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THE MEDIATED IMPACT OF LANGUAGE INTENSITY ON ATTITUDE CHANGE

By

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ABSTRACT

THE MEDIATED IMPACT OF LANGUAGE INTENSITY ON ATTITUDE CHANGE

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This study examines the relationship between intensity markers and receiver perceptions of message intensity and coherence, perceptions of source credibility, and attitude change toward topic. Various explanations for inconsistent intensity findings are offered. Hypotheses were generated from expectancy theory. Intensity was predicted to interact with source gender and manipulated credibility. Experimental messages were created by selecting noun phrases, verb phrases and their modifiers which mark intensity to form low and high intensity texts. The high or low intensity text was combined with a pretext stimulus which contained a credibility induction and information about the gender of the source. Results were consistent with the hypothesis predicting an interaction between credibility and intensity for male sources. The predicted interaction between credibility and intensity for female sources did not occur.

A structural model was constructed to help determine which explanation of the intensity findings best fit the

data. The path model of best fit suggest that manipulated intensity shows a moderate correlation with perceived intensity, and that manipulated credibility directly correlates positively with source competence. Perceived message intensity was found to increase message coherence but to decrease perceived source character. Coherence lead to greater perceptions of competence, and more competence increased persuasiveness. Attitude change was the product of a four variable causal chain from manipulated intensity to perceived intensity to coherence to competence to change. Derogation of sources violating linguistic norms did not occur in this study or in others. This finding, coupled with the lack of support for the hypothesis predicting an interaction between credibility and intensity for female sources strongly implies that the intensity by credibility interaction observed in this study was due to sampling error. This interpretation is consistent with the intensity literature. The weak link between manipulated intensity and attitude change is attributed to the mediation of the perceived intensity, message coherence and source competence variables.

To my parents.

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I would like to express my appreciation to those who helped guide me through this project, and to those scholars who taught me about communication: Cal Hylton, who had the foresight to know that someday I would enjoy running SPSS programs more than funny cars; Don Ellis, who piqued my interest in language and demonstrated use of the filled pause to amuse, arouse and annoy audiences; Bill Donohue, who glossed the rules that bar ethnographers from immersing themselves in the richness of quantitative research in order to join me in a quest for lawful generalizations about everyday life; Mike Miller, who interpreted for me assorted phrases in the local Hawaiian vernacular like "haole dog" and "scubi;" Gerald Miller, who served as the model scholar and chair ,and whose overt nonverbal revulsion to my sporting Aloha shirts in January weaned me of that vile habit; Jack Hunter, who functioned as guru throughout this process and taught me how to intimidate then crush the weak and small Hun in our field with numbers; and finally, Michael and Judee Burgoon, who have had an effect on my interests and research from the beginning. I hope this dissertation is a positive violation of Michael's expectations.

Completing this undertaking prompts a reflective look at my years in graduate school, particularly on my classmates. There were others who provided moral support: Kirsten Bech and her entourage of felines, Jim DeLap, Bob Adams, Kathy Kellermann, Rhonda Hunter, Wanda Del Toro, all my contemporaries at MSU, Kym Young (or Kimberly Lugg or Kym Young-Lugg or whatever name she's using these days), Paul Fergusson, John Korenik, and Andrea Powell. Special thanks is due Paul Mineo, who provided the baseline by which to compare my dissertation progress, and unlimited bird-sign analysis.

That which does not kill us makes us stronger.

Friedrich Wilhelm Nietzsche

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CHAPTER 1

Introduction

Objectives

The objective of this study was to assess the impact of language intensity on the persuasive process. The underlying theory for the study design assumed that the effect of intensity on attitude change is the end product of a chain of causal effects. Manipulated lexical intensity affects perceived intensity which in turn affects the perception of the source which in turn affects the amount of attitude change. This indirect chain model of impact will be referred to as the mediation hypothesis. The natural design of the study is to use multiple dependent variables to trace this hypothesized causal process. This enables path analytic testing of hypotheses.

In order to test certain hypotheses from expectancy theory (Burgoon, Jones and Stewart, 1974), source credibility and source gender were also manipulated. Thus, there were three manipulated variables: lexical intensity of message, gender of source, and credibility of source.

There were three sets of dependent variables used to trace the hypothesized causal process: response to the message, response to the source, and attitude change. The receiver's reaction to the message was assessed on two dimensions: perceived intensity of the message and perceived coherence or clarity of the message. The receiver's response to the source was measured on three dimensions:

perception of source competence, source character (trustworthiness), and source sociability. All variables were assessed with semantic differential instruments which were tested using confirmatory factor analysis.

The introductory chapter defines intensity and reviews the intensity literature, examining some of the relevant generalizations currently accepted as "state of the art" in persuasion (Bradac, Bowers & Courtright, 1979), leading up to a discussion of expectancy theory. Possible explanations, including the mediation hypothesis, for the weak relationship between manipulations of intensity and attitude change are developed. Chapter two describes the pretesting and procedures which went into the construction of the measurement model. The third chapter presents the path model which best fits the data. Chapter four evaluates possible explanations of the intensity-attitude change relationship in light of the model of best fit. Past research is reconciled using the results of the present study as a model.

The mediation hypothesis and path models

According to the mediation hypothesis, language intensity does not impact attitude change directly. Rather language intensity first effects message perception which then influences source perception which then influences attitude change. The natural form of this hypothesis when laid out in detail is a path diagram leading from the dummy coded

variable representing manipulated intensity through the mediating variables to attitude change.

The path model to test the hypothesis was constructed as follows. The manipulated variables can be coded with dummy variables. For example, manipulated intensity can be scored 0 for low and 1 for high. The interactions can also be coded as dummy variables and formally entered into the model as additional variables. The manipulated variables and interactions enter the model as exogenous variables.

The first stage of causal analysis is that of the impact of manipulations on message perception. The mediation hypothesis predicts that manipulated intensity will have a direct impact on perceived intensity. The impact of manipulated intensity on perceived intensity can also be regarded as a manipulation check. There was no a priori reason to expect that other manipulated variables would have an impact on perceived intensity.

The mediation hypothesis predicts that perceived intensity will be a major determinant of perceived message coherence. Thus, manipulated intensity will have an indirect effect on coherence. No a priori hypothesis was made as to whether there would be an additional direct effect or not. Source gender was not expected to effect message coherence. The message was carefully constructed and hence not subject to the ambiguities of spontaneous communication. That is, the message was constructed so that receivers would not have to infer the meaning of the message from beliefs about

the source. Therefore, manipulated source credibility was not expected to effect perceived coherence.

The second stage of analysis looks at the impact of message perception on source perception. First, consider perceptions of source competence. The mediation hypothesis predicts a direct impact of perceived message coherence on source competence but no direct effect from manipulated intensity. That is, the mediation hypothesis predicts that there will be no causal arrow from manipulated intensity to any of the source perception variables; all intensity effects are predicted to be indirect effects.

The source perception variables may also be affected by other manipulations. In particular, perceived source competence is predicted to be effected by the source credibility manipulation. As will be discussed later, expectancy theory can be interpreted to imply that sources will be derogated if they violate hypothesized linguistic norms. This derogation would appear in the path model as interaction effects on the source perception variables. Specifically, source competence would depend on a source gender by manipulated intensity interaction, and a manipulated credibility by manipulated intensity interaction.

Next, consider the perception of source character or trustworthiness. It is predicted that perception of character will be determined in large part by perceptions of competence. If the source is unknown to the audience, source evaluation will be based on information presented

during the experiment. In the absence of meaningful social cues, the receiver should fall back on the source's performance, i.e., competence. However, there may also be an effect of language intensity on character. For any given level of competence, sources who use intense language might be perceived as less trustworthy than those who use neutral language. At the level of zero order correlations (i.e., univariate ANOVAs), expectancy theory implies interaction effects on source character. However, it is not clear in Burgoon et al. whether these effects would be mediated by the interactive effects on perceived source competence or whether there might be additional direct effects.

Last, consider the perception of source sociability. In this study, there is no direct information about the sociability of the source. The receiver sees nothing of the source but the message on heroin. Thus, it seemed likely that perception of source sociability would be determined almost entirely by perceived trustworthiness. Again there appears to be nothing in expectancy theory to determine whether it would predict direct interaction effects beyond the indirect effects channeled through perceptions of trustworthiness.

Finally, there is attitude change. According to the mediation hypothesis, attitude change will be effected only by source perception variables; especially perceived competence. There should be no direct effects from either the manipulated variables or from the message perception

variables. Expectancy theory predicts that at the level of zero order correlations, there should be source gender by intensity, and source credibility by intensity interaction effects. Expectancy theory can be viewed as an extension of the mediation hypothesis which adds effects based on the hypothesis of attitude change due to violation of hypothesized linguistic norms. Figure 1 shows the predicted path model for the study. This model is the simplest model that would be consistent with the mediation hypothesis.

