2016). A few minor edits/suggestions were included in this transcript before creation of the manipulation conditions and pilot testing.

In order to statistically test for ecological validity, participants were asked four semantic-differential items with six-point responses. These items' responses were represented with the following opposite poles: realistic - unrealistic, appropriate - inappropriate, unnatural – natural, and authentic – inauthentic. After reverse coding, higher scores represented more agreement that the messages seemed real. Upon finding an acceptable reliable (α = .82, N = 539, M = 10.12, SD = 4.38), these four items were averaged together to create a single score for ecological validity. An additional analysis was conducted to determine if any statistically significant differences appeared between the PLC conditions, controls, or scenarios.

An ANOVA was conducted testing the differences between the control messages and the manipulated PLC messages. Results of the ANOVA indicated a significant overall model (F[4, 538] = 3.25, p = .012); however, post hoc examinations using

Tukey's HSD did not produce any significant differences between the control message or between any of the PLC conditions. We can safely assume that each of the messages were believed to be real by this study's participants. Moreover, we know that the introduction of PLCs does not result in less realistic messages which was expected given their use in everyday messages.

Given the relationship between honesty and Power of Speech Styles' (POS) language features, some balance was applied to the manipulation of speakers within scenarios. In the courtroom and town hall scenarios the PLC users were the politician and the witness. In the doctor appointment and classroom scenarios the patient and the student were the powerless language users. Truth-default theory (TDT, Levine, 2014) explains that very few exceptions exist where individuals do not automatically tend to assume truth from the message sender; two instances where these exceptions are true would be messages from politicians and situations that require explicit determinations of honesty, such as a witness providing testimony. So, the classroom and physician's office should have more of a truth-default while the town hall and courtroom should have less of a truth-default. This balancing can offer additional insight or boundary conditions to the truth-default phenomenon. This analysis will answer RQ1 in the results section of this dissertation.

In order to test this balancing approach, an ANOVA was conducted between the scenario types (physician-patient, politician-constituent, & professor-student) to determine any statistically significant differences on evaluations of honesty. Perceived honesty of the speaker was measured with four items (e.g., accurate, honest, truthful, authentic) on a six-point Likert-type scale indicating strong disagreement to strong

agreement. These four items revealed high internal consistency (α = .926), and so an average score of the four items was computed for perceived honesty. The omnibus test was significant (F[2, 536] = 30.42, p < .001), and post hoc results showed that the politician (N = 172, M = 3.68, SD = 1.08) was rated as less honest than the patient (N = 185, M = 4.50, SD = 1.23) or the student (N = 180, M = 4.57, SD = 1.26). The patient and student scenarios showed no significant differences from each other. This ANOVA tested message scenarios that included the control message (absence of PLCs) and all experimental conditions, so the differences reported here are not due to a specific linguistic cue manipulation. On the whole, politicians were seen as less honest. The witness testimony scenario data were collected in study one and were not able to be tested in this omnibus test. This balanced design of message context offers some preliminary support for TDT's situational contingencies.

Control vs Manipulation Conditions. Each of the control messages were free of any PLCs. Questions and responses were succinct and direct. All four messages were roughly one page each, single spaced to prevent length-of-message effects. The four control condition vignettes can be read in Appendix B. The control scenarios had the following word counts: physician - 370, instructor - 379, political - 380, and witness testimony - 356. The number of transactional exchanges were also balanced for control. The doctor spoke seven times while the patient spoke six. The instructor and the lawyer spoke six times as did the student and the witness. In the last scenario, the politician spoke seven times and the constituents took six conversational turns. Each of the manipulation conditions had between ten and thirteen uses of linguistic markers. These number of linguistic markers were chosen based on previous research (Johnson &

Vinson, 1990) and were shown to be a proper saturation (the number of linguistic markers needed to be salient in the conversation, but not too great to prevent the conversation from seeming realistic). These vignettes are provided in Appendix C with the linguistic markers highlighted for convenience.

PLCs and Manipulation Checks. Participants were asked to indicate their level of agreement with the following 6-point Likert-type statements in order to ensure that the participants did in fact perceive the intended manipulation. Two items measuring the hedges manipulation were, "This testimony made the politician/student/patient seem unsure," and "you perceived this politician/student/patient being doubtful." The two items measuring hesitations were worded, "This politician/student/patient's responses were full of hesitations," and "you perceived the politician/student/patient being reluctant." Next, intensifiers were identified with items such as, "This politician/student/patient's responses had exaggerations," and "you perceived this politician/student/patient embellishing." The last manipulation was tag questions with items worded as, "This politician/student/patient's responses were full of questions asking me to agree with them," and "you perceived this politician/student/patient asking you to confirm their story." Each two-item couple were tested for internal consistency and three of these manipulation checks were found reliable with Cronbach's alpha with the lowest alpha being .70 and the highest being .86 (Tag questions = .70, hedges = .86, and hesitations = .76) Therefore, each of these two item couples were averaged together to create a single score measuring each participants' perceived manipulation of the linguistic cue. The only caveat was the intensifier condition. Its two-item couple did not achieve an acceptable alpha level, so only the one item, "This politician/student/patient's

responses had exaggerations," was used as a manipulation check instead of a two-item average score.

A series of ANOVA tests were conducted to determine if each control message scenario was statistically different from its respective manipulation conditions (control message vs powerless hedges, control message versus powerless hesitations, etc.). All four ANOVAs showed significant differences between the control messages and their experimentally manipulated conditions (hedges: $F[1, 186] = 7.46$, $p = .007$; hesitations: $F[1, 193] = 71.65$, $p < .001$; intensifiers: $F[1, 225] = 4.08$, $p = .04$; tag questions: $F[1, 197] = 30.84$, $p < .001$). Post hoc examinations of these ANOVAs supported the claim that participants in the experimental conditions recognized these powerless linguistic cues more so than in the control messages. The following are the descriptive statistics for comparison of experimental vs. control message conditions: Hedges ($N = 99$, $M = 3.67$, $SD = 1.24$) vs. control ($N = 89$, $M = 3.19$, $SD = 1.16$); Hesitations ($N = 106$, $M = 4.60$, $SD = 1.01$) vs. control ($N = 88$, $M = 3.27$, $SD = 1.17$). Intensifiers ($N = 137$, $M = 3.26$, $SD = 1.33$) vs. control ($N = 89$, $M = 2.92$, $SD = 1.09$). Tag questions ($N = 110$, $M = 3.95$, $SD = 1.04$) vs. control ($N = 88$, $M = 3.15$, $SD = .95$).

Some argue that the manipulation checks with ANOVAs are not necessary in message effects studies (O'Keefe, 2003). The only differences in these messages were the added inclusion of a specific powerless linguistic cue so any reported differences in participants' answers would be attributed to those specific powerless linguistic cues. These ANOVAs provided extra reassurance that these participants did indeed see experimental messages as having greater amounts of powerless linguistic cues and thus control messages were seen as more powerful.

Piloting. All the scenario transcripts were piloted to check for readability and authenticity. Following Clementson's (2019) previous process, several doctoral graduate assistants were asked to read the scenarios as fast as possible and answer items without jeopardizing accuracy. The fastest time recorded was roughly five minutes. This time created a lower-bound limit for successful completion of participation in this study. All participants that complete their questionnaire faster than this time were excluded from the analysis. Additionally, this experiment requires initial reactions based on interlocutors' use of PLCs. Thus, an upper-bound limit of thirty minutes was enforced. This prevented the inclusion of responses from someone who read the messages and did not complete the questionnaire in one sitting which the participants were instructed to do. This limitation also prevented participants from reading the message, stopping, and then returning and re-reading the message to finish answering the items. Rumination and suspicion have been indicated as possible mediator/moderator variables in experimental designs of perceived deception (Clementson, 2019). Re-reading the message may strengthen the rumination processes or trigger suspicions. The mTurk participants were informed that participation in this study would net twenty-five cents only upon successful completion of these aforementioned criteria.

Measures

Covariables

Threat Severity Scale. Several covariables are tested in this design to assess state/trait characteristics' influence on the proposed model. Some of these variables are unique to the message scenario while some were applied to all conditions. For instance, an average score measuring predilections towards pain management prescription usage

and harms were included in the physician conditions. Conflation of pain management and opioid abuse may influence a participant's perception of a patient requesting pain management medication in the physician-patient scenario message conditions. Furthermore, participants' previous and current experiences with pain medication, whether from personal use or use by a close acquaintance, could also influence their perceptions of the patient's messaging. Therefore, *perception of threat severity* was measured using a modified version of a three-item scale used by McGlone, Bell, Zaitchik, & McGlynn III, (2013). These three items were modified by replacing "opioids" with "pain management medications." The reliability for this scale was previously found to be acceptable (α = .91). The three *perception of threat severity* items read, "Pain management medications pose a serious risk to me or my loved ones," "Pain management medications are potentially harmful to me or my loved ones," and "Pain management medications are a severe threat to me or my loved ones." These three items produced a sufficient internal consistency (α = .90) and were averaged together to recreate a single point-estimate value of threat severity to be included in an ANCOVA. If any of these three items were removed, the alpha coefficient worsened so all three were retained. These three items, as reported in previous research (McGlone, Bell, Zaitchik & McGlynn III, 2013) were again a strong indicator of the threat severity construct as related to pain management and not just opioid usage.

Three ANCOVAs were conducted to control for the effects of perceived threat severity on the three DVs (speaker credibility factors – character, competence, & sociability). Threat severity was not a significant predictor for any of the DVs: character (F[1,187] = 0.035, p = .852); competence (F[1,187] = 4.53, p = .607); and sociability

(F[1,187] = .948, p = .53). Thus, the perception of threat severity variable was not included in subsequent analysis or modeling.

Student Responsibility Scale. An individual's affinity or adherence for deadlines could alter their belief that a student presenting an excuse may be dissembling and thusly less credible. Shields (1979) analyzed the effects of excuses for a "failed event" on perceived credibility and impression formations of that speaker. In a study intended to replicate and extend Shields' work, Hale (1987) adapted and applied items from one of Shields' scales for a classroom environment. The "failed event" in Hale's study was missing an assigned deadline. Five items were pulled from Hale's study to help determine if participants would be predisposed to having negative thoughts about an excuse-provider as opposed to negative evaluations stemming from the use of PLCs.

Conceptually, these items measure beliefs about accountability or responsibility (Hale, 1987; Shields, 1979). The presence of an excuse (i.e., failed event), notwithstanding the presence of powerless language features, may act as an antecedent variable for influencing hearer's evaluations of said speaker. These five items measuring the *student responsibility* concept included in this study are, "the student should be expected to explain his/her behavior; the student should not be late with the assignment; the student should be punished in some way if late with the assignment; the student will probably miss another deadline; and the act of being late with the assignment is wrong." Each of these items were measured on a Likert-type scale with six-point responses represented by strongly disagree to strongly agree. Cronbach's alpha reliability was met (α = .729). These five items were then averaged together, and a single score was computed for inclusion in the model as a covariate.

When student responsibility was entered as a covariate in SPSS's PROCESS with the amount of perceived PLC as the IV, the five mediators of information manipulation and suspicion, and the character dimension of speaker credibility as the DV, the omnibus test was significant (F[7,112] = 11.979, $p.$ < .001), but the potentially confounding effect of student responsibility was not significant based on 95% CI (p = .203, CI = -.266 - .057). When the dependent variable was changed to the competency dimension of speaker credibility, the omnibus test was again significant (F[7, 112] = 14.297, $p.$ < .001) and student responsibility's influence was significant based on 95% CI (p = .013, CI = -.376 - -.045). The third dimension of speaker credibility, sociability, was significant (F[7,112] = 4.452, $p.$ < .001), but the relationship of student responsibility was not significant (p = .124, 95% CI = -.348 - .043). More analysis about this will be reported in the discussion chapter but given this lack of significant results for two of the three DVs, student responsibility was not included in further analysis.

Political Identification. Both party and ideological affiliation are important covariates for this current study. Clementson (2018b, 2018c, 2019) identified these variables' affects previously when considering how language is used to help politicians dodge questions. An audience member's own political affiliation and the perceived affiliation of the politician can alter one's perception of the believability of that politician's claims. In order to control for these potential effects, items measuring political party and ideological affiliation were included as covariates. The two items used for this covariate were, "I would describe my political ideology as…" and "What political party do you most closely identify with?" The political party item was measured with the following responses: Republican, Democrat, Independent, Other, and None. The political

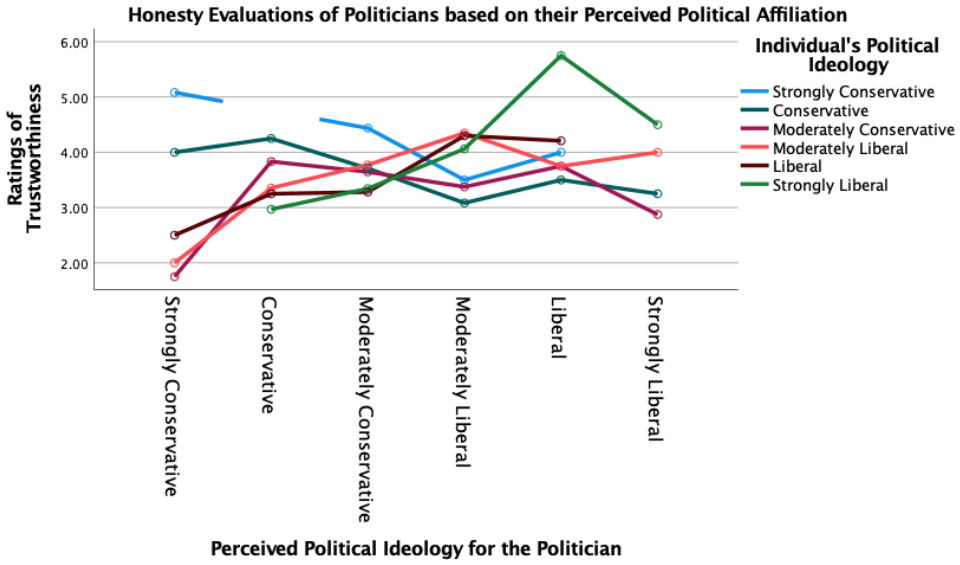
ideology item was measured with a six-point response ranging from “strongly conservative” to “strongly liberal.” Participants were also asked what political party and ideology they believed the politician most closely aligned. Participants whose perception of the politician’s party and ideology that were in line with their own were compared with participants whose affiliations were perceptually divergent from the politician. Based on in-group/out-group behaviors, there could be a difference in the truthfulness ratings of politicians along party lines. This covariate can help determine if these associated group considerations influenced the speaker credibility ratings more so than the PLCs of interest.

First, regression analysis using ones’ own political party ideology to predict the perceived political party ideology of the politician showed no statistically significant relationship (F[5, 172] = 1.512, p = .189). There was no obvious convergence or divergence of a politician’s perceived ideological positionality predicated purely on one’s own political ideological positioning. Next, a 6x6 factorial ANOVA including one’s own political ideology and the perceived ideology of the politician was conducted to compare differences in evaluations of that politician’s honesty. The overall model was significant (F[31, 171] = 1.855, p = .008), but when assessing the main effects of differences in honesty judgements of a politician based on one’s own political ideology, no significant difference was found (F[5, 171] = 1.898, p = .098), nor was the main effect which tested differences in honesty judgements of a politician based on a *perceived* political ideology of that politician (F[5, 171] = 1.143, p = .341). However, when assessing both one’s own political ideology and the perceived ideology of the politician as an interaction effect (F[1, 171] = 1.842, p = .02), a significant result became apparent. Neither main effect -

one's own political ideology, nor the perceived ideology of the politician - were significant, but their interaction was statistically significant with a partial Eta-squared effect size of .217. It appears that mediation may be occurring in some marginal ways; however, the covariates of political affiliation ostensibly moderate the relationship between hearing a politician's message and subsequent evaluations of that politician's honesty and/or credibility. See Figure 2 for a visualization of political affiliation's moderating effects on perceived honesty ratings of politicians. More on this relationship will be reported in the discussion section of this dissertation's study two (Chapter X).

Figure 2

Interaction Effects of Political Affiliation and Trustworthiness Evaluations



Pairwise comparisons of these groups for a simple effects analysis (only reporting significant differences here) revealed that for individuals who were strongly conservative and perceived the politician to be strongly conservative, ratings of that politician's honesty (M = 5.083, SE = .58) were greater/higher than individuals who considered

themselves moderately conservative (*M* = 1.75, *SE* = 1.004, *p* = .005), moderately liberal (*M* = 2.00, *SE* = .710, *p*. < .001), or liberal (*M* = 2.5, *SE* = .71, *p* = .006). No comparison was available for this group at the strongly liberal level. For individuals who reported being conservative (as opposed to strongly conservative or moderately conservative) *and* perceived the politician as conservative, their ratings of that politician's honesty (*M* = 4.25, *SE* = .502) were greater/higher than individuals who were strongly liberal (*M* = 2.969, *SE* = .355, *p* = .039). No significant differences were found at any level of self-political identification when the politician was perceived to be moderately conservative. When the politician was perceived as moderately liberal, individuals who identified as conservative (*M* = 3.083, *SE* = .410) rated the politicians as less trustworthy than individuals who reported being moderately liberal (*M* = 4.35, *SE* = .259, *p* = .01) or liberal (*M* = 4.300, *SE* = .449, *p* = .047*).* Moderately conservative individuals (*M* = 3.375, *SE* = .237) also rated moderately liberal politicians as less trustworthy than moderately liberal individuals (*M = 4.35, SE = .259, p* = .006). When the politician was perceived as liberal, conservative participants (*M* = 3.50, *SE* = .580) rated the politician as less trustworthy than strongly liberal individuals (*M* = 5.75, *SE* = .710, *p* = .015) and moderately conservative participants (*M* = 3.75, *SE* = .380) also rated those politicians as less trustworthy than strongly liberal individuals (*M* = 5.75, *SE* = .710, *p* = .014). Moderately liberal individuals (*M* = 3.75, *SE* = .710) also rated the liberal politician as less trustworthy than liberal participants (*M =4.208, SE* = .410, *p* = .048). No significant differences were at any level of the self-political identifications when the politician was perceived as being strongly liberal.