The definition of intensity

The concept of intensity is broader than the language intensity manipulation used in the communication research considered here. The intensity of the message can be induced by manipulating message content: by the choice of illustrative cases, by selective emphasis on arguments or causal factors, by the arrangement of material, etc. Intensity can be manipulated by voice tone or gestures. This study focuses on one aspect of message intensity: lexical choice. Many words in a message may be chosen to be neutral or intense. For example, an adjective describing someone in the message might be the neutral word "unusual" or the intense word "horrible." The strength of the intensity manipulation is determined by the density of the manipulated markers. This research manipulated one in every four words in the message.

There is another fundamental distinction in the use of the word "intensity" that is not registered in current

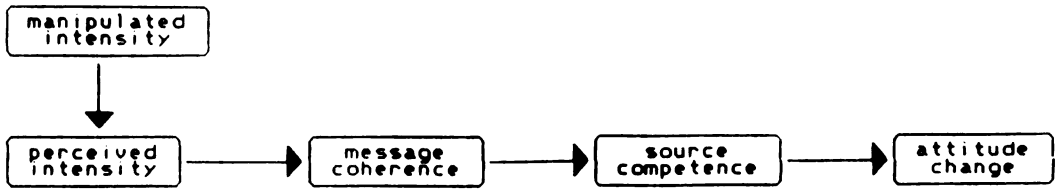

Figure 1. Model proposed by mediation hypothesis.

research. As a causal agent, the word "intensity" must refer to some causal process within the receiver. For example, perceived intensity taps such processes. However, the word "intensity" is often used as a descriptive linguistic term. There is an implicit assumption in this pattern of word use: the assumption that linguists know what words will set off the internal intensity processes. The process used by linguists to make their analysis appears to be the uncritical simulation of real receivers. Since linguists are themselves receivers, there is undoutedly considerable validity to these judgments. However, some of the intensity dimensions in the literature may be much more tenuously related to internal intensity processes than is implicitly assumed in current literature.

The dimensions labeled "intensity" in the current literature appear to fall into two broader categories: emotionality of wording, and specificity of wording. Bowers (1963) defined an intense word as one which deviated from neutrality. A nonintense word, according to Bowers, is the equivalent of a neutral word. Of the two dimensions of intensity on which lexical items can vary --emotionality and specificity -- specificity should contribute more to perceptions of clarity and coherence.

The emotionality dimension involves the degree of affect revealed by lexical choice. To illustrate the two extremes of this continuum, consider the phrases "shockingly unsound" and "less than sound." Use of a term like

"shocking" or "alarming" conveys the emotion experienced by the source, suggesting that the receiver should feel the same. The alternative to emotion laden language is to offer more detached, neutral sounding terminology. Tied to the concept of emotional language is the portion of the lexicon which indicates motivation. A person as referent could be described as either "eager" or "desperate." The more needy an individual seems to be, the more volatile the situation under description should appear. A dynamic setting for the referents in a text should make the entire text more intense.

The specificity dimension is represented by any one of several lexical categories. First, lexical specificity can be achieved by using narrowly defined semantic categories. For example, a source might refer to "income" rather than "resources." The semantic category of resources contains income, along with many other types of resource. Employing the more broad semantic category should be viewed as lacking lexical precision, and possibly being intentionally vague. Receivers could view language "fuzziness" on the part of the source as an attempt to be evasive or whitewash an issue. Another example of lexical precision would be the use of a term such as "body" rather than "face" when describing the location of pain or injury. Receivers might attribute naivete or even deception to the source of this lexical lexical choice.

Second, lexical specificity can be expressed in the form of euphemisms and disphemisms. Use of a word like "illness" rather than "disease" connotes less pain. Less graphic lexical items designed to describe unpleasant circumstances can often appear as euphemisms. For example, muggings might be described as "unpleasantries." When the reader or listener discerns from the context what kind of unpleasantries the source is talking about, there is a danger the receiver will attribute insensitivity or deception to the source. Conversely, rather than contributing to perceptions of vagueness as the use of euphemisms does, use of disphemisms should lead to perceptions of intensity. "Sleazy," for instance, brings forth more negative affect than "shady." Likewise, the term "wretched" is more adversely colored than "unattractive." Whereas euphemisms deviate less from neutrality than their alternatives, disphemisms deviate more from neutrality than their alternatives.

Third, modifiers -- adjectival and adverbial --contribute to the lexical specificity of an utterance. Modifiers can indicate quantity, frequency, extensity or activity. Quantity modifiers reveal how many or few, much or little of a concept the speaker intends. For example, either "most of" or "part of" might be used to modify X. Semantically, "part of" could be replaced by "most of" if the part in question is over fifty per cent of X. If the source chooses "part of" rather than "most of" under such

circumstances, not only would the language be less precise, it might be perceived as less direct.

Frequency modifiers can be used to inform the receiver as to whether an event occurs seldom or more persistently. A state of affairs can happen "often" or "sometimes." Although "sometimes" implies that the action of the verb occurs seldom, it can also be employed as a vague reference to action which occurs often. The certainty of a statement should help determine its specificity. A state of affairs that will "probably" happen is more worthy of attention than one which could "possibly" happen.

Extensity markers of nouns serve as additional intensity modifiers. The size, breadth or density of the referent can be increased to render it more intense. For example, X can be large, or it can be enormous; X can be narrow, or it can be skinny; X can be dense or it can be impenetrable.

Finally, referents that are accompanied by language which connotes activity and strength might come across as more intense. Verb action which occurs "quickly," as opposed to "gradually," will contribute to a more dynamic text just as noun properties which are "powerful" rather than "weak" do.

Message intensity

In their review of the language variable literature, Bradac et al. (1979) lament the variety of operationalizations of intensity used, yet they admit there has been a

surprising consistency among the results generated by these divergent manipulations. Interestingly, Bradac et al. call for more homogeneity in the treatment of language intensity, yet they insist on including the results from opinionation studies in their review of the language intensity literature. Opinionated statements involve inclusion of propositions accepting (for agreement with the source) or rejecting (for disagreement with the source) the audience. Such propositional manipulations are not the same as manipulations of word intensity and appear to produce different results.

The consistency of outcomes described by Bradac et al. implies that it is the social impact of the marker rather than its specific lexical form (e.g., noun versus adverb) that matters. Without denying that particular terms can convey more or less intensity, the point can be made that different grammatical forms yield similar perceptions of intensity, highlighting the robustness of the intensity marker concept.

Lexical items which by themselves may appear as weak intensity markers may, as a group, reliably bring about perceptions of intensity. There are several reasons for the unreliability of individual markers. Words which are intended to function as an intensity marker may not be perceived as such by a receiver. In addition to these episodes of failed messages, there are episodes of misperceived messages. A word that is not intended as a lexical

marker by a source may, in fact, be perceived as such by a receiver. These perceptual breakdowns, added to the qualifying effects of context and culture render the lexical marker probablistic in nature. Some intensity markers should be less vulnerable than others to misinterpretations due to shifting context or culture. These intense items are described as more powerful markers. The more powerful the markers chosen, the less chance there will be for breakdowns in the perception of intensity.

The probablistic nature of markers works to ensure a less than perfect correlation between manipulated and perceived intensity. Depending on the power of the markers chosen for inclusion in a message, a greater or lesser number of markers will have to be present in a message for it to be perceived as intensely as the source intends. If weak intensity markers are selected, then a greater number of markers-per-word will be needed to ensure proper perception. This notion of markers-per-word is also known as marker density. If strong intensity markers are chosen, a lower density would be required for proper perception.

The density of intensity markers per word has varied from study to study. Thompson (1965) used the lowest density experimental messages, with an intensity marker every 17 words. Kochevar's (1967) messages were only slightly more intense, including a marker of intensity per 16 words. Bowers (1963) employed an estimated intensity marker per word ratio of one-to-twelve. The messages of McEwen and

Greenberg (1970) had the highest density, with an intensity marker every nine words. Compared to the density present in a sample of intense naturalistic discourse (one marker for every 20 words), the density in these experimental messages may be slightly higher than what occurs in everyday life.

To determine if there was a relationship between density and perceptions of intensity, the correlation between manipulated and perceived intensity was computed where possible. The weakest relationship between manipulated and perceived intensity appeared in Thompson's data, r=.21. Kochevar's perceived intensity measure correlated .34 with manipulated intensity. McEwen and Greenberg did not provide enough data to compute the manipulated with perceived intensity correlation. They did, however, measure "source dynamism" with items typically used to scale perceived intensity, i.e., "confident-unsure," "decisive-indecisive" and "aggressive-timid."

Correlations between dynamism and other variables in the McEwen and Greenberg study were compared to the correlations between perceived intensity and other variables. This comparison revealed that the correlation between the dynamism and perceived intensity measure was near perfect. The dynamism scale, as a measure of perceived intensity, correlated .48 with manipulated intensity. Burgoon et al. (1974, experiment 1) gave no indication of the density of the experimental messages used. They did, however, provide

enough data so that the correlation between manipulated and perceived intensity could be calculated; it was estimated to be .15.

The average correlation, weighted by the number of subjects in each study, between manipulated and perceived intensity across the Thompson, Kochevar, McEwen and Greenberg and Burgoon et al. studies was .27. If the impact of manipulated intensity on source and attitude change variables is mediated by perceptions of intensity, then a correlation of .27 between manipulated and perceived intensity would serve to attenuate the relationship between manipulated intensity and the other variables measured in this study.