Figure 2 above and the pairwise comparisons showed three general trends: The more liberal an individual was the less they trusted conservative politicians, the more conservative an individual was the less they trusted liberal politicians; however, the more moderate and individual was, regardless of whether they were slightly more conservative or liberal, the less they trusted either extreme end of the political spectrum.

Lie Acceptability Scale. A covariable of interest to all conditions of this experimental design is an individual's own propensity to lie. Answers to the Lie Acceptability Scale (Oliveira & Levine, 2008) were used to assess differences in participants' speaker evaluations and perceived detection of deception. If lying is not considered too egregious of an infraction, then those individuals may not code certain linguistic cues as deceptive. In other words, the use of linguistic cues by a conversational partner may not trigger suspicion or rumination processes as drastically (or at all) compared to individuals that are less accepting of lying. This scale consists of eleven items whose form is a six-point Likert-type with poles ranging from strongly disagree to strongly agree. A few example items include "Lying is immoral," "Honesty is always the best policy," and "Lying is no big deal." A full list of the 11 items is available in Appendix D.

Cronbach's alpha was found to be reliable with this scale previously (Oliveira & Levine, 2008), and the internal consistency for this 11-item scale in this particular study was also acceptable ($\alpha = .85$). A new average score for each individual participant was computed from these 11 items and entered into an ANCOVA to disentangle any variance uniquely due to one's own tolerance for lying. In the output of between-subjects effects, the corrected model was significant ($F[10, 527] = 9.135$, $p < .001$), but the lie acceptance

covariate was not (F[1, 527] = 1.52, p = .218). When testing the relationship between the perceived amount of the powerless linguistic cue that was present in a message (IV) and honesty judgements (DV), lie acceptability was not a significant covariate. When testing the relationship between the perceived amount of the PLC (IV) and the three factors of speaker credibility (DV) – character (F[1, 535] = 2.543, p = .111), competence (F[1, 535] = .028, p = .865), and sociability (F[1, 535] = .004, p = .947), the lie acceptability covariate was not statistically significant across all three factors of the DV. At least for this study, a participant's level of lie acceptance did not account for enough variance in a statistically meaningful way to influence the outcome of the model, and thus it was excluded from any subsequent analysis.

Generalized Suspicion Scale. Lastly, trait suspicion has been the subject of numerous experiments and has found mixed results. The inclusion of two different scales of suspicion (Levine & McCornack, 1991; Millar & Millar, 1997) were used to prevent mono-operational measurement bias. Millar and Millar's study measured state suspicion and Levine and McCornack's Generalized Communicative Suspicion (GCS) scale measured both trait and state suspicions. Responses for these suspicion scales were collected for all message conditions. Example items from the GCS scale include, "I often feel as if people aren't being completely truthful with me," and "The best policy is to trust people until proven wrong." These items were Likert-type measurements with six available responses ranging from strongly disagree to strongly agree. A full list of these items is available in Appendix E. Millar and Millar's state suspicion item was modified to fit each of the message conditions. State suspicion for the professor-student condition was measured with, "How suspicious were you of the student's responses?" The other

two items used the same wording but include “politician’s” or “patient’s” responses rather than “student’s.” This single-item measure was a nine-point continuous semantic differential with poles of “not suspicious” to “very suspicious.” Using nine response options followed the example of previous research (Millar & Millar, 1997) in an effort to account for more variability given the fact that fewer items were included to represent the construct.

The 11-item Generalized Communicative Suspicion (GCS) scale reliability was acceptable (α = .842) for this sample, and an average score was computed for each participant. The single-item state suspicion scale (M = 5.03, SD = 2.56) by Millar and Millar (1997) was tested using a Pearson correlation with the computed average score of the GCS scale (M = 3.18, SD = .78) and the relationship was significant (r = .19, p = .046). This correlation would probably be even stronger if the only items measuring state suspicion from the GCS scale were include. Moreover, the GCS used a 6-point response scale whereas Millar and Millar’s item used a 9-point response. This correlation validated avoidance of mono-operational measurement bias through concurrent validity on two different scales that were administered at the same time. State suspicion was measured after reading the experimental inducements and so Millar and Millar’s item was included in the model as a mediating variable.

Gender Influence. Gender effects have been prodigiously examined in relation to POS research. These findings are much harder to sift through as the literature is rife with contradictions and disagreements. This study collected participants’ belief about the speakers’ gender to determine if differences might exist which could unduly influence the results. The messages created for these experiments did not indicate any specific genders

for any of the PLC users. However, participants could have still intuited (correctly or incorrectly) the gender of the PLC user which could be influencing evaluations of the user's honesty or speaker credibility.

A series of ANOVAs were run on this sample both including and excluding the control conditions. These ANOVAs tested for differences between evaluations of a speaker's credibility (DV – character, DV – Sociability, DV – Competence) and honesty (mediator – quality) when comparing the evaluators' gender or when comparing the perceived gender of the PLC user. There were no significant differences between men, women, and non-binaries' evaluations of speaker's character (F[3, 451] = .249, p = .862), speaker's sociability (F[3, 451] = .21, p = .889), speaker's competence (F[3, 451] = .56, p = .641), or a speaker's perceived honesty (F[3, 451] = 1.39, p = .245). When comparing the differences of a PLC users' perceived gender there were no significant differences between men, women, and non-binaries' evaluations of speaker's character (F[3, 452] = 5.23, p = .1), speaker's sociability (F[3, 452] = 1.05, p = .37), speaker's competence (F[3, 452] = 1.12, p = .339), or a speaker's perceived honesty (F[3, 452] = 2.44, p = .064).

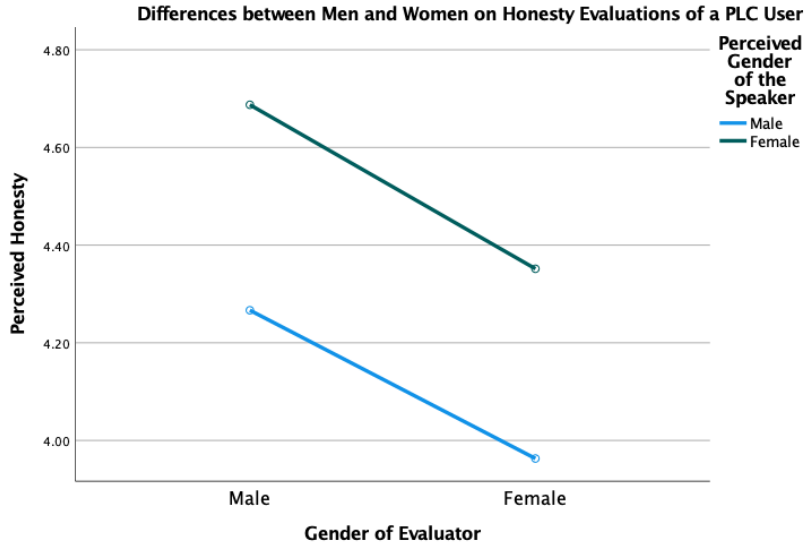
It would appear that a more succinct test of these covariates' influence could have been reported by including the evaluators' gender and the perceived gender of the PLC user as covariates in the mediation model except these gender covariables were measured as categorical instead of ordinal/interval. PROCESS cannot, as of yet, calculate multicategorical covariates when more than two categories are included (Hayes, 2013). However, when only including two categories (male vs. female) in a 2x2 factorial ANOVA (gender of evaluator x perceived gender of PLC user) significant main effects or

interaction (moderation) effects on differences in perceived honesty can be examined. The omnibus test was significant (F[3, 355] = 2.762, p = .042), but there were no significant main effects for gender (F[1, 355] = 2.274, p = .132), or perceived gender (F[1, 355] = 3.642, p = .057); and there were no significant interaction effects for gender by perceived gender (F[1, 355] = .006, p = .94). Figure 3 shows that the perceived gender of the speaker could possibly make a difference as that main effect was trending toward significance (p = .057). Visually, it appears that both men and women evaluated a speaker as more honest when that speaker was perceived to be a woman.

This same factorial ANOVA was conducted with speaker character, speaker competence, and speaker sociability as the outcome (DV) variables instead of perceived

Figure 3

Genders' Moderating Effects on Honesty Evaluations



honesty. The omnibus model for speaker character (F[3, 355] = 3.85, p = .010) was significant with a significant main effect for perceived gender (F[1, 355] = 6.15, p =

.014), but no other significant main effects or interaction effects surfaced. Regardless of the gender of the evaluator, PLC users who were perceived as being female were given more favorable ratings for speaker character. For speaker competence the omnibus test was not significant ($F[3, 355] = 1.3$, $p = .274$), thus no main effects or interaction effects were reported. Gender and perceived gender did not produce a noticeable difference in evaluations of speaker's competence. The last sub dimension of speaker credibility (DV) tested here was sociability and it too was not significant ($F[3, 355] = .152$, $p = .929$) so no main effects or interaction effects were reported. Gender and perceived gender did not appreciably change the evaluations of a speaker's sociability.

The previous analysis demonstrated that there was no need to include gender or perceived gender as covariates in the proposed model. The only truly significant difference (based on 95% CI) was when a PLC user was perceived as a woman, they were given slightly more favorable evaluations of speaker character (just one of three dimensions of the DV). The effect size, calculated with a partial eta-squared, for perceived gender was .017. This was further proof that gender did not really make a difference with respect to the speaker's gender or the hearers' perceived gender.

Independent Variable

Powerless Linguistic Cues. The independent variables of this model were identified by the inclusion of powerless linguistic cues (PLCs) in the experimental messages. For the initial analysis, the control conditions were dummy coded as one, and the experimental conditions were coded as a one-unit difference so the beta coefficient can determine the strength of the experimental change relative to the control (Hayes, 2013). This was accomplished with indicator coding by PROCESS in SPSS. Previously

in this methods chapter (see message creation section), the experimental manipulations and powerless status of these IVs were reported. Briefly, the control message conditions were reported as having less noticeable PLCs and thus were perceived as more powerful than any of the four experimental message conditions across any of the three message scenarios.

Multicategorical predictor variables can severely limit the amount of variability and predictive power when analyzing relationships between variables, especially when including parallel and serial mediator variables. The analysis of nominal IVs in PROCESS creates *relative direct* and *relative indirect effects* because the control variable is coded as zero and thus its' effects are embedded in the constants of the regression equations. This means that the reported coefficients of the experimental groups are in essence "standardized" which changes the interpretation of those coefficients. Instead of a one-unit change in the IV creating a unit change in the DV equal to that IVs' coefficient value (as would be interpreted with interval IVs), the coefficient produced with nominal IVs represent a relative change in the DV's value when comparing one experimental level of the IV to the control level of the IV. This limits interpretations to merely the presence or absence of the PLCs. This can be useful or even necessary depending on the research question (demonstrated in both study one and two presented here), but for study two, it would be even more useful to have continuous measurements of the amount of perceived PLCs. Therefore, some of the following analysis will use the manipulation check items to represent the amount of perceived PLCs that were present in the message as the IVs. This will allow for granular and nuanced analyses rather than just holistic.

Dependent Variables

Speaker Credibility Conceptualized. The dependent variable was measured using an amalgamation of McCroskey and colleagues' credibility scales (McCroskey, 1966; McCroskey & Teven, 1999; McCroskey & Young, 1981). In the 1981 article, these authors determine that speaker credibility had eight dimensions. Five dimensions had been previously established: sociability, competence, extraversion, composure, and character, while three new dimensions were added: size, time, and weight. McCroskey departed from Aristotle's categorization of ethos (read source image, or speaker credibility), which was originally subdivided into competence, character, and goodwill/intentions toward-hearer (McCroskey, 1966). McCroskey and Young (1981) argued that factor analytics should not be the basis for creating constructs stating, "It cannot be a substitute for the essential ingredient of the human critical capacity." (p. 33). Their support and reasoning was cogently presented when they argued that the inclusion of size, weight, and time as dimensions of speaker credibility made little sense conceptually even though they were factorially valid. Their sociability dimension included items such as friendly, cheerful, good-natured, warm, pleasant, and sociable. The competence factor included items like intelligent, trained, expert, informed, competent, and bright; while their character factor had virtuous, honest, unselfish, sympathetic, high character, and trustworthiness.

Interestingly, even back in 1981 the items of trustworthiness and honesty cross-loaded on sociability, competence, and character factors despite a principal component analysis with Varimax rotation to produce orthogonal factors. Moreover, McCroskey and Young eventually argued "that while theoretically there are three dimensions in the

source credibility or ethos construct, in terms of empirically based perceptions, these three collapse to two." (p. 33). Those two remaining dimensions were competence and character. These authors did not state goodwill/intentions was unimportant or unrelated. Quite the opposite, they argued that goodwill/sources' intentions were truly just elements of that sources' character. But, another look at the factor loadings structure with only those two remaining factors still showed the item "trustworthy" loading on both factors. This has provided an interesting conundrum. Trustworthiness and honesty are clearly related to multiple dimensions of source credibility – enter McCroskey and Teven (1997; 1999).

In 1999, McCroskey and Teven contextualized a reconceptualization of the goodwill/intent toward-receiver construct as a measurement of perceived caring. They argued trustworthiness, competence, and goodwill/intent were finally measured appropriately and with generalizability beyond the instructional classroom environment. However, these authors still noticed that pesky aforementioned conundrum. "Competence and trustworthiness … regularly loaded together on the first factor of an unrotated factor analysis, but could be forced into two factors by rotation. Second, when other measures (composure, dynamism) were measured, they *did not* <original emphasis> load on the first factor." (p. 93). They continued to opine and test their three-factor structure against ostensibly important outcomes of having high ethos, namely being believed or being liked. Why the hard shift toward competence, trustworthiness, and goodwill as the definitive factor structure when competence and trustworthiness would not breakout separately without the inclusion of sociability, composure, or dynamism? Why were believability and likeability (both conceptually and operationally linked to sociability,

dynamism, and trustworthiness) posited as the outcome variables instead of antecedent variables? Why did the items they used to measure trustworthiness include honorable, ethical, and moral? Could one be immoral or unethical, but still trustworthy? (e.g., a drug dealer could unethically break the law and immorally provide drugs to a customer, but that customer could trust that the correct amount of product is supplied.)

There are just a few constants throughout this evolution of speaker credibility factor structures. First, competence was relatively unchanged in both name and indicators used to create that latent variable. Second, trustworthiness is inextricably related to speaker credibility though its explicit position in the factor structure is unclear. Third, at least three factors comprise the speaker credibility construct. Lastly, two factors are focused on character, but one appears to have an inward orientation such as being virtuous, honorable, moral, or unselfish while the other seems to have an outward orientation such as being sociable, friendly, cheerful, good-natured, or pleasant. These considerations of the factor structure of speaker credibility and the antecedent/consequent positioning of highly related constructs were an impetus for the model's pathways proposed in this study.

Speaker Credibility Operationalized. Instead of relying on McCroskey and Teven's (1999) speaker credibility scale, several additional items from previous studies were included in the data collection process (see Appendix F for a complete list of items). Most of the items from the *trustworthiness* factor of McCroskey and Teven's scale was excluded to prevent multicollinearity between the information manipulation mediators and the DVs, which was the same consideration made for study one. Items were represented by a six-point Likert-type scale with poles being strongly disagree to strongly

agree. An EFA was conducted to determine factor structures of speaker credibility for this study. An EFA was chosen because of the aforementioned uncertainty of the items' relationship to each other vis-à-vis the theoretical construct of speaker credibility. Nineteen items were subjected to a principal component extraction with a Varimax rotation to produce orthogonal factors.

The initial test was set to determine factors with an eigenvalue of 1 or greater. All cross loadings were suppressed below .3. The KMO sampling adequacy for this initial factor reduction sequencing was adequate (.936) and Bartlett's test of sphericity was significant ($p < .001$) so the assumptions for this test were met successfully. All communalities were .44 or greater. An unrotated factor structure revealed three factors with a cumulative 61.46% of the variance explained. The iterative reduction process for removing items followed the steps outlined by Guvendir and Ozkan (2022). Any items not loading above .32 on the rotated factor structure were removed. Then items that were cross loading on two or more factors with a difference of less than .1 were removed as a whole. Next, any items that were cross loading on at least two factors where one of the loadings was greater than .4 were removed.

After the initial sequencing five items were removed and then the rotated factor structure was set to three factors rather than factors with an eigenvalue greater than 1. The variance explained increased to a cumulative 64.87% and the three factors still achieved an Eigenvalue of greater than 1. Then two more items were removed which retained the three factors and improved to 65.63%. The final step removed three more items which resulted in a three-factor structure with three items in each factor and 69.35% of the variance explained. The first factor retained items labeled

"unsympathetic," "selfish," and "sinful;" the second factor's items included "incompetent," "inexpert," and "untrained," while the third factor had "unfriendly," "uncheerful," and "bad-natured." Each of these three items within each factor were theoretically and conceptually linked which comported with McCroskey et al.'s advice to retain the "human critical capacity." The following labels were applied: factor one will be referred to as "character," factor two will be "competence," and factor three will be sociability. Cronbach's reliability coefficients and factor loadings can be seen in Table 4 below. The three items for each factor were averaged to compute a value for each sub-dimension of the speaker credibility construct.

This EFA supported H2a as the speaker credibility construct produce three factors without the inclusion of items measuring honesty. Each of these three factors' items were the same items established in the literature previously and loaded together in the same pattern as previous scales of speaker credibility. The first factor, referred to as Character, included the items "unsympathetic," "sinful," and "selfish." The connective link between these items is twofold: first, they represent a person's integrity and morals either for themselves or projected towards others. Focusing on concern for others was the argument made by McCroskey and Teven (1999) as a reason why speaker credibility should be three factors which countered their previous (McCroskey & Young, 1981) argument that there were truly only two factors. Second, all three of these items were included in the 1981 article in a factor labeled Character. Thus, it stands to reason that both arguments made by McCroskey et al. could be correct when excluding items that measured trustworthiness and honesty. A three-factor structure did replicate successfully and the

concept of concern for others (originally understood as goodwill) was retained for the speaker credibility construct.

The second factor called Competence included three items (inexpert, untrained, and incompetent) and all three of these items have been included in each of the previously mentioned studies' factor of the same name. It appears that Competence is perhaps the most stable of the three factors of speaker credibility. That does not mean that competence is the most important, rather these items just do not conflate with other dimensions of speaker credibility.

The third factor, called Sociability (friendly, cheerful, good-natured), does not represent moral character traits; they represent affect displays. These affect displays are projected outwardly which also shows concern for others (a vital component of goodwill as previously mentioned), but they also represent emotional valence. McCroskey and Young (1981) already established that honesty and trustworthiness changed the initial factor structure when items measuring sociability were included and that the sociability factor was a distinct component of speaker credibility. Just because sociability was not included in more recent factor structures of speaker credibility does not mean that it is not an important component. The measurement provided here replicates a statistically valid structure that comprehensively includes intelligence/experience, morality, concern for others, and avoids the confounding of trustworthiness items.

A simple retest of the factor structure that included the items of trustworthiness was conducted to see if honesty created a unique fourth factor of speaker credibility. For this EFA the KMO dropped to .89, but the cumulative percentage of the variance explained increased to 74%. The Eigenvalues and scree plot also confirmed a four-factor

structure (the fourth factor Eigenvalue was .973). The structure remained the same for the previous three factors and all honesty items loaded on a unique fourth factor with loadings of .83 or greater (Table 5). Knowing that truthfulness can be both a dimension of information manipulation and speaker credibility provided grounds for testing this latent variable as a serial mediator between the information manipulation mediators and speaker credibility (Figure 5). This will answer H2b (reported in the results chapter).

Table 4

Factor Loadings and Reliability Speaker Credibility w/o Trustworthiness

Factor Labels	Character (α =.78)	Competence (α =.76)	Sociability (α =.76)
	Coefficient	Coefficient	Coefficient
Item 1	Unsympathetic λ =.761	Incompetent λ =.625	Unfriendly λ =.771
Item 2	Selfish λ =.798	Inexpert λ =.805	Uncheerful λ =.785
Item 3	Sinful λ =.826	Untrained λ = .824	Bad-natured λ =.782

Table 5

Factor Loadings and Reliability Speaker Credibility w/ Trustworthiness

Factor Labels	Character (α =.78)	Competence (α =.76)	Sociability (α =.76)	Trust (α =.93)
	Coefficient	Coefficient	Coefficient	Coefficient
Item 1	Unsympathetic λ = .684	Incompetent λ =.528	Unfriendly λ =.778	Accurate λ =.831
Item 2	Selfish λ =.811	Inexpert λ =.750	Uncheerful λ =.779	Authentic λ =.866
Item 3	Sinful λ =.808	Untrained λ = .840	Bad-natured λ = .778	Genuine λ =.880
Item 4				True λ =.849

Mediator Variables

Information Manipulation. The mediator variables in study two used the same scale items from study one, which were originally used in McCornack et al.'s 1992 study. An EFA was conducted in study one on these twelve items with four preset factor

structures to test the validity of this scale. Each factor's items were measured using a six-point Likert-type scale with poles of strongly disagree to strongly agree. KMO sampling adequacy was acceptable as were the communalities values (study one). For study two, these four subscales of information manipulation were tested with a CFA to validate the unidimensional measurement test for the speaker credibility scale to be used in future research. The factor loadings and alpha reliabilities for the scales items of information manipulation are reported in Table 6.

Table 6

Information Manipulation Scale Items' CFA Statistics

Item	Factor Loading	Cronbach's Alpha	Means & St Deviation
Uninformative	λ = .863	α = .888	*M*= 4.19 SD = 1.41
Incomplete	λ = .871	α = .888	M= 3.95 SD = 1.53
Nondisclosive	λ = .704	α = .888	M = 3.80 SD = 1.53
Concealing	λ = .760	α = .888	M = 3.89 SD = 1.48
Distorted	λ = .876	α = .928	M = 4.04 SD = 1.43
Altered	λ = .831	α = .928	M = 4.22 SD = 1.38
Fabricated	λ = .835	α = .928	M = 4.21 SD = 1.43
False	λ = .857	α = .928	M = 4.37 SD = 1.32
Irrelevant	λ = .854	α = .913	M = 4.46 SD = 1.38
Inappropriate	λ = .813	α = .913	M = 4.61 SD = 1.31
Non-Applicable	λ = .850	α = .913	M = 4.52 SD = 1.35
Impertinent	λ = .819	α = .913	M = 4.34 SD = 1.34
Ambiguous	λ = .903	α = .943	M = 3.87 SD = 1.62
Indefinite	λ = .895	α = .943	M = 3.98 SD = 1.55
Vague	λ = .913	α = .943	M = 3.63 SD = 1.63
Obscure	λ = .898	α = .943	M = 3.90 SD = 1.56

This CFA supported H1 as the four factors were replicated from study one with a good model fit. The CFI was .977 and the acceptable cutoff is .9 or greater. The SRMR was .027 and it should be equal to or less than .1. An acceptable RMSEA for models has been reported as being .06 or less (Hu and Bentler, 1999). This RMSEA missed that cutoff by .003. Because RMSEA is extremely sensitive to minor misfit, it is a psychometrically sound practice to utilize a measure in hypothesis testing when misfit is indicated through RMSEA alone (Chen et al., 2008). The smallest correlation between these four factors was .835 and the largest was .914. As this new scale (IMS) is purportedly valid, these four information manipulation mediators were included in the model.

Invariance Testing

Given the design of this study, an important analysis conducted was invariance testing. There were two considerations, message condition (type of linguistic cue present in the experimental vignettes) and message scenario (physician, politician, professor) that could have contributed unique variances as an artifact of their groupings. To perform these tests, a three-step process was followed described by Cheung and Rensvold (1999). The message condition was used as the grouping variable to determine if the types of linguistic cues in the message could be compared to each other. The first step was to test the unconstrained model, known as configural invariance. This step demonstrated that the latent variables were formed with the same indicators regardless of the type of linguistic cue used in the experimental message (CFI = .911, RMSEA = .043). The second step in this process constrained the factor loadings of all the latent variables to be equal, known as metric invariance. This can be described as whether or not participants interpret the indicators the same way regardless of the linguistic cue in which they were randomly

assigned. As long of the model fit indices and the RMSEA did not change by more than .01, the metric invariance was considered acceptable. The CFI for the second step was .912 and the RMSEA was .042, thus the latent variable measurements were seen as invariant (Δ CFI = .001; Δ RMSEA = .001). The final step, scalar invariance, constrained both the factor loadings and the intercepts of the latent variables to be equal to determine if participants were using the scale in the same way. With invariance, data can be pooled, and comparisons can be made across subgroups. Again, the change in the CFI was only .003 and the change in the RMSEA was only .001. The data and the specified model were found to be invariant across message conditions which allowed follow-up analysis to be collapsed across linguistic cues and/or categorically compared with one another.

The second invariance test focused on the message scenario. When comparing the participants' responses in the physician-patient, politician-constituent, and professor-student scenarios the configural invariance obtained a CFI = .926 and a RMSEA = .043. The metric invariance produced a CFI of .925 and a RMSEA of .042. The scalar invariance produced a CFI of .923 and a RMSEA of .042. Seeing that the fit indices did not change by .01 or more at any step in this process also substantiated that the model was invariant across message scenarios. These results increased confidence that the types of linguistic cues and message scenarios did not disproportionately influence the participants' results and that comparative analysis across linguistic cue types or message context would be appropriate. It is still possible to find differences at these grouping variable levels even though the model fit was not statistically significantly altered. Without knowing that these groupings were invariant, there would be much less confidence in the appropriateness of the comparisons. Said differently, the subsequent

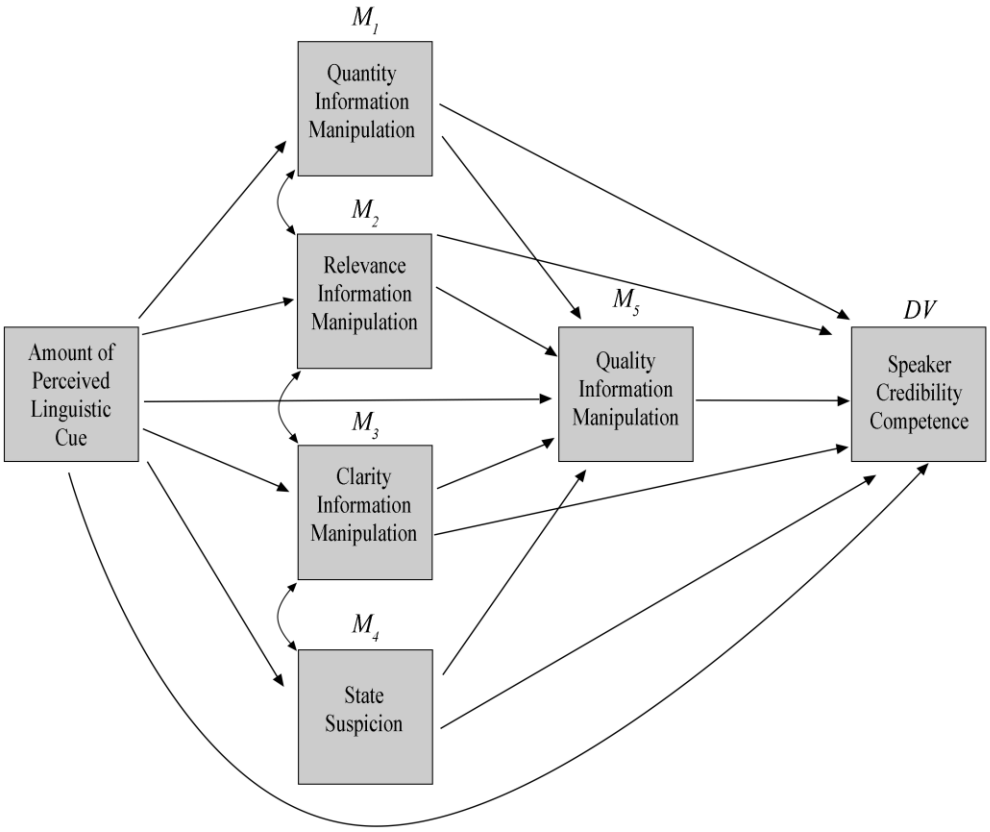
statistical tests no longer rely on implicit assumptions of various normalities because these assumptions were explicitly tested.

CHAPTER IX – Results

In study one the relationships between powerless linguistic cue criterion variables, perceived deceit mediating variables, and speaker credibility outcome variables were established. In study two these relationships were tested with the inclusion of multiple contexts or scenarios in which these messages and linguistic cues could appear. Furthermore, study two introduced additional variables to the model that were theoretically relevant including *state suspicion* as an additional mediator and covariates unique to each scenario like *student responsibilities*, *threat severity of pain management medication*, and *political affiliation.* Also included were covariates that were applicable to all message scenarios like *lie acceptability* and *perceived/gender*. The following mediation analysis was conducted using PROCESS (Hayes, 2013) as that program allows for easily identifiable comparisons and interpretations of indirect effects, the primary paths of import. Figure 5 visually depicts the model that was tested including all parallel and serial mediators. The covariates displayed were not included in the omnibus model testing, because they were not statistically significant. They were included in Figure 5 to demonstrate that these variables' influence was considered and tested.

To test the balanced approach design of the included scenarios and to answer RQ1, an ANOVA was conducted between the scenario types (physician-patient, politician-constituent, and professor-student) to determine any statistically significant differences on evaluations of honesty. Perceived honesty of the speaker was measured with four items (accurate, genuine, true, authentic) on a six-point Likert-type scale indicating strong disagreement to strong agreement.

Figure 4. – PLCs Effects on Speaker Credibility Through IMT and Suspicion Mediators



These four items revealed high internal consistency (α = .926), and so an average score of the four items was computed for perceived honesty. The omnibus test was significant (F[2, 536] = 30.42, p < .001), and post hoc results showed that the politician (N = 172, M = 3.68, SD = 1.08) was rated as less honest than the patient (N = 185, M = 4.50, SD = 1.23) or the student (N = 180, M = 4.57, SD = 1.26). The patient and student scenarios showed no significant differences from each other. This ANOVA included the control message (absence of PLCs) and all experimental conditions, so the differences here were not predicated any one specific linguistic cue manipulation (molar approach). On the whole, politicians were seen as less honest. The witness testimony scenario data

were collected in study one and were not able to be tested in this omnibus test. This balanced design of message context offers some preliminary support for truth-default theory's situational contingencies.

RQ1's primary goal was to understand the differences between the specific types of PLCs used (molecular approach) and their effects on honesty evaluations of a speaker. The data set was split by message scenarios and a one-way ANOVA tested the differences between the types of PLCs used in a message and their effects on evaluations of a speakers' perceived honesty. This produced three omnibus statistics: physician-patient (F[3, 165] = 2.214, p = .009), politician-constituent (F[3, 143] = 3.974, p = .009), and professor-student (F[3, 142] = 4.616, p = .004). Post hoc examinations of these three scenarios revealed that hesitations (M = 4.095, SD = 1.528) were worse for honesty evaluations of patients than intensifiers (M = 4.758, SD = .961, p = .069). Hesitations (M = 3.451, SD = .967, p = .025) and tag questions (M = 3.406, SD = 1.164, p = .019) were more harmful for measurements of honesty than intensifiers (M = 4.104, SD = 1.124) for politicians. Hesitations (M = 3.772, SD = 1.342) were worse for honesty evaluations of students than hedges (M = 4.726, SD = 1.164, p = .014) and intensifiers (M = 4.724, SD = 1.168, p = .008).

Study two moved beyond the same statistical testing as study one because a continuous predictor variable X (as opposed to study one's categorical predictor variable X) does not produce relative effects. The interpretations from study one were always comparing the effects of the use of a singular type of PLC in a message to a message that was free of any PLCs. That information was important and necessary in establishing the relationships and differences in evaluations of speaker credibility when *specific* PLCs

were present or not. For study two, replication and methodological extension included a more molar approach rather than just the molecular approach, which conveniently answered a limitation and suggestion for future research from study one. To be clear, each message still only included one type of PLC, but due to the invariant nature of the model with regard to linguistic cue or scenario, this analysis can answer not just based on the type of cue present but the salient presence of powerless cues.

Participants in each experimental message condition, of which there are twelve (4 linguistic cues x 3 scenarios), were asked how much they agreed that the linguistic cue was present. These measures were based on two six-point Likert-type items with poles of strongly disagree to strongly agree. For instance, in the hedges condition by physician scenario, participants were asked how much the patient's statement made them seem unsure/doubtful. The more strongly they agreed was equated with a greater recognition of that PLC. Logically, the more recognition of the presence of the linguistic cue allowed for more confidence that the effects on speaker credibility were in part due to PLCs.

In answering RQ2, the overall mediation model for study two tested the effects of the amount of perceived PLC (X) on speaker credibility ratings (Y) when operating through four parallel mediators (information manipulation quantity – M1, information manipulation relevance – M2, information manipulation clarity – M3, and state suspicion – M4) and one serial mediator (perceived honesty which is referred to as information manipulation quality – M5). This model calculated standard errors with the bootstrap method with 10,000 iterations to estimate 95% confidence intervals. Study one used the bias corrected bootstrap intervals because the criterion predictor variable was multicategorical rather than continuous. Pairwise contrasts were also calculated for each

specific indirect pathway to assess the degree of variance explained through each individual mediator relative to the other *specific* indirect paths. This model was tested three times because PROCESS cannot include multiple DVs and the current DV of speaker credibility had three unique factors – character, competence, and sociability.

The first of these three models looked at the character factor of speaker credibility (DV). The omnibus test for the total effect model was significant (R^2 = .29, F[1, 384] = 35.50, p < .001). The total direct effect of perceived PLCs was not significant, but several of the specific indirect effects were. Table 7 shows the path coefficients, standard errors, and the bootstrapped 95% confidence intervals. To better visualize these results, Figure 5 shows all non-significant pathways as dotted lines.