Message coherence

Of the two dimensions of intensity, emotionality and specificity, the clarity of a message will depend most heavily on the lexical precision expressed by the source. Use of broad semantic categories, euphemisms and neutral modifiers should contribute to perceptions of a vague message. Both Kochevar and McEwen and Greenberg measured the clarity of the high and low intensity messages in their designs. Kochevar's data reveals a moderately small correlation between manipulated intensity and clarity ($r=.18$), whereas the McEwen and Greenberg results show a moderate relationship between the two variables ($r=.46$). McEwen and Greenberg also calculated the correlation between perceived intensity and clarity. The larger correlation between

perceived intensity and clarity (r=.78) suggests that the relationship between manipulated intensity and clarity is mediated by perceived intensity.

The clarity or coherence variable was integrated into the present design as a possible mediator of source perceptions and attitude change. A more coherent message should result in higher credibility ratings and more attitude change.

Receiver perceptions of source

Bradac et al. (1979) propose that intensity is inversely related to evaluations of source competence when the source strikes a position discrepant from that of the audience. They are less clear on the relationship between intensity and competence ratings when the source and audience agree. A closer look at the intensity literature, however, unveils this proposition as false. Whether intensity is inversely or directly related to perceptions of competence is not a function of the degree of source-audience agreement. The direction of the correlation between intensity and competence depends on whether manipulated intensity or perceived intensity is covaried with ratings of competence.

The link from manipulated intensity to perceptions of source competence has been demonstrated to be extremely weak. Thompson found that the correlation between these two variables, for his two experimental messages, was -.06 and .02. The correlation between these two variables in

the Kochevar study was -.17. McEwen and Greenberg's results show a correlation of -.10). Burgoon et al. (1974, experiment 3) also offer results which reflect inverse relation between manipulated intensity and ratings of source competence. A re-analysis of the Burgoon et al. credibility data for the experimental-groups-only subjects yields a correlation of -.27 between manipulated intensity and the source competence measure. The weighted average correlation for these studies is -.10.

The correlation between manipulated intensity and source competence can be contrasted to the correlation between perceived intensity and source competence. Further inspection of the McEwen and Greenberg findings reveals that the correlation between perceived intensity and competence is .37. The fact that the competence variable correlates less well with the manipulated than the perceived intensity variable provides evidence that the perceived intensity variable mediates the relationship between manipulated intensity and competence. Manipulated intensity also correlates weakly with perceptions of source character. Kochevar's data produce a correlation of -.14 between the two variables. McEwen and Greenberg's data reveal a correlation of -.04, and Burgoon et al.'s data a correlation of -.03. Thompson, on the other hand, found correlations of .15 and .12 between manipulated intensity and perceived character. The weighted average correlation across these four studies is .00.

The results for manipulated intensity can be contrasted to the results for perceived intensity. In the McEwen and Greenberg data, perceptions of character are more strongly linked to perceived intensity (r=.28) than manipulated intensity. This finding implies that the relationship between manipulated intensity and both competence and character is mediated by the perceived intensity variable.

Source sociability was not measured by either Kochevar or McEwen and Greenberg. Only Burgoon et al. included a sociability measure of the source in their study. The correlation between perceptions of sociability and manipulated intensity was approximately zero (r=-.07). Perceived intensity data was not available from Burgoon et al.

Intensity and attitude change

Bradac et al. (1979), in their state of the art article, find support for three propositions relating intensity to attitude change. Two of these propositions will be discussed under the heading of expectancy theory. The remaining proposition posits an interaction between intensity and receivers' initial attitudes. According to Bradac et al., intensity facilitates attitude change when receivers' initial attitudes are congruent with the source, but that intensity inhibits change when initial receiver attitudes are discrepant. A quantitative analysis of the relationship between manipulated intensity and attitude change shows that this proposition is false. In fact,

there is remarkable consistency among intensity studies, regardless of initial receiver attitude.

Bowers (1963) found an interaction between manipulated intensity and direction of attempted influence. He selected four sources and four topics based on pretesting to show that subjects were neutral with little variability on all sources and receivers. Receivers who listened to speeches attacking a position were more persuaded by low intensity than high intensity messages. Receivers who listened to speeches supporting a position were more persuaded by high intensity than low intensity messages. Across studies, however, this interaction does not hold up.

Charmichael and Cronkhite (1965) induced frustration in half of their subjects, and left the other half as control subjects. Both frustrated and control receivers were exposed to either high or low intensity messages. Among the control subjects, there was no significant difference in attitude change between those receiving high intensity or low intensity messages. The correlation between manipulated intensity and attitude change among unfrustrated receivers was near zero ($r=.03$). Burgoon et al. (1974, experiment 2) induced fear in half of their subjects, and left the other half as control subjects. Both fearful and control receivers were exposed to either high or low intensity messages. Among the control subjects, there was no significant difference in attitude change among those receiving high intensity or low intensity messages. The

correlation between manipulated intensity and attitude change among unfearful receivers was near zero (r=-.01).

Kochevar (1967) found that high intensity messages were only slightly more persuasive than low intensity messages. This difference was not significant. The correlation between manipulated intensity and attitude change was not significant (r=.04). McEwen and Greenberg's (1970) replication of Kochevar's study demonstrated an equally slight impact of intensity on attitude change. The correlation between manipulated intensity and attitude change in the McEwen and Greenberg data is .08. Thompson (1965) also found a meager relationship between language intensity and persuasion, reporting correlations of .03 for one experimental message and .05 for another.

This review suggests that the correlation between manipulated intensity and attitude change is small or perhaps even nonexistent. If the impact of manipulated intensity on attitude change is mediated by perceived intensity, coherence, and source competence, then a small correlation would be expected.

A number of alternative explanations might be offered for a diminished correlation between these two variables. First, there is the possibility of weak manipulations of intensity. The average correlation between manipulated and perceived intensity in the Kochevar, McEwen and Greenberg, and Burgoon et al. studies, however, was moderate (r=.27).

Second, there might have been trouble with the dependent variable in these studies. Few authors reported the reliability of their attitude measures. Bowers used 15 semantic differential items to measure attitudes. Thompson included ten items in his attitude scale. Kochevar and McEwen and Greenberg both used four attitude scales. Carmichael and Cronkhite used 16 semantic differential items to measure attitudes. The lowest reliability for a single attitude measure item in the present study was .71. Using this worst case estimate of the reliability of a single item, and applying that value to the Spearman-Brown formula, it is possible to calculate the approximate reliability of a four and fifteen item attitude scale.

To achieve a scale reliability of .90 or higher, the average single item reliabilities would have to be above .70 for a four item scale and above .38 for a fifteen item scale. These calculations suggest that even the four item attitude scales used by Kochevar and McEwen and Greenberg had reliabilities of .90 or higher. The Bowers and Carmichael and Cronkhite attitude scales most certainly achieved high reliability. Unreliable dependent measures were not attenuating the correlation between manipulated intensity and attitude change.

A third explanation for small intensity-attitude change correlations involves the interaction of intensity with source variables like gender or credibility. If, for example, intensity interacts with credibility such that a

high credible source produces more attitude change with high intensity language than when using low intensity language, and a low credible source produces more attitude change with low intensity language than when using high intensity language, then comparison of the high intensity and low intensity means, without regard to credibility might show no impact for intensity. It should be noted, however, that disordinal interactions can only cancel out a main effect when two or more levels of a variable are present. In other words, if only male sources were used in a study, then the lack of relationship between intensity and attitude change could not be attributed to a source sex by intensity interaction. Likewise, if credibility is controlled, it cannot interact with intensity to produce no overall attitude change.

Credibility was controlled in the Bowers, Carmichael and Cronkhite, Kochevar, and McEwen and Greenberg studies. A credibility by intensity interaction could not, then, account for the low correlation between manipulated intensity and attitude change in these studies. Gender was controlled in the Kochevar and McEwen and Greenberg studies. A gender by intensity interaction might be used to explain the low correlation found between intensity and attitude change in the Bowers and Carmichael and Cronkhite studies, but their results are nearly identical to those from other studies which held gender constant. Neither the intensity by credibility nor intensity by source gender interactions

could be responsible for the small impact of intensity in these studies.

To summarize, manipulated intensity appears to have a moderate effect on perceived intensity; the reliability of the dependent measures in the studies reviewed was adequate; interactions of intensity with other source variables could not have had a cancelling effect on overall attitude change. The failure of these alternative explanations of the low intensity-attitude change correlation lends support to the mediation explanation.

Reactance theory

Expectancy theory as it appears in Burgoon et al. (1974) was in large part based on reactance theory (Brehm, 1968). Reactance theory postulates that certain acts cause a persuader to be viewed as a threat to the receiver. For example, Brehm (1966) postulated that receivers will feel threatened when a speaker tells them what to conclude. Brehm might have suspected that a threatening source would lead to source derogation and hence to decreased persuasion. However, in a study by Brehm and Brehm (reported in Brehm, 1966) a threatening source was less persuasive than a nonthreatening source even though no source derogation occurred (p. 113). On the basis of these results Brehm (1966) concluded that reactance theory was supported in general but that source derogation was not necessary to the predicted persuasion effect.