The effects of amount of perceived PLCs (X) on the character dimension of speaker credibility (DV) was mediated by the relevance, clarity, and suspicion mediators which were the statistically significant specific indirect pathways. Interestingly, none of the pathways through quantity mediator or the serial mediator of quality (honesty) were significant.

The second factor of speaker credibility tested was competency which also produced a significant omnibus total effects model (R^2 = .18, F[1, 384] = 84.12, p < .001). The direct effect of perceived PLCs on competency was also significant (β = -.22, SE = .04, p < .001). The significant *specific indirect effects* (as seen in Table 8) operated through the clarity mediator alone and the relevance, clarity, and suspicion mediators when operating through the serial mediator quality. Again, the quantity mediator was not significant through any pathways, nor were the specific indirect effects pathway from

PLC (X) to competency (DV) through the quality mediator alone. Non-significant pathways are represented by dashed lines in Figure 6.

Table 7

Path Coefficients and Total, Direct, & Indirect Effects of PLCs on Speaker Character

Model Summary	**R-sq**	**MSE**	**F**	***df*1**	***df*2**	***p* (sig.)**
Total Effect model	085	1.054	35.502	1	384	0.000
Total Direct Effect model	.405	.694	43.009	6	379	0.000
					95% CI	
	Path	**β**	**SE**	**P**	**BootLL**	**BootUL**
Total Effect of PLC on Char with Mediators	C	-.249	.042	.000	-.331	-.167
Total Effect of PLC on Char without Mediators	c’	-.032	.038	.395	-.107	.042
Direct Effect of PLC on Quant	a1	-.330	.051	.000	-.429	-.231
Direct Effect of PLC on Rel	a2	-.314	.046	.000	-.404	-.223
Direct Effect of PLC on Clar	a3	-.424	.056	.000	-.534	-.314
Direct Effect of PLC on Sus	a4	.869	.093	.000	.688	1.052
Direct Effect of PLC on Qual	a5	-.015	.030	.623	-.074	.044
Direct Effect of Quant on Char	b1	.069	.059	.243	-.048	.187
Direct Effect of Rel on Char	b2	.188	.066	.004	.059	.318
Direct Effect of Clar on Char	b3	.147	.058	.011	.033	.262
Direct Effect of Sus on Char	b4	-.058	.024	.015	-.105	-.011
Direct Effect of Qual on Char	b5	.059	.065	.356	-.067	.187
Specific Indirect Effects						
PLC on Char via Quant	a1b1	-.023	.021		-.066	.019
PLC on Char via Rel	a2b2	-.059	.022		-.106	-.019
PLC on Char via Clar	a3b3	-.062	.024		-.114	-.019
PLC on Char via Sus	a4b4	-.051	.026		-.105	-.003
PLC on Char via Qual	a5b5	-.001	.003		-.009	.005
PLC on Char via Quant, Qual	a1d21b5	-.002	.003		-.008	.002
PLC on Char via Rel, Qual	a2d22b5	-.008	.009		-.027	.009
PLC on Char via Clar, Qual	a3d23b5	-.006	.007		-.019	.006
PLC on Char via Sus, Qual	a4d24b5	-.005	.005		-.015	.005

Figure 5.

Model of Speaker Character Non-Significant Pathways as Dashed Lines

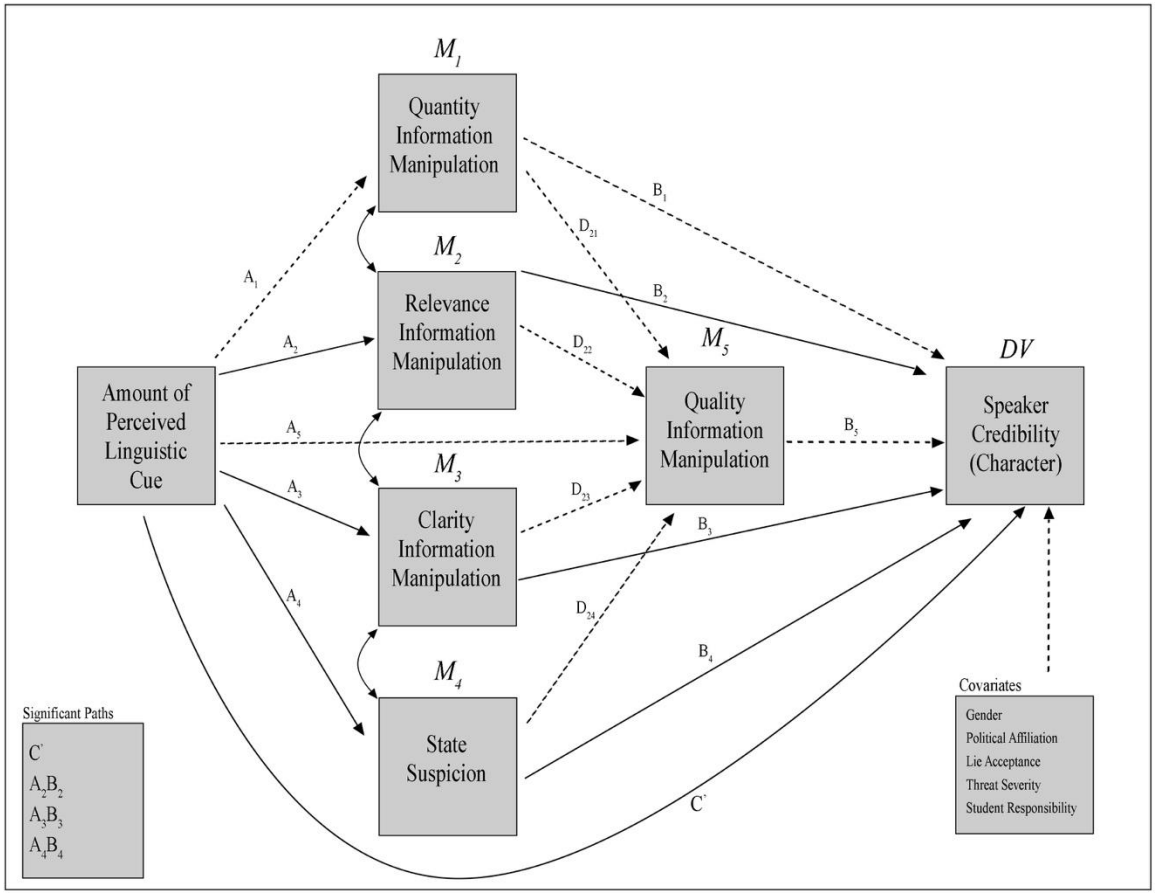
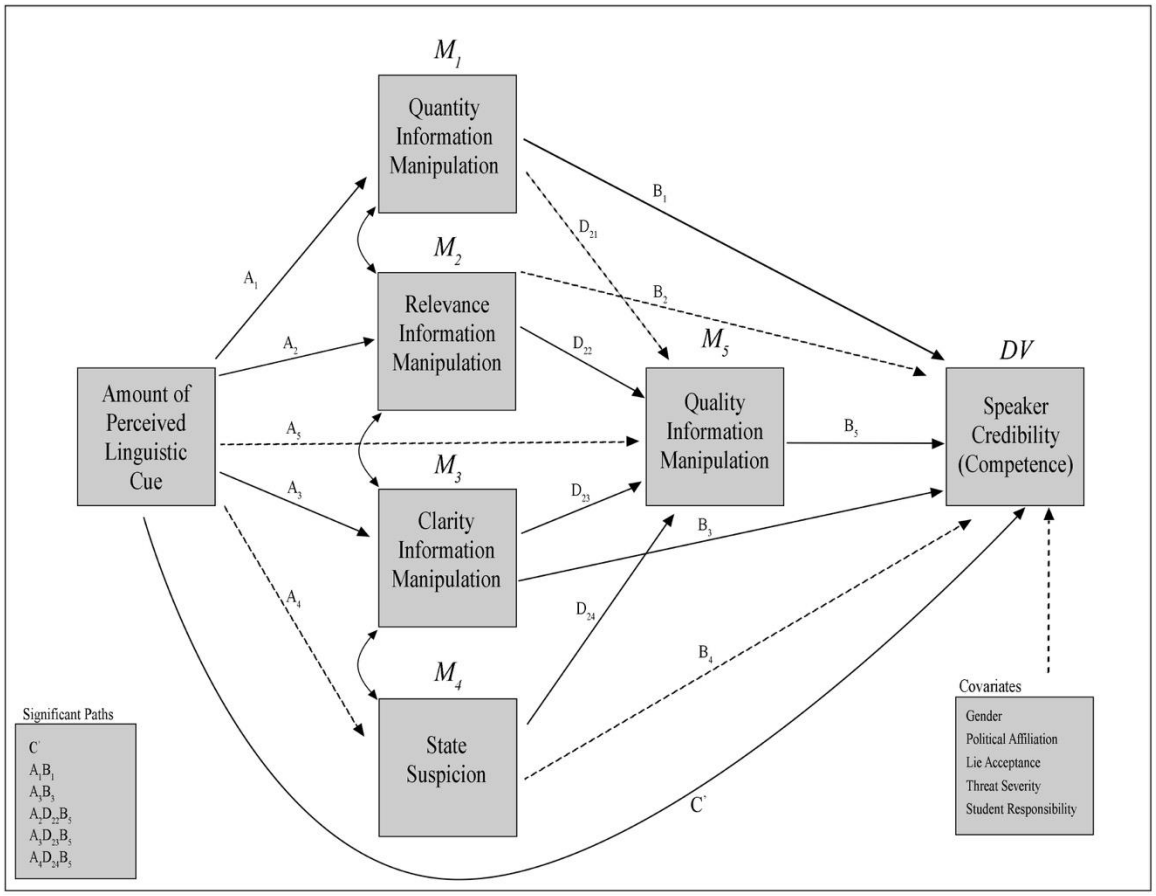


Table 8

Path Coefficients & Total, Direct, & Indirect Effects of PLCs on Speaker Competence

Model Summary	**R-sq**	**MSE**	**F**	***df*1**	***df*2**	***p* (sig.)**
Total Effect model	.179	.993	84.125	1	384	0.000
Total Direct Effect model	.362	.782	35.889	6	379	0.000
(PLC on Speaker Cred – Competence)						
					95% CI	
	Path	**β**	**SE**	**P**	**BootLL**	**BootUL**
Total Effect of PLC on Comp w/ Meds	C	-.372	.041	.000	-.451	-.292
Total Effect of PLC on Comp w/o Meds	c’	-.222	.040	.000	-.301	-.142
Direct Effect of PLC on Quant	a1	-.330	.051	.000	-.429	-.231
Direct Effect of PLC on Rel	a2	-.314	.046	.000	-.404	-.223
Direct Effect of PLC on Clar	a3	-.424	.056	.000	-.534	-.314
Direct Effect of PLC on Sus	a4	.869	.093	.000	.688	1.052
Direct Effect of PLC on Qual	a5	-.015	.030	.623	-.074	.044
Direct Effect of Quant on Comp	b1	-.160	.063	.012	-.285	-.036
Direct Effect of Rel on Comp	b2	.082	.069	.239	-.055	.219
Direct Effect of Clar on Comp	b3	.277	.062	.000	.155	.398
Direct Effect of Sus on Comp	b4	-.003	.025	.899	-.052	.046
Direct Effect of Qual on Comp	b5	.161	.069	.019	.026	.296
Specific Indirect Effects						
PLC on Comp via Quant	a1b1	.053	.024		.011	.103
PLC on Comp via Rel	a2b2	-.026	.022		-.071	.018
PLC on Comp via Clar	a3b3	-.117	.031		-.181	-.061
PLC on Comp via Sus	a4b4	-.003	.027		-.057	.049
PLC on Comp via Qual	a5b5	-.002	.006		-.015	.011
PLC on Comp via Quant, Qual	a1d21b5	-.005	.005		-.017	.002
PLC on Comp via Rel, Qual	a2d22b5	-.022	.011		-.047	-.002
PLC on Comp via Clar, Qual	a3d23b5	-.016	.008		-.033	-.002
PLC on Comp via Sus, Qual	a4d24b5	-.012	.006		-.026	-.001

Figure 6. – Model of Speaker Competence Non-Significant Pathways as Dashed Lines



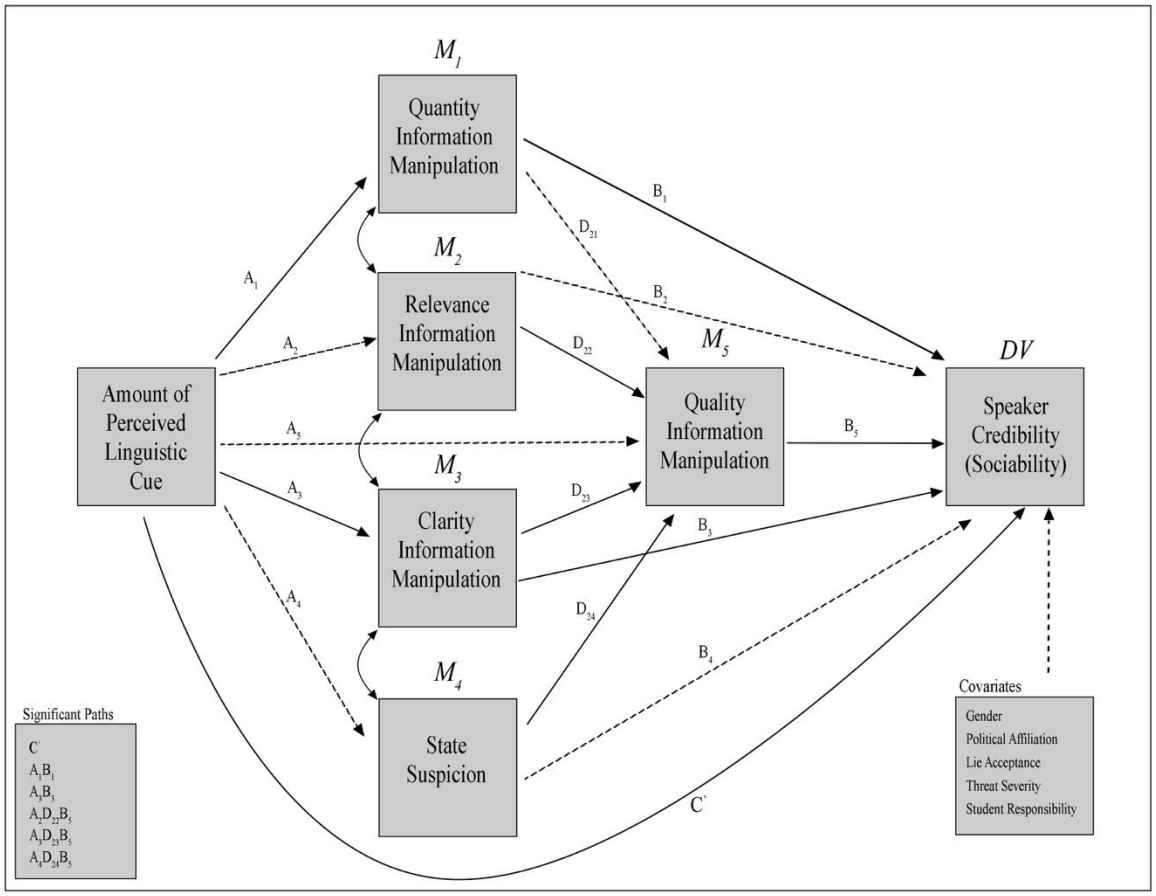
The third model tested the sociability factor of speaker credibility and its total effect model was significant (R^2 = .075, F[1, 384] = 30.974, p. < .001). PLC's direct effect (c') was also significant (β = -.139, SE = .045, p = .002, 95% CI [-.23, -.05]). The following specific indirect effects pathways (Table 9) were significant: through the quantity and clarity mediators alone; and the relevance, clarity, and suspicion mediators through the quality serial mediator. Interestingly, the coefficient's sign for quantity was positive. Once again, the quality mediator was only significant when influenced by the relevance, clarity, and suspicion mediators. Figure 8 demonstrates all non-significant pathways with dashed lines.

Table 9

Path Coefficients & Total, Direct, & Indirect Effects of PLCs on Speaker Sociability

Model Summary	**R-sq**	**MSE**	**F**	***df*1**	***df*2**	***p* (sig.)**
Total Effect model	.075	1.039	30.974	1	384	0.000
Total Direct Effect model	.145	.973	10.741	6	379	0.000
					95% CI	
	Path	**β**	**SE**	**P**	**BootLL**	**BootUL**
Total Effect of PLC on Soc w/o Mediators	C	-.231	.042	.000	-.312	-.149
Total Effect of PLC on Soc w/ Mediators	c’	-.139	.045	.002	-.228	-.052
Direct Effect of PLC on Quant	a1	-.330	.051	.000	-.429	-.231
Direct Effect of PLC on Rel	a2	-.314	.046	.000	-.404	-.223
Direct Effect of PLC on Clar	a3	-.424	.056	.000	-.534	-.314
Direct Effect of PLC on Sus	a4	.869	.093	.000	.688	1.052
Direct Effect of PLC on Qual	a5	-.015	.030	.623	-.074	.044
Direct Effect of Quant on Soc	b1	-.186	.071	.009	-.325	-.047
Direct Effect of Rel on Soc	b2	.039	.078	.609	-.113	.193
Direct Effect of Clar on Soc	b3	.131	.069	.059	-.005	.266
Direct Effect of Sus on Soc	b4	-.031	.028	.269	-.086	.024
Direct Effect of Qual on Soc	b5	.162	.077	.035	.011	.312
Specific Indirect Effects						
PLC on Soc via Quant	a1b1	.061	.026		.018	.120
PLC on Soc via Rel	a2b2	-.013	.024		-.059	.035
PLC on Soc via Clar	a3b3	-.055	.030		-.119	-.001
PLC on Soc via Sus	a4b4	-.027	.029		-.086	.030
PLC on Soc via Qual	a5b5	-.002	.006		-.015	.011
PLC on Soc via Quant, Qual	a1d21b5	-.005	.005		-.018	.002
PLC on Soc via Rel, Qual	a2d22b5	-.023	.013		-.051	-.002
PLC on Soc via Clar, Qual	a3d23b5	-.016	.009		-.035	-.001
PLC on Soc via Sus, Qual	a4d24b5	-.012	.006		-.026	-.001

Figure 7. – Model of Speaker Sociability Non-Significant Pathways as Dashed Lines



The following chapter will unpack these myriad and dense findings and offer some interpretations for why certain pathways did or did not work when expected to. Direct connections to theory will be offered to support these interpretations. Insights to the creation and validity of the Information Manipulation Scale and the exploration of the Speaker Credibility Scale will be shared. Brief descriptions of the limitations of the study and areas for future research will be described.