However, Brehm's modified theory still does not fit the data. The prediction that there will be source derogation was not derived from the assumption of reduced persuasion, it was derived from the assumption that the receiver would perceive source assertion as a threat. If there is no source derogation, then there is no direct basis for interpreting assertion as a threat. Brehm believed there was evidence for threat in the apparent boomerang in one condition; the high-threat "professor as source" (high credibility) condition. However, the data in that condition showed 8 subjects changed away and 6 subjects changed toward the message. This is not significantly different from a 50-50 split. That is, change in this condition is not significantly different from 0. In the high-threat "high school student as source" (low credibility) condition of this same experiment, where an even larger boomerang effect was expected, 12 subjects changed toward the message and 2 changed away; the exact opposite of boomerang.

In a previous study (Brehm, 1966) using a college student as source employing high-threat, 11 subjects shifted away and 11 subjects shifted toward the message. Thus, in that study too, there was no boomerang and hence no evidence that assertion is perceived as a threat. Thus, the data in Brehm's two studies tends to disconfirm the assumption that assertion is perceived as a threat.

Brehm assumed that the data showed reduced persuasion as a function of "threat" (where Brehm's "threat" merely

means "assertion"). However, the data are quite equivocal. The data for the professor-as-source show less persuasion in the assertion condition than in the nonassertion condition. However, the data for the student source shows higher persuasion for the source who uses assertion. The data in the previous study show higher persuasion for nonassertion. Summing across the results for all three sources, 46 changed toward and 18 away for assertion versus 29 toward and 18 away for nonassertion. The difference in change between assertion and nonassertion conditions is not significant. Thus, there may be no reduced persuasion due to assertion or threat in the Brehm studies to explain.

Expectancy theory

Burgoon et al. (1974) used reactance theory as a model for their expectancy theory of the effect of language intensity on persuasion. They hypothesized that certain uses of high or low intensity language would violate linguistic norms and hence "be perceived as a threat to attitudinal freedom and produce a negative change away from the position advocated by the source." They too found no evidence of source derogation. Like Brehm, they claim that their theory does not need to assert source derogation in order to obtain the postulated persuasion effect. However, this leaves no mechanism to explain a boomerang effect if it were to occur. Moreover, this circumvention does not address the issue of perceived threat. If there is no source derogation, then what reason is there to assume that

there was a violation of linguistic norms? Even if there were a violation of linguistic norms, what reason is there to assume that the violation was perceived as a threat?

Given that there was no source derogation in Burgoon et al., there would only be evidence of perceived threat if there were boomerang in the conditions where there is supposed to be threat. In experiment 1, which examined the impact of the source gender by manipulated intensity interaction on persuasion, there are 8 conditions; two of which were presumed to have induced threat due to violations of linguistic norms. Change was in the direction of the message in all eight conditions; there was no boomerang. In experiment 3, which examined the impact of the manipulated intensity by manipulated credibility interaction on persuasion, there were 4 conditions; 1 of which was presumed to have induced threat. Attitude change was in the direction of the message in all 4 conditions; there was no boomerang. That is, there was no boomerang in any of the conditions in the Burgoon et al. data and hence no evidence of perceived threat.

If a source is perceived as threatening, then it would be difficult for receivers to maintain complete positive regard for the source. Compared to receivers who are not threatened, those experiencing threat should derogate the source. In other words the assumption of perceived threat implies source derogation. Thus, expectancy theory logically implies findings of source derogation. Burgoon et

al. present no argument to refute this logical implication. That is, the "expectancy theory" of their discussion section is not logically consistent with the expectancy theory of their postulates in their introduction. The following discussion will consider expectancy theory as they lay it out in the introduction. The original expectancy theory might still fit data in a domain in which there is actual perceived threat.

Burgoon et al. (1974) used expectancy theory to generate a number of hypotheses about language intensity. These hypotheses were derived from the conventional source credibility assumptions about attitude change by adding hypotheses about linguistic norms. The logical content of expectancy theory is consistent with the familiar source credibility hypothesis: the higher the credibility of the source, the more persuasive the message. In particular, any manipulation which leads to source derogation is predicted to reduce attitude change correspondingly.

The key assumption of expectancy theory is that sources are judged on the basis of linguistic norms. In particular, when receivers expect low intensity language from a source and instead the source delivers high intensity language, receivers should perceive this as a threat to their attitudinal freedom. As a consequence, the threatening source should be derogated. Such results have been found in connection with obscenity (Bostrom, Baseheart & Rossiter, 1972; Mulac, 1972). However, the extension of this

hypothesis to less volatile lexical markers has not been established.

Finally, specific hypotheses can be derived from Burgoon et al's assumptions as to specific linguistic intensity norms. One hypothesis is that the norm for a male source is high intensity language, and the norm for a female source is low intensity language. A second specific hypothesized linguistic norm is that the norm for a highly credible source is high intensity language, and the norm for a low credibility source is low intensity language. Bradac et al. (1979) see these "norms" as powerful, frequently stating how sources will behave as though they did not have the option to violate the norms (pp.264-266). The next two sections provide background for these hypotheses.

Intensity and gender

The tendency toward more standard or socially prestigious speech on the part of females in their lexical choices has been well established. Key (1975) found that women are inclined to use reduplicated adjectives, like "teeny-weeny," but men were not. Women have been found to use more qualification in definite numerical references (Swacker, 1975) and fewer obscenities in other languages (Head, 1977) and in English (Bailey & Timm, 1976). These studies suggest that females employ stigmatized forms less frequently and are less willing to depart from linguistic

norms. One study also found that men appear to speak with greater average intensity (Markel, Prebor & Brandt, 1972).

Aries (1976) reported that female utterances often contained references to self, feelings, affiliation with others, home and family; male utterances are typified by competition and teasing, sports, and physical aggression. Kramer (1978a,1978b) discovered that males are perceived as more demanding, boastful, loud, forceful, authoritarian, aggressive and frank; females are perceived as more friendly, gentle, and enthusiastic.

If attention seeking, dominant language is used more often by males, and subdued, submissive language is the norm for females, then sex related expectations may develop. Burgoon et al. (1974, experiment 1) go beyond this by postulating that these expectations become norms. They hypothesize that intense language is required from men and that intense language is required from women. A logical extension of this reasoning is that a male who uses low intensity language will be derogated and a female who uses high intensity language will be derogated. If derogation leads to reduction in persuasibility, the a male source who uses low intensity language or a female who uses high intensity language should also be less persuasive. Burgoon et al. (1974, experiment 1) found that males were more persuasive using high intensity language, and females more persuasive using low intensity language. Data on source derogation was not available, however, and this interaction

has not been replicated. The following expectancy theory hypothesis will be retested: *Females will be more persuasive using nonintense language than intense language, and males will be more persuasive using intense language than nonintense language.*

Intensity and credibility

The hypothesis that credibility has an impact on persuasion has an extensive empirical history. Source credibility has often been found to affect attitude change, but these effects are moderated by two key variables: personal involvement and topic knowledge (Chaiken, 1980; Petty & Cacioppo (1981); Stiff, 1986). If a receiver is highly involved with a topic or has extensive knowledge on a topic, there will be little or no impact of source credibility on attitude change. These limits extend to all predictions made by expectancy theory.

The hypothesis that violation of linguistic norms leads to source derogation has been largely untested. There is some evidence that obscenity can lead to source derogation; although the effects are much smaller than investigators had anticipated (Bostrom, Baseheart & Rossiter, 1972; Mulac, 1972). However, the form of language intensity of interest in the current study is defined by emotionally laden or denotatively specific markers. The hypothesis that there are norms for lexical intensity has had little or no study.

Indirect evidence concerning this hypothesis can be found by looking at source credibility effects as a function of the lexical intensity of the message. The section which reviewed the impact of manipulated intensity on perceived credibility suggests that there will be a small derogation of sources who use high intensity language. The average correlation between manipulated intensity and perceived source competence across the Kochevar, McEwen and Greenberg and Burgoon et al. studies was -.13. The average correlation between manipulated intensity and perceived source character in these three studies was -.05.

Expectancy theory implies that the effect of intensity on attitude change is mediated by source credibility. Consider the possibility that the maximum impact of intensity on attitude change is dependent on the impact of intensity on credibility ratings. That is, the implied impact of manipulated intensity on attitude change would be even smaller than those found for source perception. Thus, corresponding to the small derogation effect, there would be a tiny difference on attitude change. That is, if more intense sources are perceived to be a little less competent, then they will be slightly less persuasive. The reverse should be true for less credible sources. Thus, expectancy theory might predict that a high credibility source who uses low intensity or a low credibility source who uses high intensity will be derogated for violating linguistic norms. If derogation leads to reduced

persuasibility, then a high credibility source who uses low intensity language or a low credibility source who uses high intensity language should be less persuasive.

The only study to test this hypothesis was Burgoon et al. (1974, experiment 3). Based on the reported sums of squares, the Burgoon et al. source perception data were reanalyzed with only the four experimental groups. Rather than include two control groups in the ANOVAs for the five dimensions of credibility (competence, character, composure, sociability, and extroversion), only the means for the low intensity-high credibility, high intensity-high credibility, low intensity-low credibility, and high intensity-high credibility experimental conditions were included in the new ANOVAs. The reanalysis demonstrated that the credibility by intensity interactions reported by Burgoon et al. on the competence, character and composure measures, and the main effect due to credibility on the sociability were due to inclusion of the high credibility and low credibility control groups in the original analysis. ANOVAs computed on only the four experimental groups yielded only a main effect for intensity on the competence and composure dimensions. Low intensity sources were perceived as significantly more competent and composed than high intensity sources.

The reanalysis of the Burgoon et al. data clearly rejects the hypothesis that the high credibility source who uses low intensity language and the low credibility source

who uses high intensity language were derogated. If there had been source derogation differences they could have been used to explain corresponding (though smaller) differences in attitude change. Burgoon et al. (1974, experiment 3) confused this issue in their own work by looking at the wrong dependent variable. In their own findings for attitude change, they found no intensity by credibility interaction. Indeed, even their main effects for source credibility and intensity were not significant.

Burgoon et al. confused the issue by ignoring their findings on the attitude measure (Known Interval Scale), which has been found to correlate very highly with traditional semantic differential measures of attitude ($r>.90$, Burgoon & King, 1974). Instead, they looked at their findings for a very uncommon dependent variable, latitude of acceptance. The latitudes did show an interaction in the direction predicted for attitude change. Given the contradictory findings on the true attitude measure, and the absence of derogation effects, the Burgoon et al. data sharply disconfirm their hypothesis.

The current study will provide another test for the expectancy theory prediction that there is a high intensity norm for high credible sources and a low intensity norm for low credible sources. In view of the fact that none of the existing data show the predicted source derogation effects, and none of the studies show the predicted attitude change effects, it seems unlikely that such effects will be found.

The second hypothesis, then, is formulated as follows: ***high credibility sources will be more persuasive using intense language than nonintense language, and low credibility sources will be more persuasive using nonintense language than intense language.***

CHAPTER 2

Methods

Overview

High or low intensity messages were attributed to high or low credibility sources, described as either male or female. Each receiver was presented with one of these eight message-source combinations and were asked to complete items designed to measure their pretest attitudes toward the experimental topic, and posttest attitudes toward source, message and topic. Receiver perceptions of the source were measured with three credibility scales: competence, character and sociability. Perceptions of source dynamism were captured with the message scales. Attitude toward message was measured with an intensity and a coherence scale. Receiver gender and cultural and linguistic background were also measured. The receivers used in all phases of this experiment were students in lower division Speech or Communication courses at University of Hawaii, Manoa. A total of 412 students participated in the various phases of the experiment. Of the 294 surveys completed during the main part of the experiment, seven were discarded due to large amounts of missing data. A preliminary analysis of the data indicated that neither the receiver gender variable or the linguistic or cultural background of the receiver contributed significantly to the variance of the measured variables.

Materials

The topic of the experimental messages concerned the legalized sale of heroin to addicts in the United States. The topic was selected on the basis of prestudy results which showed extreme opposition to the proposition with little variation (*mean= 6.10, s.d.= 1.38*) on a seven interval semantic differential scale, averaged across four items. The four semantic differential scales used in the prestudy were: *good/bad, wise/foolish, pleasant/unpleasant, valuable/worthless*. The position of the positive and negative bipolar ends were randomly switched on the instrument to discourage response set.

Messages

High and low intensity experimental messages were created by inserting lexical items varying in emotionality or specificity into a template text. Effort was made to avoid changing the propositional content or the magnitude of the consequences between the two versions. The messages were presented as newsprint (right justified, proportionally spaced copy, 35 columns wide). The text appeared to have been cut from a magazine then pasted on to a gray background. The high and low intensity versions can be found in Appendix A.

High and low intensity nouns and noun phrases used as part of the lexical manipulation can be found in Figure 2. More specific nouns, such as "bloodstream" were used in the high intensity version and less precise nouns like "body"

Figure 2. High and low intensity noun and noun phrases.

health/well-being
bloodstream/body
shockingly impure/less than pure
crimes/unpleasantries
secondary complications/side effects
disease/illness
dealers/suppliers
mafia/underworld
"black market"/"underground economy"
savagery/immorality
craving/need
hard cash/money
the necessities of life/other health related products
suffering/discomfort
income/resources
corruption/wrong-doing
death/persons lost

in the low intensity version. The high intensity version also contained affect laden language ("shockingly impure") and the low intensity version unemotional language ("less than pure").

Figure 3 contains the high and low intensity adjectival modifiers. The high intensity version was characterized by affect laden language ("alarming") whereas the low intensity version was characterized by items devoid of emotion ("unexpected"). Specific adjectives like "many," and general adjectives like "some" can be found in the high and low intensity messages, respectively.

Verbs and verb forms found in the high and low intensity messages are shown in Figure 4. Specificity was varied with the inclusion of lexically precise verbs like "stifle" in the high intensity version and more general verbs such as "regulate" in the low intensity version. Emotionality was manipulated by inserting euphemistic verbs ("passed away" instead of "died") in the low intensity version.

Figure 5 presents the high and low intensity adverbials in the experimental messages. Lexically specific adverbs like "each year" were inserted in the high intensity message, and less precise adverbs "occasionally" can be found in the low intensity message. Emotionality and hence high intensity was reflected in the disphemism "slowly and miserably." The emotionally sterile alternative "gradually" can be found in the less intense message.

Figure 3. High and low intensity adjectives.

sleazy/shady
expensive/costly
many/some
alarming/unexpected
no/minimal
defenseless/unsuspecting
vicious/unkindly
adequate/quality
rusty/unsanitary
blunt/unsharp
filthy/unsterilized
over/around
innocent/ordinary
agonizing/uncomfortable
exorbitant/inflated
obsolete/untimely
great/some
much less/relatively
striking/potential
outrageous/inflated
all/part
desperate/eager
wretched/imperfect
barbaric/questionable
astronomical/large
painful/undesirable
continued/present
essential/wanted
basic/desired

Figure 4. High and low intensity verbs and verb forms.

died/passed away
cruelly imposed/set
forced/persuaded
injecting/introducing
safe/approved
puncture the skin/improvise
life-threat/health-risk
inability to locate/difficulty locating
accidentally overdosing/injecting more than they need
afford/pay
doggedly persists/seems to exist
enforce/observe
causes/may cause
contend/suggest
die horribly/pass away
are/may be
corrupted/tempted
will/could
perpetrate/engage in
driven/attempt
plummet to the point of being simply/become almost
stifle/regulate
long known that/sometimes wondered if
surrendering/using
inflict great damage/have some effect
cursed/inconvenienced
victimized/imposed upon
committed/performed
satisfy/indulge
endure/tolerate
promoted by/associated with
prevent/put a damper on
deliver a crushing blow/be of help
stamping out/subtly decreasing

Figure 5. High and low intensity adverbials.

slowly and miserably/gradually
legally/readily
almost always/from time to time
carelessly/casually
not as/no more
demonstrated conclusively/hopefully
solely/perhaps
strongly/tentatively
hugely/somewhat
never/not appear to be
recently/may at some point in the distant future
severely/reasonably
certainly/possibly
each year/occasionally
directly/loosely
truly/somewhat
without question/with any luck
widely/a bit more
abruptly/slowly
definitely/probably

Together, the manipulation of intensity markers yielded a message which had an intense or nonintense lexical item approximately every four words. The average sentence contained five intensity markers. As a pretest of the manipulated language intensity in the two articles, 23 students read the high intensity version of the message, and 21 students read the low intensity version. Perceived intensity was measured with twelve seven-interval semantic differential items. A preliminary cluster analysis using *PACKAGE for the PC* (Hamilton & Hunter, 1985) revealed that four items lacked internal consistency. Two of the items, *emphatic/hesitant* and *dynamic/undynamic*, were weakly correlated with the other items. This pair seems to tap delivery more than language use. These items may have varied less than the others, considering that delivery is irrelevant to written messages.

Two other items which lacked internal consistency were retained for later use on the grounds that they correlated highly with some items, but not with others. Given that the sample size was only 44, such fluctuations may have been due to sampling error. The means for the high and low intensity recipients were compared using twelve t-tests. Results from the pretest appear in Table 1. Judging from the consistently significant t-values, it was concluded that the two versions differed substantially along the language intensity dimension.

Table 1. Mean perceptions of high and low intensity versions of experimental message in the prestudy.

	high intensity		low intensity		t-value df=42
item					
strongly worded/ weakly worded	2.57	*1.16*	3.14	*1.15*	-1.654*
nonopinionated/ opinionated	6.04	*1.15*	5.19	*1.69*	1.973*
intense/nonintense	2.61	*1.27*	3.76	*1.45*	-2.817*
meek/aggressive	5.65	*1.23*	5.29	*1.31*	0.958
certain/uncertain	2.17	*.94*	2.90	*1.76*	-1.742*
unforceful/forceful	5.52	*1.16*	4.48	*1.33*	2.785*
unrestrained/ restrained	2.17	*1.19*	2.76	*1.30*	-1.565*
indecisive/decisive	5.91	*1.08*	4.95	*1.66*	2.295*
confident/unsure	2.65	*1.34*	3.76	*1.55*	-2.554*
reserved/frank	5.00	*1.38*	4.62	*1.50*	0.877

* $p<.05$

NOTE: *standard deviations appear next to means in italics.*

Sources

The credibility and gender of the source were manipulated with pretextual messages which can be found in Appendix B. The author of the heroin article was described as either John or Joan. Author sex was further emphasized by inclusion of four gender-specific pronouns. The dimensions of competence, character, and sociability were manipulated within the pretext message. The phrases designed to create the impression of high and low credibility can be found in Figure 6.