CHAPTER X Discussion

Information Manipulation Scale

The unidimensional measurement test (CFA) for the factor structure of the information manipulation scale (IMS) that was based on the EFA of the same items and factor structure from study one had good fit, makes conceptual sense, and when included in the mediational path analysis produced results that comported with a priori theory and previous findings. Suspicion should have worked as a mediating variable along with the dimensions of perceived deceit, and it did (Millar & Millar, 1997). The quality (honesty) factor of IMS should have been an antecedent variable that influenced the factors of speaker credibility, and it was. IMS was tested with multiple message environments such as health communication, political communication, educational communication, and jurisprudent communication. These environments' applicability to ordinary citizens' lives is obvious. Probably every American adult has interacted with or seen these environments. Given the ubiquity of these environments for society, they are indeed important contexts in which to consider message effects research. Understanding how perceived duplicity is structured and functions in the communicative exchanges of these various spheres is important.

Limitations and Future Research for IMS

Though great care was taken when selecting what types of messages were tested in these studies, IMS should be tested in many more environments. An obvious first step would be to see if this model works with the opposite speaker from each scenario. Would this scale still divide into its four subcomponents if the PLC users were the doctor, lawyer, constituent, or teacher? Further investigation and refining of this scale is

necessary to determine the boundary conditions in which it would still be applicable and valid. A clear second step would be to consider new message environments that have significant impacts in society's day to day lives such as communication related to organizational settings. New theoretical connections can be made using this scale to go beyond the scope of powerless linguistic cue analyses.

Perceived information manipulation has been shown to influence evaluations of employee satisfaction, effects of perceived employee deception on customer satisfaction (Jehn & Scott, 2008), supervisor-subordinate or coworker relationships (Carlson, Carlson & Ferguson, 2010). Lim, Chock, and Golan (2020) conducted a structural equation modeling which tested consumer perceptions of online advertising for weight-loss products. They found that an increase in perceived deception increased support for regulation by the state apparatus or government agencies. The use of IMS could help inform advertising and marketing strategists' understanding of how perceived manipulation of information might result in greater profit margins for a product or company. Specifically, including IMS in those models could help pinpoint whether those ads were perceived to be comprehensive, accurate, relevant, and clear. which would cut down the amount of time necessary to correct the ads (or produce them in the first place during market survey research).

IMS certainly could be tested in interrogation settings or interviews. Strategic messaging and word choice are predominant forms of impression management tactics that are scrutinized in job interviews. "Helping interviewers to better identify deceptive [impression management] tactics used by applicants may increase the validity of employment interviews" (Roulin, Bangerter & Levashina, 2015, p. 395). These authors

reported that interviewers did not perceive deceptive impression management tactics accurately (Roulin, Bangerter & Levashina, 2014). Information manipulation research presented here concerns others' perception of deception whether actual deception occurred or not. Using IMS in future studies can educate the public (and job applicants) on what types of information manipulations are perceived as the most egregious thereby allowing them to practice avoiding those message behaviors. Ultimately, studying perceived deception in this way can improve interviewers' evaluations of interviewees, as well as improve the fluency and efficiency of interviewees' language leading to better evaluations of honesty.

The origination of IMS's items measuring information manipulation were focused on interpersonal relationships; perceptional honesty in a romantic partner might have various effects at each stage of the relational development. Thus, interpersonal communication is another area of inquiry that could be benefited by the use of this newly developed IMS scale.

Truth-default theory (TDT) posits that humans have a tendency to assume truth in communicative exchanges with few exceptions (Levine, 2014). This current study offers additional support for that assumption but proposes new questions. Levine argued that truth is not the default in the political sphere or when explicit determinations of honesty are required; however, the mere use of PLCs does not necessitate an explicit determination of honesty, and yet their presence in a message can alter the truth-default. TDT may have too broad or overarching assumptions that should be scrutinized in future studies according to elements of the message including linguistic cues and message context. Levine (2022) recently argued that people more likely believed others that were

in their social circles. However, when study two tested political affiliations, results showed that moderate conservatives were less likely to believe strongly conservative politicians than moderately liberal or even liberal politicians. The same was true for moderately liberal individuals where belief was stronger for politicians perceived as moderately conservative rather than strongly liberal. Perhaps being a moderate on the political spectrum would indicate more identification with those aligned with political parties across the aisle than with those extreme representatives from the same political party, but future research studies could investigate this phenomenon.

Even in medical context like physician-patient conversations where truth-bias exists (Burgoon, Callister & Hunsaker, 1994), these PLCs can decrease perceived honesty. A new study should include medical doctors and practitioners as the primary participants to see how their perceptions of honesty and believability are affected by a patient's messaging. It would also be noteworthy to test how medical practitioners' messaging affects patient's perceptions of believability. If one does not believe their doctor, they might be less prone to heeding their advice, which can have grave consequences for patients' quality of life. TDT holds that intentions to deceive and triggering events for suspicion have subverted truth-bias (Levine, 2022), but why would a patient be suspicious of a doctor who took an oath to do no harm? Again, simple inclusion of PLCs in a doctor's messaging could alter the truth-default for a patient even when that patient's suspicion was not aroused. These several hypothetical examples of truth-bias rejection may help narrow the scope of TDT and thus should be explored.

Speaker Credibility Re-Examined

Trustworthiness has long been associated with a source's credibility, harkening back to the days of Aristotle. Over the years this trustworthiness element of speaker credibility has morphed from being included in certain factors like character (McCroskey & Young, 1981) to being considered the overarching descriptor of all the items in a single latent variable (McCroskey & Teven, 1999). The four-factor structure of speaker credibility (analyzed for H2a) did show that trustworthiness could be a unique factor along with character, competence, and sociability; however, its relationship with each of those three factors seems to be one of mediation. In future studies the continued inclusion of trustworthiness as a dimension of speaker credibility, while conceptually and theoretically valid, should carefully consider the placement of that variable. This argument is evidenced by the support for H2a and H2b.

Future Studies of Molecular vs Molar Approaches

RQ1 asked about the differences in honesty evaluations for patients, politicians, and students when specific linguistic cues were included in their messages. Hesitations were by far the most consistent PLC producing negative effects on a speaker's perceived honesty. Hesitations decreased the honesty evaluations for patients, politicians, and students, more so than intensifiers. Additionally, intensifiers did not hurt honesty judgements as much as tag questions did for politicians or hedges when used by students. This molecular approach has helped determine that the removal of hesitations from one's language style should be prioritized. Intensifiers seem to be the least detrimental so after focusing on hesitations, individuals should try to avoid hedges and tag questions.

Discussion of intensifiers have fluctuated drastically in previous research, but several studies have argued that intensifiers were either not perceived as powerless in a speaker's message (Bradac & Mulac, 1984), or did not negatively affect that speaker's credibility ratings (Wright & Hosman, 1983). Similar results were apparent here insofar as intensifiers were not significantly different than control messages in relation to a speaker's perceived honesty, character, competence, or sociability (at least not when collapsing across different message environments like healthcare, politics, or education). Sufficient evidence exists to continue analyzing this PLC from a molecular approach, but not from a molar approach. It may be true that in isolation and/or with varying amounts of the use of intensifiers that alternative outcomes are discovered; however, people do not tend to use a singular type of PLC in their speech patterns. Precise theoretical justification for future studies using the molecular approach is warranted. When holistically considering that intensifiers were the least detrimental PLC as compared to hedges, hesitations, and tag questions, intensifiers should not be included in powerless linguistic cue research.

The lack of significant statistical findings for hedges is at first perplexing. Several published studies have consistently reported the deleterious effects of hedges on speaker credibility, but as the old adage goes – context is everything. Hedging most often creates a feeling of uncertainty, but Jensen (2008) found that hedging improved perceived honesty of news reporters' and scientists' claims about cancer. Ostensibly, Jensen's findings were due to the perceived expertise of the doctors or integrity of the journalist. Doctors and journalist were not perceived as being contrarian or "playing devil's advocate" with the use of hedges, rather they were trying to be more precise. Paradoxical

though it may be, hedges can create positive-framed uncertainty or negative framed uncertainty depending on the expertise of the speaker. Results from study two showed that hedging was indeed perceptually salient in the messages, but did not result in changes to perceived honesty, character, competence, or sociability. Two reasons for these findings could be a result of limitations of this study. First, the sampling power could be somewhat low, and second, discourse hedges were not tested.

Regarding sampling power, it is much less likely to find the hypothesized outcome with inadequate power. Assuming that hedges do not negatively affect evaluations of perceived honesty and speaker credibility from these findings could result in a type II error. Conversely, when finding statistically significant results with underpowered sample sizes does not increase the likelihood of committing a type I error. Repeating this experiment with greater sampling power would help answer this question.

Limitations and Future Research of Lexical Hedges

As to the second consideration of discourse hedges, in Jensen's 2008 study, scientists reported boundary conditions for their claims, much like those found in discussion sections of scholarly articles. The sciences are governed by healthy skepticism and falsification principles, which is why caveats to scientific findings are hedged. This practice allows for continued inquiry and growth with increasingly nuanced analyses. These in-depth analyses cannot possibly be hedged adequately with lexical hedges. The limitation germane to this study is the exclusive use of lexical (singular word) hedges. Continued exploration of hedges, including lexical and discourse, and demarcating their effects, is necessary for future research. These future inquiries should also continue the use of both the molecular and molar frameworks.

Speaker Credibility, Information Manipulation, and PLCs

RQ2 was tested by a multiple parallel and serial mediation analysis. The researcher tested models that included all the mediating variables, which concomitantly answered H2b and H3. PROCESS in SPSS computed these statistics with model 80 which allows for multiple parallel and one serial mediator to follow (Hayes, 2013). The following paragraphs provide interpretations of the statistical output and describe limitations while offering future opportunities for scholarly inquiry. These interpretations will be offered for each dimension of speaker credibility.

Speaker Character. The Character model's non-significant direct effects (see Figure 6 above) indicated that the use of PLCs did not contribute as much influence as the indirect mediated pathways through perceived information manipulation of relevance and clarity or through an indirect mediated pathway of suspicion. This partially confirmed H3 that suspicion should be included as a mediator, but even more importantly, the quality mediator (perceived honesty) was not significant through direct, indirect, or serial mediated paths meaning perceived honesty is not a mediating variable when considering character. For character, evaluations were affected by the use of PLCs because they engendered suspicion in the hearer and made the speaker sound less relevant and clear. However, the use of PLCs did not necessarily hurt a speakers' character directly as a result of looking less honest. Expectancy violation theory could provide a rationale as the theory was expanded to include general involvement violations and not just violations of nonverbal behaviors (Burgoon & Hale, 1988; Kalman & Rafaeli, 2010). This explicit connection to theory will be discussed below as it relates to all three factors of speaker credibility.

McCroskey et. al's (1966, 1981, 1999) speaker credibility scales have consistently conflated trustworthiness and character. If these two concepts were so similar that they belonged in the same factor of speaker credibility, then substantial multicollinearity should exist between the honesty mediator and the character dimension of speaker credibility (DV). Violating assumptions of multicollinearity in a mediation model would produce significant statistical relationships between the mediator and the consequent variable. The lack of significant findings here offered additional support for the reconceptualization of the speaker credibility construct and this study's newly proposed factor structure (H2a). Speaker character is related to speaker trustworthiness, but these factors are not the same. Remember, a drug dealer's character could vary in certain ways, but that individual could still be trustworthy.

A practice in the medical community exists, known as slow coding, wherein a doctor makes a determination that a patient (who is usually incapacitated and has given medical power-of-attorney to a family member or friend that will not authorize a DNR) should not be responded to as fast by medical staff, or should be given a half-hearted attempt at CPR when resuscitation is needed (Mercurio, 2011). Doctors' expertise is generally deferred to in high-stress moments or emergencies, like when a decision can have grave implications for the patient post-resuscitation. Performing CPR on neo-natal infirmed infants or elderly patients can be traumatic to perform as a staff member or to watch as an onlooker. CPR can cause new medical emergencies that threaten the viability of life or severely hamper the remaining quality of life; thus slow coding can be communicated between medical practitioners so as to not say the icky part out-loud in front of the patient's guests. The ethical support for slow coding is still being debated

within the medical profession, but several medical ethicists have argued that slow codes are not just acceptable, but necessary (Meyers, 2021). After listening to a doctor's description of and agreement with the practice of "slow-coding," participants asked about that doctor's character might respond with reservations about the morality or ethical uprightness of that doctor; however, those same participants might recognize the truthfulness of the doctor's description of the new medical emergencies that stem from the act of resuscitation (punctured organs, zero brain activity, additional reliance on life-assisting technologies, etc.). For another example, Oregon's Death with Dignity laws provide a similar circumstance for comparison. People may think that doctors who would engage in the practice of consensual euthanasia are less moral or virtuous or are downright sinful, but they can still trust that doctor's messaging about the medical procedure and its legality.

Speaker Competence. Competency was the next factor of speaker credibility (DV) that was reported. This factor had a significant direct effect (c') which means that merely using PLCs in a noticeable way can decrease one's competency as perceived by others. People are not necessarily less intelligent because they use PLCs, but it may appear that way to others when using too many utterances of these PLCs. In one instance this negative competency consequent could be because of a lack of perceived clarity in the message as the clarity mediator was a significant specific indirect effect on its own. Furthermore, the use of these PLCs when operating through the relevance, clarity, or suspicion mediators but then serially through the honesty mediator (inducing feelings of dishonesty) led to lower scores of competency. The specific indirect effect of the honesty mediator alone was not significant.

Here again is evidence that honesty should not be included in the speaker credibility construct (H2a) unless it is placed as an antecedent variable in a serial mediation analysis. If trustworthiness and honesty were folded into one of these three speaker credibility factors, then scholars could miss honesty's mediating effects on each of the other unique factors. H3 was also partially supported again as suspicion was a significant mediator of speaker competence when enacted through the honesty mediator, but not necessarily on its own. When all other mediators are held constant, suspicion did not effectively predict negative evaluations of competence until the cumulative effects of perceived honesty were included serially, partially answering RQ2 (This one finding also partially supports H2b, H3, and H4).

The competency DV showed a non-significant relationship for the honesty mediator when not operating in serial mediation through relevance, clarity, and suspicion. This strengthens the claim for the proposed model where honesty is not merely another parallel mediator with the rest of the information manipulation and suspicion mediators (partially answers RQ2; partially supports H2b, H3, and H4). The perceived amount, relevance, clarity, and induced suspicion of information presented can predict the perceived honesty of that information and result in detrimental effects for evaluations of speakers' competence.

Speaker Sociability. The third and final factor, sociability, provided even more evidence of the nuanced nature of source credibility. This factor historically referred to how likeable someone was, which is still true for this study as it was measured with items such as friendliness and cheerfulness. Intuitively, the more likeable someone is, the more probable it is that others would enjoy their company and want to be around them. The

significant direct effect between the level of PLCs perceived and one's sociability score can mean, prima facie, people do not want to listen to or converse with individuals who use too many hedges, hesitations, intensifiers, or tag questions regardless of induced suspicions or honesty evaluations. This idea can easily be understood when considering conversational pet peeves. Society is littered with examples of stereotypical characters who use the word "like" or "right?" too much. Hedging too much in your language can cause your audience to feel uncertain about where you stand on a particular issue; hedging could also present as verbosity where the conversational partner feels excluded, or uncomfortable due to conversational turn-taking norms (Wiemann & Knapp, 1975) being violated. It could also be argued that it is too taxing to keep a conversation going with someone who uses too many verbal fillers (i.e., uhms, ahs, errs) or extended pauses that are tantamount to hesitations.

A similar pattern of specific indirect effects emerged for the sociability factor as the competence factor. For PLC users, quantity and clarity were significant mediators of sociability scores; and relevance, clarity, and suspicion, when operating serially with the honesty mediator, were also significant (partial answer to RQ2; partial support for H2b, H3, and H4). The use of PLCs hampered perceived clarity of the message (indirect effect) resulting in less favorable scores on sociability; moreover, less clarity led to a decreased rating of trustworthiness (serial indirect effect) which also resulted in less favorable scores on sociability.