As a pretest of the credibility manipulations, 42 students read the description of the high credibility male source, and 43 students read the description of the low credibility male source. The pretest of the credibility manipulation was conducted using 60 seven-interval, semantic differential items. The items were analyzed using *PACKAGE*, and examined for internal consistency and parallelism. Due to the overwhelming trend of significant differences along the three dimensions of credibility, it was concluded that the two pretext versions effectively manipulated perceptions of the source. Based on the *PACKAGE* analysis, the 30 most internally and externally consistent items were chosen for use in the main study.

The 10 deleted items designed to measure source competence were: *intelligent/unintelligent, expert/inexpert, powerful/powerless, authoritative/unauthoritative, experienced/inexperienced, trained/untrained, qualified/*

Figure 6. Phrases designed to create impressions of high and low credibility.

HIGH CHARACTER	LOW CHARACTER
The following article appeared in Science magazine as part of a feature story on legalizing the sale of heroin to addicts in the U.S.	The following article appeared in Liquid Sky, a tabloid published by a group lobbying for the legalized sale of heroin to addicts in the U.S.
HIGH COMPETENCE	**LOW COMPETENCE**
Its author, John T. Eldrege, is currently assistant director of the DEA (Drug Enforcement Agency).	Its author, John Eldrege, is a former "addict"...He claims, however, to have never once sold the drug.
He earned a Ph.D. in physiology from Berkeley, and an M.A. in criminology from Stanford University.	He is studying for a degree in sociology at Foothill Community College.
Peabody Award for her book on heroin use in America.	
HIGH SOCIABILITY	**LOW SOCIABILITY**
He is a popular guest on radio talk shows...	His current work for a heroin lobbying group has made him unpopular in the community.
He is viewed as an exciting, rising star by the Washington D.C. political establishment.	...who admits trying heroin to impress friends who viewed him as dull and a nobody.

unqualified, important/unimportant, strong/weak, and correct/incorrect. Some of these items require receivers to make judgments about the source which would be difficult given the information supplied (e.g., *trained/untrained*) other items are perhaps too vague (e.g., *authoritative/ unauthoritative*), and some are issue specific (e.g., *correct/incorrect*). Table 2 contains the 10 remaining items measuring the competence dimension of credibility. All 10 items showed significantly different ratings of high and low credibility sources.

Of the 8 deleted items designed to measure character, six involve vague moralistic reference: *good/bad, ethical/ unethical, sinful/virtuous, right/wrong, just/unjust, partial/impartial*. The other two discarded items, *stable/ unstable* and *sensible/not sensible*, hint at mental imbalance. Table 3 contains the 12 remaining items tapping the character dimension of credibility. Nine of the twelve items revealed significantly different means for the high and low credibility sources.

Of the 11 deleted items included to measure source sociability, three appeared to be more measures of homophily (*shares my attitude/does not share my attitude, like me/ unlike me, similar/dissimilar*), four items seemed to tap a style dimension (*polished/boorish, refined/crude, imaginative/simple, intellectual/unreflective*), and four were more general interpersonal variables (*ambitious/ ambitious, dependable/undependable, superior/inferior, and*

Table 2. Mean perceptions of high and low credibility sources on the measures of competence in the prestudy.

	high credibility		low credibility		t-value df=83
item					
uneducated/educated	6.52	*1.15*	4.33	*1.36*	8.037*
knowledgeable/ unknowledgeable	1.79	*1.07*	3.86	*1.49*	-7.357*
successful/ unsuccessful	2.00	*0.86*	4.70	*1.26*	-11.498*
reputable/ disreputable	2.38	*1.29*	4.77	*1.34*	-8.364*
scholarly/ unscholarly	1.83	*0.96*	4.12	*1.33*	-9.049*
unskilled/skilled	5.52	*1.13*	3.65	*1.21*	7.357*
admirable/ contemptible	2.83	*1.17*	4.47	*1.53*	-5.512*
inept/capable	5.64	*1.10*	3.65	*1.34*	7.469*
incompetent/ competent	5.62	*1.13*	3.86	*1.23*	6.885*
uninformed/informed	6.00	*0.99*	4.14	*1.66*	6.272*

* p<.01

NOTE: *standard deviations appear next to means in italics.*

Table 3. Mean perceptions of high and low credibility sources on the measures of character in the prestudy.

	high credibility		low credibility		t-value df=83
item					
dishonest/honest	5.00	*1.19*	4.88	*1.38*	0.415
reliable/unreliable	2.48	*1.15*	4.33	*1.38*	-6.711*
dangerous/safe	5.12	*1.33*	3.77	*1.60*	4.230*
subjective/objective	4.05	*1.56*	3.30	*1.49*	2.253*
responsible/ irresponsible	2.57	*1.02*	4.88	*1.33*	-8.989*
selfish/unselfish	4.29	*0.83*	4.12	*1.35*	0.694
biased/unbiased	3.38	*1.40*	2.74	*1.26*	2.212*
unfair/fair	4.71	*0.86*	4.00	*1.13*	3.262*
irrational/rational	5.26	*1.11*	3.49	*1.56*	6.024*
believable/ unbeliveable	2.74	*1.06*	4.16	*1.70*	-4.616*
open-minded/ closed-minded	3.26	*1.08*	3.44	*1.55*	-0.620
trustworthy/ untrustworthy	3.12	*1.17*	4.35	*1.27*	-4.635*

* p<.01

NOTE: *standard deviations appear next to means in italics.*

interested/disinterested). Table 4 contains the remaining items indicating perceptions of source sociability. All of the nine items demonstrated significantly different means for the high and low credibility sources.

Measurement

Receivers' attitudes toward the topic, message and source were all measured using seven-interval, semantic-differential items. Attitudes toward the topic discussed in the article were pretested and posttested using ten items. Receivers' attitudes toward the message itself were tested using fifteen items to measure coherence, and ten items to measure perceived intensity. Attitudes toward the source were measured with the 30 items identified by pre-test as most sensitive to manipulations of the three credi-bility dimensions.

The intensity, pretest-posttest, coherence and credi-bility measures were examined for internal consistency and parallelism with the confirmatory factor analysis routine *PACKAGE*. This program produces a factor loading matrix and calculates standardized coefficient alpha reliabilities for each cluster of items. All items were reflected within their clusters prior to this analysis.

The factor loading matrix for the ten pretest and post-test attitude measures appears in Table 5. The items were highly correlated with one another, and their correlations with other clusters were parallel. The coefficient alpha reliability equaled .98 for both attitude scales.

Table 4. Mean perceptions of high and low credibility sources on the measures of sociability in the prestudy.

	high credibility		low credibility		t-value df=83
item					
likable/dislikable	4.62	*1.41*	5.84	*1.56*	-3.774*
unfriendly/friendly	5.12	*1.15*	4.33	*1.38*	-6.711*
sociable/unsociable	2.86	*1.05*	4.02	*1.32*	-4.506*
harsh/gentle	5.10	*1.05*	3.12	*1.18*	8.148*
cruel/kind	4.57	*0.86*	3.98	*1.16*	2.673*
gloomy/cheerful	4.45	*0.86*	3.21	*1.23*	5.398*
unconcerned/ concerned	5.69	*0.98*	4.44	*1.71*	4.125*
awful/nice	4.33	*1.00*	3.65	*1.31*	2.694*
pleasant/unpleasant	3.38	*0.91*	4.26	*1.27*	-3.636*

* p<.01

NOTE: *standard deviations appear next to means in italics.*

Table 5. Factor loading matrix for pretest and posttest attitude measures.

	pret	post	inte	soci	comp	char	cohe
PRETEST ITEMS							
foolish/wise	91	55	06	-10	-10	-14	01
bad/good	92	62	04	-14	-16	-18	-05
incorrect/correct	91	59	01	-12	-16	-18	-04
inappropriate/ appropriate	92	60	05	-12	-12	-14	-03
undesirable/ desirable	91	58	05	-14	-15	-19	-00
detrimental/ beneficial	91	61	05	-13	-16	-20	-01
harmful/helpful	89	60	06	-16	-18	-21	-05
wrong/right	87	59	04	-13	-14	-16	-03
disadvantageous/ advantageous	86	60	-01	-12	-15	-14	-05
impractical/ practical	84	60	01	-12	-16	-18	-02
POSTTEST ITEMS							
inappropriate/ appropriate	59	91	-06	-30	-37	-40	-26
detrimental/ beneficial	60	92	-04	-36	-40	-47	-24
foolish/wise	59	91	-05	-31	-38	-42	-25
bad/good	61	92	-02	-33	-38	-43	-23
undesirable/ desirable	65	93	-01	-33	-38	-45	-23
disadvantageous/ advantageous	58	89	-09	-32	-42	-43	-31
incorrect/correct	60	90	-06	-29	-37	-40	-27
harmful/helpful	61	90	-03	-32	-38	-43	-25
wrong/right	59	87	01	-31	-32	-39	-23
impractical/ practical	56	85	-08	-30	-37	-39	-29

Note: *decimals have been omitted.*

One item was eliminated from the intensity scale due to nonunidimensionality and lack of parallelism. This item was *unrestrained/restrained*. The factor loadings for the remaining eight items appear in Table 6. This cluster showed slight departures from unidimensionality, but the item correlations with other clusters were parallel, so all eight items were retained. The coefficient alpha reliability for the intensity scale equaled .91.

Three dimensions of source credibility were analyzed with the confirmatory procedure. The coefficient alpha reliabilities for the sociability, competence and character scales were .91, .96 and .92, respectively. The factor loading matrix for the credibility items appears in Table 7.

Three of the items measuring the coherence of the message were eliminated because they lacked parallelism with the remaining twelve items. Those items were: *ineffective/effective, illogical/logical* and *unsensible/sensible*. Hamilton and Burgoon (1984) found this scale to have high unidimensionality and coefficient alpha reliabilities of .93 and .94 for a thirteen item scale. In keeping with these findings, the twelve coherence items were internally consistent, with a coefficient alpha reliability of .94. The items in this cluster were also externally consistent. The factor loading matrix for the coherence scale appears in Table 8.

Table 6. Factor loading matrix for the language intensity measure.

	pret	post	inte	soci	comp	char	cohe
INTENSITY ITEMS							
meek/aggressive	06	02	85	-06	20	-01	36
not intense/intense	01	00	79	02	26	04	36
not forceful/forceful	03	-01	74	-07	21	-03	36
weakly/strongly worded	-03	-07	71	02	28	12	33
unsure/confident	02	-10	79	04	33	11	49
reserved/frank	09	-04	70	09	32	12	47
indecisive/decisive	01	-08	70	05	28	11	47
uncertain/certain	04	00	64	04	24	09	42

Note: *decimals have been omitted.*

Table 7. Factor loading matrix for the credibility measures.

	pret	post	inte	soci	comp	char	cohe
SOCIABILITY ITEMS							
awful/nice	-16	-34	05	83	72	76	47
unpleasant/pleasant	-14	-30	-09	78	61	70	36
unfriendly/friendly	-07	-19	02	76	49	55	30
unsociable/sociable	-10	-22	08	74	58	61	39
gloomy/cheerful	-07	-25	-04	69	48	56	31
dislikable/likable	-12	-26	07	82	73	79	47
cruel/kind	-12	-34	02	75	69	76	46
COMPETENCE ITEMS							
uninformed/informed	-10	-31	22	54	73	65	55
unbelievable/believable	-17	-38	31	63	80	80	61
contemptible/admirable	-19	-39	15	74	74	76	55
unconcerned/concerned	-15	-31	18	63	71	62	49
incompetent/competent	-13	-37	38	59	86	71	69
unskilled/skilled	-12	-30	45	55	82	64	64
uneducated/educated	-09	-32	32	62	84	71	60
inept/capable	-12	-34	28	67	79	75	60
unscholarly/scholarly	-10	-33	38	59	80	68	57
unknowledgeable/knowledgeable	-19	-33	27	64	84	71	58
unsuccessful/successful	-15	-37	25	70	80	76	57
unreflective/intellectual	-14	-31	29	65	83	73	55
disreputable/reputable	-16	-33	16	68	77	79	49
CHARACTER ITEMS							
irrational/rational	-18	-43	18	68	80	82	58
unreliable/reliable	-14	-34	18	63	79	78	55
irresponsible/responsible	-20	-42	19	72	82	81	58
dangerous/safe	-20	-41	03	69	65	71	39
unfair/fair	-10	-41	11	76	74	85	51
dishonest/honest	-11	-31	15	74	72	75	51
subjective/objective	-09	-23	-04	33	32	45	17
unselfish/selfish	-14	-24	-03	64	57	66	30
untrustworthy/trustworthy	-13	-34	10	71	73	82	44
biased/unbiased	-11	-24	-17	39	36	56	16
closed/open minded	-12	-30	00	57	50	62	27

Note: *decimals have been omitted.*

Those items which proved to be internally and externally consistent within each cluster were unit weighted and summed to generate measures of pretest and posttest attitudes, perceived intensity, coherence and perceived sociability, competence and character. These composite scores were used in all subsequent analyses.

Table 8. Factor loading matrix for the coherence measure.

COHERENCE ITEMS	pret	post	inte	soci	comp	char	cohe
disorderly/orderly	-01	-24	45	43	61	46	85
unclear/clear	10	-25	34	48	65	52	82
choppy/smooth	13	-13	43	38	56	43	79
confused/organized	-02	-24	48	37	58	43	81
awkward/graceful	02	-17	31	49	58	47	74
indirect/direct	05	-12	60	17	42	23	72
rambling/coherent	-03	-22	39	35	52	42	71
fragmented/complet	00	-19	39	36	51	43	72
vague/specific	-04	-19	46	29	49	39	71
confusing/ understandable	-09	-28	39	49	62	50	76
purposeful/aimless	-13	-32	28	39	49	42	61
inconsistent/ consistent	-05	-19	36	35	52	37	66

Note: *decimals have been omitted.*

CHAPTER 3

Results

Manipulation checks

To ensure that the language intensity induction worked, the eight experimental conditions were compared on the perceived intensity scale. The means in Table 9 were obtained by dividing the summated score on the intensity scale by the number of items on the scale to preserve the natural range from 1 to 7. Those means indicate that for each of the four sources the "high intensity" message was judged more intense than the "low intensity" message. A three way analysis of variance was conducted on the perceived intensity scores. The results of this test appear in Table 10. Only the main effect for intensity was significant ($F(1,279)=44.43$, $p<.01$). This significant effect is evidence of an effective intensity induction.

The effectiveness of the credibility manipulation was tested by comparing scores in the eight experimental conditions on the competence, character and sociability scales. Mean scores on the competence scale, which can be found in Table 11, indicate that the "high credibility" induction led to greater perceived competence than the "low credibility" induction. Results of a three-way ANOVA appear in Table 12. Only the main effect for credibility achieved significance.

Table 13 presents the mean scores on the character scale. The three-way ANOVA appears in Table 14. Only the

Table 9. Mean perceived intensity of source in eight experimental conditions.

	Female source		Male source	
	low intensity message	high intensity message	low intensity message	high intensity message
low credibility source	4.88 *1.22* n=36	5.36 *1.03* n=38	5.02 *1.05* n=34	5.92 *0.76* n=33
high credibility source	5.01 *1.27* n=40	5.88 *0.88* n=33	4.96 *1.02* n=35	5.93 *0.78* n=38

NOTE: *standard deviations appear in italics.*

Table 10. F-values for ANOVA on perceived intensity scores.

Source of variation	F-value
main effects	
intensity	44.43*
credibility	1.53
sex	2.08
interactions	
intensity by credibility	.86
intensity by sex	1.14
credibility by sex	2.00
intensity by sex by credibility	.43

* Pr[F(1,279)]<.01

NOTE: *Cochrans homogeneity of variance test C(34,8)=.19,p>.05*

Table 11. Mean perceived competence of source in eight experimental conditions.

	Female source		**Male source**	
	low intensity message	high intensity message	low intensity message	high intensity message
low credibility source	4.66 *0.96* n=36	4.63 *1.09* n=38	4.56 *1.27* n=34	4.41 *1.48* n=33
high credibility source	4.98 *1.38* n=40	4.95 *1.50* n=33	5.19 *0.96* n=35	5.20 *1.02* n=38

NOTE: *standard deviations appear in italics.*

Table 12. F-values for ANOVA on perceived competence scores.

Source of variation	F-value
main effects	
intensity	.12
credibility	12.82*
sex	.04
interactions	
intensity by credibility	.07
intensity by sex	.01
credibility by sex	1.87
intensity by sex by credibility	.08

* Pr[F(1,279)]<.01

NOTE: *Cochrans homogeneity of variance test C(34,8)=.16,p>.05*

Table 13. Mean perceived character of source in eight experimental conditions.

	Female source		Male source	
	low intensity message	high intensity message	low intensity message	high intensity message
low credibility source	4.14 *0.98* n=36	3.89 *1.08* n=38	3.90 *1.16* n=34	3.49 *1.28* n=33
high credibility source	4.35 *1.27* n=40	4.05 *1.24* n=33	4.47 *0.90* n=35	4.18 *0.98* n=38

NOTE: *standard deviations appear in italics.*

Table 14. F-values for ANOVA on perceived character scores.