The indirect effect of clarity decreased ratings for all three factors of speaker credibility, while clarity serially with honesty's indirect effect only decreased scores for competence and sociability. Relevance and honesty were serial mediators for sociability

and competence, but relevance on its own was a mediator for character. These results showed that a perceived lack of clarity had the greatest gestalt effect on speaker credibility and relevance comes in at a close second which comported with previous findings at least for the classroom context (Bolkan, Goodboy & Kelsey, 2016). The next paragraph explains the relationship between quantity and sociability.

After looking at the significant specific indirect effects of PLC on sociability through the quantity mediator, clearly the coefficient's sign is not the same as the rest of the pathways. This result is an artifact of the multiplication of the a4 pathway coefficient and the b4 pathway coefficient. A one-unit increase on the perceived PLCs (X) creates a negative a4 regression coefficient predicting the amount of information manipulation (M1). As the amount of information manipulation increases by one unit (M1), the amount of change in sociability (Y) is equal to the b4 coefficient which in this case is also negative. The product of these two coefficients is the specific indirect effect of PLCs on sociability through the quantity mediator. In other words, the more PLCs were noticed in a message resulted in less agreement that the message was complete ("a" path). The more complete a person's message seems the less sociable that person appears ("b" path). At first this seems contradictory but look to the previous analysis about violations of conversational turn-taking from the direct effects (c'). In an effort to provide more information, a person might need to talk at length (e.g., using too many superfluous intensifiers, hedging with longer descriptive statements, using too many hesitancy pauses or verbal fillers due to increased cognitive load, or using too many unnecessary faux interrogatives, like tag questions) thereby inadvertently (or purposefully) hogging the conversation, losing the conversational partner's interest, or causing the partner to attune

to syntactic irritants which, in turn, might make the speaker less desirable to be around (i.e., less sociable).

Future Research for Speaker Sociability. Hayes (2013) argued that when the "a" path coefficient and the "b" path coefficient were both negative that caution should be taken when interpreting the now positive "ab" path due to the nature of multiplication where two negative values always becoming positive. He surmised that an absolute value of that coefficient should be interpreted according to a theoretical explanation. The interpretation provided just now does not change if an absolute value approach is applied. The more a PLC is perceived in a speaker's message, the less likable that speaker becomes. Researchers should experiment with the length of the message and the amount of time it takes to deliver a message (as a result of the inclusion of PLCs) to see if this interpretation is valid.

Theoretical Connection and Explication

Expectancy violation theory (EVT, Burgoon, 1978) started out as a theory about nonverbal communication and societal norms, but has morphed over the years to include verbal components. "The basic thesis of the model is that there are circumstances under which violations of social norms and expectations may be a superior strategy to conformity." (Burgoon and Hale, 1988, p. 58). These authors continued to explain the, "scope of the model remains indeterminant, having been applied to manipulations of single nonverbal cues …but theoretically having the potential to apply to a wide range of cue patterns and to interactions with familiar others as well as strangers." (p. 59). EVT has even been studied within the context of embodied agents (non-human anthropomorphic figures/simulations) and computer-mediated communication (Burgoon,

Bonito, Lowry, Humpherys, Moody, Gaskin & Giboney, 2016). The heart of EVT is understood as societal expectations for communication and the consequences on intended goals.

Borrowing from EVT's framework and these arguments made by their principal authors, PLCs may be operating as expectancy violations which could explain some of these studies' findings. Violations of conversational turn-taking norms were already mentioned in this discussion. Extended latency pauses and use of time in conversations have already been studied within EVT's framework (Kalman & Rafaeli, 2010). Hesitations that were measured as overly long pauses were considered a form of nonverbal communication and found to negatively affect evaluations of courtroom witnesses (Remland, 1994). Moreover, overly long turn-taking through the use of loquacious messages (i.e., including too many hedged words or clauses, too many descriptive intensifiers, or repeated use of declarative interrogatives) could be seen as a veritable fusion of verbal and nonverbal components. PLCs, their use patterns, and consequences for speaker credibility may be a suitable test of extending the scope of EVT's framework and assumptions.

EVT's model includes the variable for a valence construct (Burgoon, 1993). *Reward valence* refers to appraisals of the speaker while *violation valence* refers to appraisals of the communicative act itself. The mediating variables of quantity, quality, clarity, relevance, and suspicion seem to be measuring violation valence while the three factors of speaker credibility measure reward valence. According to EVT, these valences can be assigned as positive or negative and can vary according to context, in general, and the expected behaviors within that context specifically (Burgoon, Newton, Walther &

Baesler, 1989). So, hedging might not be assigned a negative valence due to speaker expertise (i.e., doctors and journalists qualifying scientific findings), speaker intentions (i.e., students requesting extensions), or previously accepted behaviors within a given communicative scenario (i.e., pervasive use of strategic hedging or deception by politicians).

Given the similarities between these two study's models and the framework of EVT, future research should be conducted that explicitly tests these ostensibly theoretically parallel explanations. Researchers can use PLCs and IMS to determine if certain linguistic cues have preconceived violation valences and associated reward valences. The valences could explain, for instance, why strategically masking knowledge could be beneficial for a speaker's sociability or competency appraisal, or why someone may avoid PLCs to promote vicarious confidence. For instance, a professor may use direct concise language when telling a student that they will preform well on their upcoming presentation (even if the professor does not believe the statement) in order to engender a "fake it till you make it" confidence in their student.

Limitations

One limitation of this study was the creation of the IV as "amount of perceived PLC" from the manipulation check items. Participants in each experimental message only answered manipulation check items for the condition they were in (either two or three items) while participants in the control conditions answer manipulation check items for all four types of PLCs (a total of ten items). The answers of the participants in the control conditions had to be excluded from these final models because the measurements of the manipulation check items were not consistent. This prevented the researcher from

comparing the indirect effects of a specific PLC to a control message or to other PLCs rather than just reporting “when PLCs were used”.

A second limitation was the use of PROCESS as a statistical computation computer program. More sophisticated programs such as R or AMOS can provide additional fit statistics and test of parallelism to increase global understanding of the variables included in the model. PROCESS constrains all coefficients of parallel mediators except the one who’s coefficient is being calculated to be equal to zero in order to isolate the effect of that one specific mediator. The means that all the variances of the parallel mediator paths are embedded in the constant of each of the other parallel mediators’ regression equations. The interpretation of a single mediator’s effect when other parallel mediators are present then becomes conditional on all other mediators being equal. This equality is artificially created through constraining the coefficients. This does not invalidate the findings presented in these studies, but it does change the confidence and interpretation slightly. There might be a concern of listwise error inflation akin to conducting to many statistical procedures for a single answer. Other statistical software can ameliorate these concerns and should be used moving forward.

A final limitation mentioned for this study is the use of mTurk workers as participants. There were over five hundred mTurkers recruited for this study, but nearly half of them had to be removed upon cleaning the data. The use of bots became obvious when looking at answers to the open-ended response item participant checks in qualtrics. Many of the responses were incomprehensible scripts where the bot was pre-programed. This study set the value of the mTurk HIT response acceptance rate at 100 and the successful completion rate at 95%. Future research should set the HIT response

acceptance rate at 5,000 or greater and the successful completion rate at 98%. That too could introduce sampling bias, but data with known bias is likely better than bad data.

Conclusion

This dissertation developed and confirmed a new scale for information manipulation, a reassessment of the speaker credibility construct resulted in a purportedly more parsimonious factor structure without sacrificing any comprehensiveness, power of peech styles theory was refined to definitively excluded intensifiers, and a much better understanding of how specific linguistic markers influenced perceived honesty and speaker credibility was gleaned. Many ideas were put forth for next steps in this research line and limitations were described so that future research can seek to overcome those limitations with alternative methodologies.

APPENDIX A – IRB Approval Letter

Office *of*
Research Integrity

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

118 COLLEGE DRIVE #5116 • HATTIESBURG, MS | 601.266.6756 | WWW.USM.EDU/ORI

NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI via the Incident submission on InfoEd IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.

PROTOCOL NUMBER:	22-198
PROJECT TITLE:	Power of Speech Linguistic Cues and Speaker Credibility
SCHOOL/PROGRAM	Communication Studies
RESEARCHERS:	PI: Kevin Bryant Investigators: Bryant, Kevin~Venette, Steven~
IRB COMMITTEE ACTION:	Approved
CATEGORY:	Expedited Category
PERIOD OF APPROVAL:	18-Mar-2022 to 17-Mar-2023

Donald Sacco Jr.

Donald Sacco, Ph.D.
Institutional Review Board Chairperson

IRB Voluntary Consent Form

PI: Kevin Bryant **Email**: kevin.bryant@usm.edu **Date**: Feb 15, 2022

Title: Power of Speech Linguistic Cues and Speaker Credibility

1. **Purpose**:
   This study focuses on how audience members rate a speaker across different environments when certain linguistic cues or strategies are used. The researchers want to know how the environment shapes an individual's interpretation of messages and subsequent evaluations of the speaker.

2. **Description of Study**:
   You will read a one-page transcript of a conversation and then answer some questions regarding that conversation. You must complete this questionnaire in one sitting. It should take you about 10 minutes to complete this questionnaire.

3.
   a. **Benefits**: This research will help inform our collective understanding of how certain linguistic cues are interpreted across different everyday context. When talking with an authority figure, or a co-worker, the messages we use can affect our ability to obtain our goals. This study's findings can help us determine what linguistic cues makes messages more effective.
   b. **Incentives**: If you are taking this questionnaire as an Amazon mTurk worker, then you will receive $0.25 (25 cents) for successful completion of this questionnaire. Successful completion is contingent on correctly answering certain questions, and finishing the reading and questions within a certain timeframe during one sitting. You will not be allowed to start the questionnaire, stop, and return later to finish if you wish to receive payment. You must also be a native English speaker and live within the United States' borders.

4. **Risks**:
   There are no expected risks associated with your participation in this research. A potential risk may be that you have to sit and read from a computer screen without a break for 10-15 minutes.

5. **Confidentiality**:
   This questionnaire does not collect identifying information unless you volunteer it in an open ended question. However, any identifying information (such as your email address, IP Address, etc.) will be kept confidential and only known to the primary researcher. This information will be stored in an encrypted file in a password protected computer.

6. **Participant's Assurance**:
   This project and this consent form have been reviewed by the Institutional Review Board, which ensures that research projects involving human subjects follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, 118 College Drive #5125, Hattiesburg, MS 39406-0001, (601) 266-5997.

   Any questions about this research project should be directed to the principal Investigator using the contact information provided above.

CONSENT TO PARTICIPATE IN RESEARCH

I understand that participation in this project is completely voluntary, and I may withdraw at any time without penalty, prejudice, or loss of benefits. Incentives are not benefits and may be loss due to non-successful completion as described above. All personal information will be kept strictly confidential, including my name and other identifying information. All procedures to be followed and their purposes were explained to me. Information was given about all benefits, risks,

inconveniences, or discomforts that might be expected. Any new information that develops during the project will be provided to me if that information may affect my willingness to continue participation in the project.

By clicking "Yes" below, I give my consent to participate in this research project. **If you do not wish to participate in this study, please click the "NO" option below.**

7. Yes, I consent to participate
8. NO, I do not consent to participate

APPENDIX B – Control Message Vignettes

Doctor-Patient Scenario

A: The following is a transcript of an appointment between a physician and a patient. Please read carefully before responding to the follow-up questions.

Doctor: Good morning, what brings you in today?

Patient: It's the pain again. I haven't been able to sleep for the past two nights. I need some relief. It throbs all day and night. I can't help out around the house. I've missed a few days of work now. I'm miserable.

Doctor: Is the pain in your back?

Patient: Yeah.

Doctor: Is it going down your leg?

Patient: No. It constantly hurts here in my lower back. I can't turn or bend over. It is the worst. The other day, I felt a sneeze coming on and got really scared. I don't know what to do if this pain doesn't go away. I feel like all aspects of my life is suffering because of it.

Doctor: It's good it isn't going down your leg, that still sounds like a mechanical back pain. Are you getting out of the house much?

Patient: Not like I used to. Stairs give me problems. Door knobs give me problems. Getting in and out of the car gives me problems. It's just constant. It doesn't always hurt as bad as it does today, but even on good days here lately, it seems like its too much. There really must be something wrong with my back for it to hurt this much.

Doctor: Was the anti-inflammatory I gave you last time helpful?

Patient: Yeah, but they're not helping as much now as they use to. Several times I had to take two at a time to get some relief.

Doctor: Have you been to a chiropractor?

Patient: No, not yet. I came to see you first.

Doctor: I think we should order a round of X-rays to make sure you don't have a slipped disc or a pinched nerve or something like that. I'll give this referral to my assistant and you can schedule the appointment for the X-rays. I'm going to give you another prescription of meloxicam and you should take these as needed. I'd like to see you back here within two weeks. I hope you get to feeling better.

Total Words – 370 Total Exchanges – 13 (Doctor – 7 and Patient – 6)

Lawyer-Witness Scenario

A: The following is a transcript from a lawyer and client describing a car accident. Please read carefully before responding to the follow-up questions.

Lawyer: In your own words, can you tell us what happened?

Client: I was driving down Coliseum Boulevard at 4:30 p.m. The traffic was getting bad. I came up to a section of the road which is hectic since there are all of these stores, and everyone tries to get in and out of them. The left lane is bad, since people try to make left turns into the stores. I was in the left lane and got caught behind a line of cars turning left. I didn't want to sit in a string of cars trying to turn left for 10 or more minutes, so I decided to get into the right lane. I looked in my rear-view mirror and checked the traffic, and I didn't see any cars, so I figured it was OK to change lanes. I signaled and started to pull into the other lane when I got hit hard from behind. I didn't know what happened. I was stunned. A car in the lane behind me had pulled out and hit the back of my car. I feel I had the right-of-way.

Lawyer: Are you sure you signaled?

Client: I am sure I signaled. Since people around here are bad about signaling I make a conscious effort to signal.

Lawyer: You say you were hit hard. Can you explain why?

Client: The other car sped up when it pulled out, because it was going fast.

Lawyer: How fast would you estimate?

Client: 30 miles per hour. It was one of those high-performance cars.

Lawyer: Did you see any other cars signaling when you checked your mirror?

Client: No, I didn't.

Lawyer: What is the extent of your injuries and damages?

Client: My car needs work. As for my own personal injuries, I still have a problem with pain in my neck. The doctor said that it's due to the accident. My arm was broken and it's still immobile. It's going to take me awhile until I get full use of it back. What concerns me is that I've had to miss work and won't be able to pay the medical bills.

Total words – 356 Total Exchanges – 12 (6 lawyer, 6 witness)

Politician-Constituent Scenario

A: The following is an excerpt of a transcript of a town hall meeting conducted by telephone between a politician and several constituents requesting views on specific policies. Please read carefully before responding to the follow-up questions.

Politician: Thanks for that introduction, but I'm eager to get started fielding questions from the public, so lets bring a caller on the line. The first call is John from Morristown, thanks for calling in.

John: Hi Congressman, how are you?

Politician: I'm doing great, how are you?

John: Fine, thanks. My question is about healthcare. According to reports, they're gonna make it more difficult to hire persons over 50. I was wondering if you know anything about that, and would you vote for that?

Politician: I've never heard any comments either under the existing Affordable Care Act or any discussion about replacement proposals that had placed any sort of a limit on hiring people based on age.

John: Well, it wasn't a limit, it was just a, it would allow the insurance companies to charge more for older workers; can you confirm that, or no?

Politician: I don't know. The committees of jurisdiction are taking a look at what should be in the replacement bill. The thing that I focus on is obviously making sure that we retain coverage for people with pre-existing conditions. Thanks for calling. Hello, Marilyn in Montville, you've joined my telephone Town Hall meeting.

Marilyn: Hello Congressman, my question is, I read in the paper that the property tax could be eliminated as a deductible item when filing our income taxes. What's your stance on this issue?
Politician: I support having that property tax being deductible. I also support the continuation of the charitable contribution. We want more people to continue to be generous in our society. And so there's been some talk and I'm not supportive of it. Thanks for your question. Who is our next caller?

Frank: Congressman, this is Frank from Parsippany, how are you?

Politician: Well, Frank, thanks for getting on the line.

Frank: I want to know your thoughts on the electoral college.

Politician: Well, our Founding Fathers came up with a solution, which wasn't perfect, and it took a decade to get that. Presently, members of the House, with the exception of maybe Wyoming and much smaller states, represent approximately 730,000 people. So the counterbalance is that we do have two U.S. Senators. That's the constitutional balance that looks after the needs of smaller states. Thanks for weighing in.

Total Words – 380 Total Exchanges 13 (Politician – 7 and Constituents – 6)

Professor-Student Scenario

A: The following is a transcript of a conversation between a professor and one of their students requesting an extension on an assignment. Please read carefully before responding to the follow-up questions.

Student: Hey Professor, I have a question about the assignment that is due tomorrow.

Professor: Yea, what is your question?

Student: I had some things come up recently that have been hard to deal with. It's personal family stuff that I do not want to get into detail about, but it's thrown off my time management. I started pledging for Greek life this semester, and I have not been getting sleep lately. I've been working over forty hours each week at my job, and three of my other four classes have exams this week. I know your policy is to not accept late work; however, I am worried about doing well in this class and I need to pass this course to graduate. Is it possible to get an extension on this paper?

Professor: Is this part of the reason why you have missed a few classes lately?

Student: Yes, everything is difficult right now. I have not asked for an extension before, but there is no way that I will be able to turn in this assignment on time.

Professor: Why did you wait until today to ask for an extension?

Student: I thought I would be able to finish on time, but the issues with my family started two weeks ago. I thought I could resolve the issues quickly, but I didn't realize how much time and energy this was going to take. Looking back, I wish I would have contacted you sooner, but I didn't want to ask for extra time because it made me feel like I couldn't handle it.

Professor: I'm glad that you are letting me know. Life happens and we all have to deal with it. So my question for you is, how much extra time do you think you'll need to complete the assignment?

Student: I could finish this project by Friday.

Professor: Are you sure that is enough time? If we agree to this extension you will not be given another one.

Student: Yes, my exams are on Wednesday and Thursday morning, so I will devote the rest of my time on Thursday and Friday to completing the write-up.

Professor: Ok, you can have the extension. Good luck on your exams and I hope everything works out with your family.

Total Words – 379 Total Exchanges – 12 (Student – 6 and Professor – 6)

APPENDIX C – Manipulation Message Vignettes

Professor-Student Scenarios

B - Hedges: The following is a transcript of a conversation between a professor and one of their students requesting an extension on an assignment. Please read carefully before responding to the follow-up questions.

Student: Hey Professor, I have a question about the assignment that is due tomorrow.

Professor: Yea, what is your question?

Student: I had some things come up recently that I think have been hard to deal with. It's sorta personal family stuff that I do not want to get into detail about, but it's thrown off my time management. I started pledging for Greek life this semester, and I have not been getting sleep lately. I've been working over maybe forty hours each week at my job, and like three of my other four classes have exams this week. I know your policy is to not accept late work; however, I am kinda worried about doing well in this class and I need to pass this course to graduate. Would it be possible to get an extension on this paper?

Professor: Is this part of the reason why you have missed a few classes lately?

Student: Mostly yes, everything is difficult right now. I have not asked for an extension before, but there is no way that I will be able to turn in this assignment on time.

Professor: Why did you wait until today to ask for an extension?

Student: I thought I would be able to finish on time, but the issues with my family started roughly two weeks ago. I thought I could resolve the issues quickly, but I didn't realize how much time and energy this was going to take. Looking back, I wish I would have contacted you sooner, but I didn't want to ask for extra time because it made me feel like I couldn't handle it.

Professor: I'm glad that you are letting me know. Life happens and we all have to deal with it. So my question for you is, how much extra time do you think you'll need to complete the assignment?

Student: I believe I could finish this project by Friday.

Professor: Are you sure that is enough time? If we agree to this extension you will not be given another one.

Student: Probably, yea. My exams are on Wednesday and Thursday morning, so I will devote the rest of my time on Thursday and Friday to completing the write-up.

Professor: Ok, you can have the extension. Good luck on your exams and I hope everything works out with your family.

Total Words – 391 Total Exchanges – 12 (Student – 6 and Professor – 6) Total Cues - 10

Professor-Student Scenarios

C - Hesitations: The following is a transcript of a conversation between a professor and one of their students requesting an extension on an assignment. Please read carefully before responding to the follow-up questions.

Student: Hey Professor, I have a question about the assignment that is due tomorrow.

Professor: Yea, what is your question?

Student: I had some things come up recently that have been hard to deal with. Err…It's personal family stuff that I do not want to get into detail about, but it's thrown off my..uhm.. time management. I …uhm…started pledging for Greek life this semester, and I have not been…uhh… getting sleep lately. I've been working …… been working over forty hours each week at my job, and three of my other four classes have exams this week. I know your policy is to not accept late work; however,…hmmm… I am worried about doing well in this class and I need to pass this course to graduate. Is it possible to get an extension on this paper?

Professor: Is this part of the reason why you have missed a few classes lately?

Student: Yes, …uhh…everything is just difficult right now. I have not asked for an extension before, but …umm…there is no way that I will be able to turn in this assignment on time.

Professor: Why did you wait until today to ask for an extension?

Student: I thought I would be able to finish on time, but …umm…the issues with my family started two weeks ago. I thought I could resolve the issues quickly, but I didn't realize how much time and energy this was going to take. Looking back, I wish I would have contacted you sooner, but I didn't want to ask for extra time because…(clears throat) it made me feel like I couldn't handle it.

Professor: I'm glad that you are letting me know. Life happens and we all have to deal with it. So my question for you is, how much extra time do you think you'll need to complete the assignment?

Student: Umm…I could finish this project by Friday.

Professor: Are you sure that is enough time? If we agree to this extension you will not be given another one.

Student: Ummm…Yea, my exams are on Wednesday and Thursday morning, so I will devote the rest of my time on Thursday and Friday to completing the write-up.

Professor: Ok, you can have the extension. Good luck on your exams and I hope everything works out with your family.

Total Words – 384 Total Exchanges – 12 (Student – 6 and Professor – 6) Total Cues - 9

Professor-Student Scenarios

D - Intensifiers: The following is a transcript of a conversation between a professor and one of their students requesting an extension on an assignment. Please read carefully before responding to the follow-up questions.

Student: Hey Professor, I have a question about the assignment that is due tomorrow.

Professor: Yea, what is your question?

Student: I had several things come up recently that have been hard to deal with. It's personal family stuff that I really do not want to get into detail about, but it's thrown off my time management. I started pledging for Greek life this semester, and I have not been getting any sleep lately. I've been working well over forty hours each week at my job, and all three of my other four classes have exams this week. I know your policy is to not accept late work; however, I am very worried about doing well in this class and I need to pass this course to graduate. Is it possible to get an extension on this paper?

Professor: Is this part of the reason why you have missed a few classes lately?

Student: Yes, everything is extremely difficult right now. I have not asked for an extension before, but there is no way that I will be able to turn in this assignment on time.

Professor: Why did you wait until today to ask for an extension?

Student: I thought I would be able to finish on time, but the issues with my family started exactly two weeks ago. I thought I could resolve the issues quickly, but I didn't realize how much time and energy this was going to take. Looking back, I wish I would have contacted you way sooner, but I didn't want to ask for extra time because it made me feel too much like I couldn't handle it.

Professor: I'm glad that you are letting me know. Life happens and we all have to deal with it. So my question for you is, how much extra time do you think you'll need to complete the assignment?

Student: Absolutely, I could finish this project by Friday.

Professor: Are you sure that is enough time? If we agree to this extension you will not be given another one.

Student: Without a doubt, yes. My exams are on Wednesday and Thursday morning, so I will devote the rest of my time on Thursday and Friday to completing the write-up.

Professor: Ok, you can have the extension. Good luck on your exams and I hope everything works out with your family.

Total Words – 393 Total Exchanges – 12 (Student – 6 and Professor – 6) Total Cues - 12

Professor-Student Scenarios

E – Tag Questions: The following is a transcript of a conversation between a professor and one of their students requesting an extension on an assignment. Please read carefully before responding to the follow-up questions.

Student: Hey Professor, I have a question about the assignment that is due tomorrow.

Professor: Yea, what is your question?

Student: I had some things come up recently that have been hard to deal with, right? It's personal family stuff that I do not want to get into detail about, but it's thrown off my time management, you know what I mean? I started pledging for Greek life this semester, and I have not been getting sleep lately. I've been working over forty hours each week at my job, and three of my other four classes have exams this week, ya see? I know your policy is to not accept late work; however, I am worried about doing well in this class and I need to pass this course to graduate, right? Is it possible to get an extension on this paper?

Professor: Is this part of the reason why you have missed a few classes lately?

Student: Yes, everything is difficult right now. I have not asked for an extension before, but there is no way that I will be able to turn in this assignment on time, ya know?

Professor: Why did you wait until today to ask for an extension?

Student: I thought I would be able to finish on time, but the issues with my family started two weeks ago. I thought I could resolve the issues quickly, but I didn't realize how much time and energy this was going to take, you understand? Looking back, I wish I would have contacted you sooner, but I didn't want to ask for extra time because it made me feel like I couldn't handle it, you know what I mean?

Professor: I'm glad that you are letting me know. Life happens and we all have to deal with it. So my question for you is, how much extra time do you think you'll need to complete the assignment?

Student: I could finish this project by Friday, couldn't I?

Professor: Are you sure that is enough time? If we agree to this extension you will not be given another one.

Student: You know what, yes, my exams are on Wednesday and Thursday morning, so I will devote the rest of my time on Thursday and Friday to completing the write-up.

Professor: Ok, you can have the extension. Good luck on your exams and I hope everything works out with your family.

Total Words – 402 Total Exchanges – 12 (Student – 6 and Professor – 6) Total Cues - 11

Politician-Constituent Scenario

B - Hedges: The following is an excerpt of a transcript of a town hall meeting conducted by telephone between a politician and several constituents requesting views on specific policies. Please read carefully before responding to the follow-up questions.

Politician: Thanks for that introduction, but I'm eager to get started fielding questions from the public, so lets bring a caller on the line. The first call is John from Morristown, thanks for calling in.

John: Hi Congressman, how are you?

Politician: I'm doing great, how are you?

John: Fine, thanks. My question is about healthcare. According to reports, they're gonna make it more difficult to hire persons over 50. I was wondering if you know anything about that, and would you vote for that?

Politician: I don't believe I've ever heard any comments either under the existing Affordable Care Act or any discussion about replacement proposals that had placed any sort of a limit on hiring people based on age.

John: Well, it wasn't a limit, it was just a, it would allow the insurance companies to charge more for older workers; can you confirm that, or no?

Politician: I quite honestly don't know. I think the committees of jurisdiction are taking a look at what should be in the replacement bill. The thing that I would mostly focus on is obviously making sure that we roughly retain coverage for people with pre-existing conditions. Thanks for calling. Hello, Marilyn in Montville, you've joined my telephone Town Hall meeting.

Marilyn: Hello Congressman, my question is, I read in the paper that the property tax could be eliminated as a deductible item when filing our income taxes. What's your stance on this issue?

Politician: I primarily support having that property tax being deductible. I also support the continuation of the charitable contribution. I think we want more people to continue to be generous in our society. And so there's been some talk… I'm not supportive of it. Thanks for your question. Who is our next caller?

Frank: Congressman, this is Frank from Parsippany, how are you?

Politician: Well, Frank, thanks for getting on the line.

Frank: I want to know your thoughts on the electoral college.

Politician: Well, our Founding Fathers sorta came up with a solution, which wasn't perfect, and it took a decade to get that. Presently, members of the House, with the exception of maybe Wyoming and much smaller states, represent like approximately 730,000 people. So the counterbalance is that we do have two U.S. Senators. That's probably the constitutional balance that looks after the needs of smaller states. Thanks for weighing in.

Total Words – 395 Total Exchanges 13 (Politician – 7 and Constituents – 6) Total Cues - 10

Politician-Constituent Scenario

C - Hesitations: The following is an excerpt of a transcript of a town hall meeting conducted by telephone between a politician and several constituents requesting views on specific policies. Please read carefully before responding to the follow-up questions.

Politician: Thanks for that introduction, but I'm eager to get started fielding questions from the public, so lets bring a caller on the line. The first call is John from Morristown, thanks for calling in.

John: Hi Congressman, how are you?

Politician: I'm doing great, how are you?

John: Fine, thanks. My question is about healthcare. According to reports, they're gonna make it more difficult to hire persons over 50. I was wondering if you know anything about that, and would you vote for that?

Politician: I've never heard any comments…uhh… either under the existing Affordable Care Act or any discussion about replacement proposals that had placed any sort of…uhm… a limit on hiring people based on age.

John: Well, it wasn't a limit, it was just a, it would allow the insurance companies to charge more for older workers; can you confirm that, or no?

Politician: Err…I don't know. Hmmmm… the committees of jurisdiction are taking a look at what should be in the replacement bill. The thing that I focus on is…uhm… obviously making sure that we retain coverage for people with pre-existing conditions. Thanks for calling. Hello, Marilyn in Montville, you've joined my telephone Town Hall meeting.

Marilyn: Hello Congressman, my question is, I read in the paper that the property tax could be eliminated as a deductible item when filing our income taxes. What's your stance on this issue?

Politician: I support having that property tax…(clears throat) being deductible. I also support the…… continuation of the charitable contribution. We want more people to continue to be generous in our society. And so there's been some talk and I'm not supportive of it. Thanks for your question. Who is our next caller?

Frank: Congressman, this is Frank from Parsippany, how are you?

Politician: Well, Frank, thanks for getting on the line.

Frank: I want to know your thoughts on the electoral college.

Politician: Well, …uhh… our Founding Fathers came up with a solution, which wasn't perfect, and it took a decade to get that. Presently, members of the House, with the exception of…umm… maybe Wyoming and much smaller states, represent approximately 730,000 people. So the counterbalance is that we do have two U.S. Senators. That's the constitutional balance that…uhh… looks after the needs of smaller states. Thanks for weighing in.

Total Words – 390 Total Exchanges 13 (Politician – 7 and Constituents – 6) Total Cues - 10

Politician-Constituent Scenario

D - Intensifiers: The following is an excerpt of a transcript of a town hall meeting conducted by telephone between a politician and several constituents requesting views on specific policies. Please read carefully before responding to the follow-up questions.

Politician: Thanks for that introduction, but I'm eager to get started fielding questions from the public, so lets bring a caller on the line. The first call is John from Morristown, thanks for calling in.

John: Hi Congressman, how are you?

Politician: I'm doing great, how are you?

John: Fine, thanks. My question is about healthcare. According to reports, they're gonna make it more difficult to hire persons over 50. I was wondering if you know anything about that, and would you vote for that?

Politician: I've never heard any comments at all either under the existing Affordable Care Act or any discussion about replacement proposals that had placed any sort of a limit whatsoever on hiring people based on age.

John: Well, it wasn't a limit, it was just a, it would allow the insurance companies to charge more for older workers; can you confirm that, or no?

Politician: I really don't know. The committees of jurisdiction are taking a look at everything that should be in the replacement bill. The thing that I focus on is obviously making sure that we retain one-hundred percent coverage for people with pre-existing conditions. Thanks for calling. Hello, Marilyn in Montville, you've joined my telephone Town Hall meeting.

Marilyn: Hello Congressman, my question is, I read in the paper that the property tax could be eliminated as a deductible item when filing our income taxes. What's your stance on this issue?

Politician: I wildly support having that property tax being deductible. I also fully support the continuation of the charitable contribution. We want more people to continue to be generous in our society. And so there's been some talk and I'm not supportive of any of it. Thanks for your question. Who is our next caller?

Frank: Congressman, this is Frank from Parsippany, how are you?

Politician: Well, Frank, thanks for getting on the line.

Frank: I want to know your thoughts on the electoral college.

Politician: Well, our Founding Fathers came up with a solution, which wasn't exactly perfect, and it took nearly a decade to get that. Presently, members of the House, with the exception of maybe Wyoming and much smaller states, represent approximately 730,000 people. So the original counterbalance is that we do have two U.S. Senators. That's the constitutional balance that looks after the many needs of smaller states. Thanks for weighing in.

Total Words – 395 Total Exchanges 13 (Politician – 7 and Constituents – 6) Total Cues – 12

Politician-Constituent Scenario

E – Tag Questions: The following is an excerpt of a transcript of a town hall meeting conducted by telephone between a politician and several constituents requesting views on specific policies. Please read carefully before responding to the follow-up questions.

Politician: Thanks for that introduction, but I'm eager to get started fielding questions from the public, so lets bring a caller on the line. The first call is John from Morristown, thanks for calling in.

John: Hi Congressman, how are you?

Politician: I'm doing great, how are you?

John: Fine, thanks. My question is about healthcare. According to reports, they're gonna make it more difficult to hire persons over 50. I was wondering if you know anything about that, and would you vote for that?

Politician: I've never heard any comments either under the existing Affordable Care Act or any discussion about replacement proposals that had placed any sort of a limit on hiring people based on age, ya see.

John: Well, it wasn't a limit, it was just a, it would allow the insurance companies to charge more for older workers; can you confirm that, or no?

Politician: I don't know. The committees of jurisdiction are taking a look at what should be in the replacement bill, right? The thing that I focus on is obviously making sure that we retain coverage for people with pre-existing conditions, you know? Thanks for calling. Hello, Marilyn in Montville, you've joined my telephone Town Hall meeting.

Marilyn: Hello Congressman, my question is, I read in the paper that the property tax could be eliminated as a deductible item when filing our income taxes. What's your stance on this issue?

Politician: You know what, I support having that property tax being deductible. I also support the continuation of the charitable contribution, you understand? We want more people to continue to be generous in our society, right? And so there's been some talk and I'm not supportive of it. Thanks for your question. Who is our next caller?

Frank: Congressman, this is Frank from Parsippany, how are you?

Politician: Well, Frank, thanks for getting on the line.

Frank: I want to know your thoughts on the electoral college.

Politician: Well, our Founding Fathers came up with a solution, which wasn't perfect, you know what I mean, and it took a decade to get that. Presently, members of the House, with the exception of maybe Wyoming and much smaller states, represent approximately 730,000 people, right? So the counterbalance is that we do have two U.S. Senators, you see? That's the constitutional balance that looks after the needs of smaller states. Thanks for weighing in.

Total Words – 399 Total Exchanges 13 (Politician – 7 and Constituents – 6) Total Cues – 10

Lawyer-Witness Scenarios

B - Hedges: The following is a transcript from a lawyer and client describing a car accident. Please read carefully before responding to the follow-up questions.

Lawyer: In your own words, can you tell us what happened?

Client: I was driving down Coliseum Boulevard at I think 4:30 p.m. The traffic was getting bad. I came up to a section of the road which is hectic since there are all of these stores, and everyone tries to get in and out of them. The left lane is bad, since people try to make left turns into the stores. I was in the left lane and got caught behind a line of cars turning left. I didn't want to sit in a string of cars trying to turn left for 10 or more minutes, so I decided to get into the right lane. Then I think I looked in my rear-view mirror and checked the traffic, and i didn't see any cars, so I figured it was OK to change lanes. I signaled and started to pull into the other lane when I got hit hard from behind. I didn't know what happened. I was stunned maybe. A car in the lane behind me had pulled out and hit the back of my car. I'm pretty sure I had the right-of-way.

Lawyer: Are you sure you signaled?

Client: I am sure I signaled. Since people around here are bad about signaling I make a conscious effort to signal almost always.

Lawyer: You say you were hit hard. Can you explain why?

Client: The other car must have sped up when it pulled out, because it was going fast.

Lawyer: How fast would you estimate?

Client: Perhaps 30 miles per hour. It was one of those high-performance kinda cars.

Lawyer: Did you see any other cars signaling when you checked your mirror?

Client: I can't remember anyone else signaling.

Lawyer: What is the extent of your injuries and damages?

Client: My car needs work. As for my own personal injuries, I still sorta have a problem with pain in my neck. The doctor said that it's probably due to the accident. My arm was broken and it's still mostly immobile. It's going to take me awhile until I get full use of it back. What concerns me is that I've had to miss work and won't be able to pay the medical bills.

Lawyer-Witness Scenarios

C - Hesitations: The following is a transcript from a lawyer and client describing a car accident. Please read carefully before responding to the follow-up questions.

Lawyer: In your own words, can you tell us what happened?

Client: Uhhh… I was driving down Coliseum Boulevard at 4:30 p.m. The traffic was getting bad. I came up to a section of the road which is hectic since there are all of these stores, and everyone tries to get in and out of them. The left lane is bad since people try to make left turns into the stores. I was in the left lane and got … uhhh… caught behind a line of cars turning left. I didn't want to sit in a string of cars trying to turn left for 10 or more minutes, so I decided to get into the right lane. I … uh… looked in my rear-view mirror …uhh … checked the traffic, and I didn't see any cars, so I figured it was OK to change lanes. And then I … then I signaled and started to pull into the other lane when I got hit hard from behind. I didn't know what happened. I was stunned. A car in the lane behind me had pulled out and hit the back of my car. I feel I had the right-of-way.

Lawyer: Are you sure you signaled?

Client: uhh … yeah I am sure I signaled. Since people around here are bad about signaling … er … I make a conscious effort to signal.

Lawyer: You say you were hit hard. Can you explain why?

Client: Well … uhm … The other car sped up when it pulled out, because it was going fast.

Lawyer: How fast would you estimate?

Client: 30 miles per hour. It was one of those … uh … high-performance cars.

Lawyer: Did you see any other cars signaling when you checked your mirror?

Client: Uhh … No, I didn't.

Lawyer: What is the extent of your injuries and damages?

Client: My car needs work. As for my own personal injuries … uh … I still have a problem with pain in my neck. The doctor said that it's due to the accident. My arm was broken and it's still … uhm … immobile. It's going to take me awhile until I get full use of it back. What concerns me is that I've had to miss work and won't be able to pay the medical bills.

Lawyer-Witness Scenarios

D - Intensifiers: The following is a transcript from a lawyer and client describing a car accident. Please read carefully before responding to the follow-up questions.

Lawyer: In your own words, can you tell us what happened?

Client: I was driving down Coliseum Boulevard at 4:30 p.m. The traffic was getting really bad. I came up to a section of the road which is very hectic since there are all of these stores, and everyone tries to get in and out of them. The left lane is bad, since people try to make left turns into the stores. I was in the left lane and got caught behind a long line of cars turning left. I didn't want to sit in a string of cars trying to turn left for 10 or more minutes, so I decided to get into the right lane. I looked in my rear-view mirror and checked the traffic, and i didn't see any cars, so I figured it was OK to change lanes. I signaled and started to pull into the other lane when I got hit extremely hard from behind. I didn't know what happened. I was flat stunned. A car in the lane behind me had pulled out and hit the back of my car. I strongly feel I had the right-of-way.

Lawyer: Are you sure you signaled?

Client: Absolutely, I am sure I signaled. Since people around here are bad about signaling I make a conscious effort to signal every time.

Lawyer: You say you were hit hard. Can you explain why?

Client: The other car sped up when it pulled out, because it was going very fast.

Lawyer: How fast would you estimate?

Client: 30 miles per hour. It was one of those expensive high-performance cars.

Lawyer: Did you see any other cars signaling when you checked your mirror?

Client: No, I didn't.

Lawyer: What is the extent of your injuries and damages?

Client: My car needs a lot of work. As for my own personal injuries, I still have a problem with terrible pain in my neck. The doctor said that it's due to the accident.
My arm was broken and it's still immobile. It's going to take me awhile until I get full use of it back. What concerns me is that I've had to miss work and won't be able to pay these expensive medical bills.

Lawyer-Witness Scenarios

E – Tag Questions: The following is a transcript from a lawyer and client describing a car accident. Please read carefully before responding to the follow-up questions.

Lawyer: In your own words, can you tell us what happened?

Client: I was driving down Coliseum Boulevard at 4:30 p.m., right? The traffic was getting bad. I came up to a section of the road which is hectic since there are all of these stores, and everyone tries to get in and out of them, you know? The left lane is bad, since people try to make left turns into the stores. I was in the left lane and got caught behind a line of cars turning left, you know what I mean? I didn't want to sit in a string of cars trying to turn left for 10 or more minutes, I mean you get it, so I decided to get into the right lane. I looked in my rear-view mirror and checked the traffic, and i didn't see any cars, so I figured it was OK to change lanes, and most would agree right? I signaled and started to pull into the other lane when I got hit hard from behind. I didn't know what happened. I was stunned. A car in the lane behind me had pulled out and hit the back of my car. I feel I had the right-of-way, you understand?

Lawyer: Are you sure you signaled?

Client: You know what, I am sure I signaled. Since people around here are bad about signaling, I make a conscious effort to signal.

Lawyer: You say you were hit hard. Can you explain why?

Client: The other car sped up when it pulled out, because it was going fast, ya see?

Lawyer: How fast would you estimate?

Client: 30 miles per hour. It was one of those high-performance cars, you've seen them before?

Lawyer: Did you see any other cars signaling when you checked your mirror?

Client: No, I didn't.

Lawyer: What is the extent of your injuries and damages?

Client: My car needs work, right? As for my own personal injuries, I still have a problem with pain in my neck, you know? The doctor said that it's due to the accident. My arm was broken and it's still immobile. It's going to take me awhile until I get full use of it back. What concerns me is that I've had to miss work, right, and won't be able to pay the medical bills.

Doctor-Patient Scenarios

B - Hedges: The following is a transcript of an appointment between a physician and a patient. Please read carefully before responding to the follow-up questions.

Doctor: Good morning, what brings you in today?

Patient: It's the pain again. I haven't been able to sleep very much for the past two nights. I need some relief. It basically throbs all day and night. I can't help out around the house. I've missed a few days of work now. Quite honestly I'm miserable.

Doctor: Is the pain in your back?

Patient: Yeah.

Doctor: Is it going down your leg?

Patient: Not really, no. It constantly hurts here in my lower back. I can't really turn or bend over. It is the worst. The other day, I felt a sneeze coming on and got really scared. I don't know what to do if this pain doesn't go away. I feel like all aspects of my life is sorta suffering because of it.

Doctor: It's good it isn't going down your leg, that still sounds like a mechanical back pain. Are you getting out of the house much?

Patient: Not like I used to. Stairs give me problems. Door knobs give me problems. Getting in and out of the car gives me problems. It's just constant. It doesn't always hurt as bad as it does today, but even on good days here lately, it seems like its too much. I think there really must be something wrong with my back for it to hurt this much.

Doctor: Was the anti-inflammatory I gave you last time helpful?

Patient: Primarily, yeah, but they're not helping as much now as they use to. I believe there were several times I had to take two at a time to get some relief.

Doctor: Have you been to a chiropractor?

Patient: Truthfully no, not yet. I came to see you first.

Doctor: I think we should order a round of X-rays to make sure you don't have a slipped disc or a pinched nerve or something like that. I'll give this referral to my assistant and you can schedule the appointment for the X-rays. I'm going to give you another prescription of meloxicam and you should take these as needed. I'd like to see you back here within two weeks. I hope you get to feeling better.

Total Words – 387 Total Exchanges – 13 (Doctor – 7 and Patient – 6) Total Cues – 10

Doctor-Patient Scenarios

C - Hesitations: The following is a transcript of an appointment between a physician and a patient. Please read carefully before responding to the follow-up questions.

Doctor: Good morning, what brings you in today?

Patient: It's the pain again. Uhhh…I haven't been able to sleep for the past two nights. I need some relief. It throbs all day and night. I can't…err… help out around the house. I've missed a few days of work now. I'm miserable.

Doctor: Is the pain in your back?

Patient: Yeah.

Doctor: Is it going down your leg?

Patient: Uhm… no. It constantly hurts here in my…uhhh… lower back. I can't turn or bend over. It is…… the worst. The other day, uhh… I felt a sneeze coming on and got really scared. I don't know what to do if this pain doesn't go away. I feel like…mmmm…. all aspects of my life is suffering because of it.

Doctor: It's good it isn't going down your leg, that still sounds like a mechanical back pain. Are you getting out of the house much?

Patient: Not like I used to. Stairs give me problems. Door knobs give me problems. Err… getting in and out of the car gives me problems. It's just constant. It doesn't… uhh… always hurt as bad as it does today, but even on good days here lately, it seems like its too much. There really must be something wrong with my back for it to hurt this much.

Doctor: Was the anti-inflammatory I gave you last time helpful?

Patient: Yeah…(clears throat), but they're not helping as much now as they use to. Several times I had to take two at a time to get some relief.

Doctor: Have you been to a chiropractor?

Patient: No…err… not yet. I came to see you first.

Doctor: I think we should order a round of X-rays to make sure you don't have a slipped disc or a pinched nerve or something like that. I'll give this referral to my assistant and you can schedule the appointment for the X-rays. I'm going to give you another prescription of meloxicam and you should take these as needed. I'd like to see you back here within two weeks. I hope you get to feeling better.

Total Words – 382 Total Exchanges – 13 (Doctor – 7 and Patient – 6) Total Cues – 11

Doctor-Patient Scenarios

D – Intensifiers: The following is a transcript of an appointment between a physician and a patient. Please read carefully before responding to the follow-up questions.

Doctor: Good morning, what brings you in today?

Patient: It's the pain again. I haven't been able to sleep a wink for the past two nights. I need some major relief. It throbs all day and night. I can't help out around the house. I've missed more than a few days of work now. I'm miserable.

Doctor: Is the pain in your back?

Patient: Yeah.

Doctor: Is it going down your leg?

Patient: No. It constantly hurts here in my lower back. I can't turn or bend over at all. It is the worst. The other day, I felt a sneeze coming on and got really really scared. I don't know what to do if this pain doesn't go away. I feel like all aspects of my life is suffering so much because of it.

Doctor: It's good it isn't going down your leg, that still sounds like a mechanical back pain. Are you getting out of the house much?

Patient: Not nearly as much as I used to. Stairs give me problems. Every door knob gives me problems. Getting in and out of the car gives me problems. It's just very constant. It doesn't always hurt as bad as it does today, but even on good days here lately, it seems like its too much. There really must be something extremely wrong with my back for it to hurt this much.

Doctor: Was the anti-inflammatory I gave you last time helpful?

Patient: Originally yeah, but they're not helping as much now as they use to. Several times I had to take two at a time to get some relief.

Doctor: Have you been to a chiropractor?

Patient: No, not yet. I rushed to see you first.

Doctor: I think we should order a round of X-rays to make sure you don't have a slipped disc or a pinched nerve or something like that. I'll give this referral to my assistant and you can schedule the appointment for the X-rays. I'm going to give you another prescription of meloxicam and you should take these as needed. I'd like to see you back here within two weeks. I hope you get to feeling better.

Total Words – 387 Total Exchanges – 13 (Doctor – 7 and Patient – 6) Total Cues – 12

Doctor-Patient Scenarios

E – Tag Questions: The following is a transcript of an appointment between a physician and a patient. Please read carefully before responding to the follow-up questions.

Doctor: Good morning, what brings you in today?

Patient: It's the pain again. I haven't been able to sleep for the past two nights, right? I need some relief, you know what I mean? It throbs all day and night. I can't help out around the house. I've missed a few days of work now. I'm miserable.

Doctor: Is the pain in your back?

Patient: Yeah.

Doctor: Is it going down your leg?

Patient: No. It constantly hurts here in my lower back, you see? I can't turn or bend over. It is the worst. The other day, I felt a sneeze coming on and got really scared, ya know? I don't know what to do if this pain doesn't go away. I feel like all aspects of my life is suffering because of it which you can understand, right?

Doctor: It's good it isn't going down your leg, that still sounds like a mechanical back pain. Are you getting out of the house much?

Patient: Not like I used to, right? Stairs give me problems. Door knobs give me problems. Getting in and out of the car gives me problems. It's just constant. It doesn't always hurt as bad as it does today, ya know, but even on good days here lately, it seems like its too much. There really must be something wrong with my back for it to hurt this much.

Doctor: Was the anti-inflammatory I gave you last time helpful?

Patient: Yeah, but they're not helping as much now as they use to, right? Several times I had to take two at a time to get some relief.

Doctor: Have you been to a chiropractor?

Patient: Wouldn't you know, no, not yet. I came to see you first.

Doctor: I think we should order a round of X-rays to make sure you don't have a slipped disc or a pinched nerve or something like that. I'll give this referral to my assistant and you can schedule the appointment for the X-rays. I'm going to give you another prescription of meloxicam and you should take these as needed. I'd like to see you back here within two weeks. I hope you get to feeling better.

Total Words – 392 Total Exchanges – 13 (Doctor – 7 and Patient – 6) Total Cues – 9

APPENDIX D – Lie Acceptability Scale

Please indicate your level of agreement with the following statements: Strongly Disagree to Strongly Agree

1. I never tell anyone the real reason you do anything unless it is useful to do so.

2. Lying is immoral. **(Reverse worded)**

3. It is ok to lie in order to achieve one's goals.

4. What people don't know can't hurt them.

5. The best way to handle people is to tell them what they want to hear.

6. There is no excuse for lying to someone else. **(Reverse worded)**

7. Honesty is always the best policy **(Reverse worded)**

8. It is often better to lie than to hurt someone's feelings.

9. Lying is just wrong. **(Reverse worded)**

10. Lying is no big deal.

11. There is nothing wrong with bending the truth now and then.

APPENDIX E – Generalized Communication Suspicion Scale

1. Everyone lies, the person who says that they don't is the biggest liar of all.
2. I often feel as if people aren't being completely truthful with me.
3. Most people only tell you what they think you want to hear.
4. When I am in a conversation with someone, I frequently wonder whether they are telling me the truth.
5. People rarely tell you what they're really thinking.
6. The best policy is to trust people until proven wrong.
7. Dishonesty is a part of human nature.
8. When I first meet someone, I assume that they are probably lying to me about some things.
9. Most people are basically honest.
10. Anyone who completely trusts someone else is asking for trouble.
11. When I ask a stranger for directions, I frequently wonder whether they are being truthful.
12. When I am talking to others, I tend to believe what they say.
13. People seldom lie to me.
14. Most people follow the saying "honesty is the best policy."

Items 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, and 14 were retained

APPENDIX F – Speaker Credibility Scale Items

Instructions: Please indicate the degree to which the statement below represents your perception of the patient/politician/student by the appropriate number between the pairs of adjectives. The closer the number is to an adjective, the more certain you are of your belief.

Unsympathetic	1	2	3	4	5	6	Sympathetic
Selfish	1	2	3	4	5	6	Unselfish
Sinful	1	2	3	4	5	6	Virtuous
Stupid	1	2	3	4	5	6	Bright
High Character	1	2	3	4	5	6	Low Character
Competent	1	2	3	4	5	6	Incompetent
Uninformed	1	2	3	4	5	6	Informed
Expert	1	2	3	4	5	6	Inexpert
Untrained	1	2	3	4	5	6	Trained
Unintelligent	1	2	3	4	5	6	Intelligent
Dynamic	1	2	3	4	5	6	Static
Uptight	1	2	3	4	5	6	Cool
Antisocial	1	2	3	4	5	6	Sociable
Friendly	1	2	3	4	5	6	Unfriendly
Cheerful	1	2	3	4	5	6	Gloomy
Good-natured	1	2	3	4	5	6	Bad-natured
Cold	1	2	3	4	5	6	Warm
Unpleasant	1	2	3	4	5	6	Pleasant
Likable	1	2	3	4	5	6	Unlikable

APPENDIX G – Deadline Responsibility Scale

The particular items used were selected to parallel those employed in the Shields (1979) study. Six Likert-type 6-point rating scales were used:

(1) The student should be expected to explain his/her behavior.

(2) The student should not be late with the assignment.

(3) The student seems embarrassed.

(5) The student should be punished in some way if late with the assignment.

(6) Given a similar situation, the student will probably act in the same way again.

(7) The act of being late with the assignment is wrong.

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