Source of variation	F-value
main effects	
intensity	5.66**
credibility	9.51*
sex	.48
interactions	
intensity by credibility	.01
intensity by sex	.09
credibility by sex	2.83
intensity by sex by credibility	.09

* Pr[F(1,279)]<.01
**Pr[F(1,279)]<.05

NOTE: *Cochrans homogeneity of variance test C(34,8)=.16,p>.05*

main effects for credibility and intensity were significant. The high credibility induction led to greater character attributions than the low credibility induction ($F(1,279)=9.51$, $p<.01$). Examination of the means in Table 13 reveals that for all four sources, employing low intensity created more positive character attributions than high intensity ($F(1,279)=5.66$, $p<.05$).

Mean scores for source sociability appear in Table 15. The three-way ANOVA can be found in Table 16. The main effect for credibility approached significance ($F(1,279)=3.25$, $p=.07$). The pattern of the means with regard to intensity on the sociability measure resembled that on the character measure. For all four sources, the source of the low intensity message was perceived as more sociable than the source of the high intensity message, producing a significant main effect for intensity ($F(1,279)=4.31$, $p<.05$).

Overall, the credibility induction appears to have effectively influenced receiver perceptions on the competence and character scales. The results of the manipulation checks also suggest that the more competent, higher character source was viewed as more sociable than the less competent, lower character source. These results reflect an effective credibility induction, but point to an interesting side effect of intensity: it decreases perceptions of source trustworthiness and sociability.

Table 15. Mean perceived sociability of source in eight experimental conditions.

	Female source		Male source	
	low intensity message	high intensity message	low intensity message	high intensity message
low credibility source	4.33 *1.00* n=36	4.20 *0.94* n=38	4.15 *1.11* n=34	3.81 *1.23* n=33
high credibility source	4.42 *1.17* n=40	4.09 *1.00* n=33	4.52 *0.80* n=35	4.32 *0.81* n=38

NOTE: *standard deviations appear in italics.*

Table 16. F-values for ANOVA on perceived sociability scores.

Source of variation	F-value
main effects	
intensity	4.31*
credibility	3.25**
sex	.25
interactions	
intensity by credibility	.01
intensity by sex	.03
credibility by sex	3.49
intensity by sex by credibility	.48

* Pr[F(1,279)]<.05
**Pr[F(1,279)]=.07

NOTE: *Cochrans homogeneity of variance test C(34,8)=.25,p>.05*

Table 17. Mean perceived coherence of source in eight experimental conditions.

	Female source		Male source	
	low intensity message	high intensity message	low intensity message	high intensity message
low credibility source	5.09 *1.01* n=36	5.25 *1.19* n=38	5.22 *1.19* n=34	5.51 *1.18* n=33
high credibility source	5.43 *1.05* n=40	5.54 *1.10* n=33	5.43 *1.01* n=35	5.68 *0.98* n=38

NOTE: *standard deviations appear in italics.*

Table 18. F-values for ANOVA on perceived coherence scores.

Source of variation	F-value
main effects	
intensity	2.45
credibility	3.92*
sex	1.09
interactions	
intensity by credibility	.02
intensity by sex	.26
credibility by sex	.26
intensity by sex by credibility	.00

* Pr[F(1,279)]<.05

NOTE: *Cochrans homogeneity of variance test C(34,8)=.14,p>.05*

The means for perceived coherence are presented in Table 17. The three-way ANOVA appears in Table 18. The pattern of the means in Table 17 suggests that more credible sources are perceived to be more coherent than less credible sources. Also, high intensity messages are seen as more coherent than low intensity messages. Inspection of Table 18, which contains the F-values obtained from the ANOVA, shows a main effect for credibility ($F(1,279)=3.92$, $p<.05$) but not intensity ($F(1,279)=2.45$, $p=.11$).

Attitude change

A three-way ANOVA was performed to test the attitude change hypotheses. The means for the eight experimental conditions on the attitude change measure can be found in Table 19 and the three-way ANOVA in Table 20. There was a significant intensity by credibility by sex interaction effect ($F(1,279)=4.87$, $p<.05$). The hypothesized interaction between intensity and credibility could only be interpreted with restriction, due to the significance of the higher order, disordinal interaction among the intensity, credibility and gender variables. Separating the male source data from the female source data, it becomes clear that the intensity by credibility interaction is supported only by the male means and not the female means.

For males, high intensity appeared to work better for high credibility sources than low credibility sources, and low intensity appeared to work better for low credibility sources than high credibility sources. For females,

Table 19. Mean attitude change toward topic in eight experimental conditions.

	Female source		Male source	
	low intensity message	high intensity message	low intensity message	high intensity message
low credibility source	.528 *.867* n=36	.410 *1.40* n=38	.682 *1.40* n=34	2.46 *.973* n=33
high credibility source	.580 *1.12* n=40	.455 *1.24* n=33	3.46 *1.25* n=35	12.08 *1.58* n=38

NOTE: *standard deviations appear in italics.*

Table 20. F-values for ANOVA on attitude change scores.

Source of variation	F-value
main effects	
intensity	.09
credibility	1.48
sex	.73
interactions	
intensity by credibility	4.75*
intensity by sex	1.27
credibility by sex	.80
intensity by sex by credibility	4.87*

* Pr[F(1,279)]<.05

NOTE: *Cochrans homogeneity of variance test C(34,8)=.19,p>.05*

however, low intensity appeared to work better, regardless of their credibility. In view of the differential differential reaction to male and female sources, an outlier analysis was conducted on the attitude change measure. No outliers were detected within any of the eight experimental groups.

Test of the causal model

Various causal models were tested using PATH (Hunter and Hamilton, 1985). Fit of the various competing models was compared using a sum of squared errors (*SSE*) value. An error matrix produced by taking the difference between the obtained and reproduced correlations (reproduced based on the path coefficients), and squaring then summing the values in this error matrix, is the basis for the *SSE* value. The significant intensity by credibility by gender interaction raised the possibility that the causal models representing receiver reaction to male and female sources might differ. For this reason separate path models were constructed for male and female sources.

The correlations among the three exogenous and six endogenous variables were computed and corrected for attenuation for the female source data (see Table 21). The model of best fit (*SSE = .192*) is illustrated in Figure 7. The female source model offers an additive model in which intensity contributes to perceived intensity and credibility effects competence. The influence of manipulated credibility on perceived competence appears slight. The

Table 21. Original correlations for the female source data.

	mint	cred	ibyc	pint	cohr	comp	char	soci	a-ch
mint	100	-06	-01	29	06	-02	-13	-11	-05
cred	-06	100	-03	12	15	13	09	00	02
ibyc	00	-03	100	08	-02	00	-01	-05	00
pint	28	11	07	100	61	48	25	13	17
cohr	05	14	-01	56	100	74	62	56	27
comp	-02	13	00	44	70	100	91	79	35
char	-12	08	-01	23	57	85	100	85	33
soci	-10	00	-04	12	51	73	77	100	23
a-ch	-05	02	00	15	25	33	30	21	100

NOTE: *decimals have been omitted.*
corrected (above diagonal) and uncorrected (below diagonal) for attenuation (n=147).

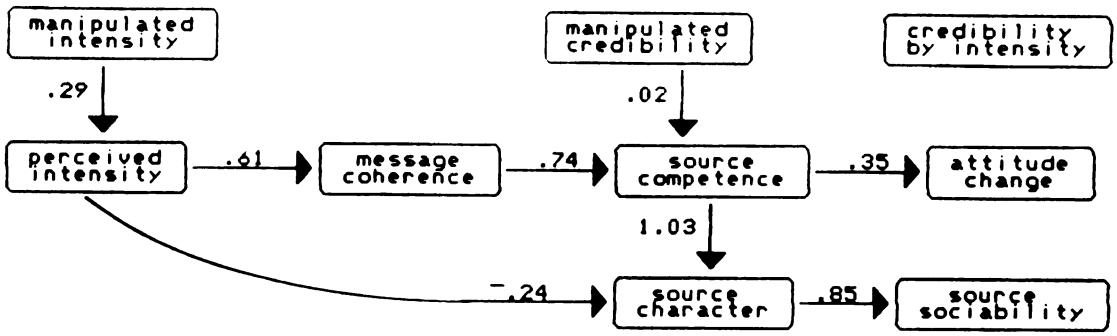

Figure 7. Causal model for female source data.

Table 22. Reproduced correlations and errors for female source data.

	mint	cred	ibyc	pint	cohr	comp	char	soci	a-ch
mint	100	-06	-01	29	18	13	06	05	05
cred	00	100	-03	-02	-01	01	02	01	00
ibyc	00	00	100	00	00	00	00	00	00
pint	00	14	08	100	61	45	22	19	16
cohr	-12	16	-02	00	100	74	61	52	26
comp	-15	12	00	03	00	100	92	78	35
char	-19	07	-01	03	01	-01	100	85	32
soci	-16	-01	-05	-06	04	01	00	100	27
a-ch	-10	02	00	01	01	00	01	-04	100

NOTE: *decimals have been omitted.*
reproduced correlations above diagonal, errors below diagonal.

nonsignificant intensity by credibility interaction term was not linked to any other variable in the female model. The reproduced correlations and the error matrix based on the path coefficients in Figure 7 can be found in Table 22.

Correlations among the exogenous and endogenous variables were computed and corrected for attenuation for the male source data (see Table 23). The model of best fit is illustrated in Figure 8. The male source model differs from female model mainly in the influence of the exogenous variables. In particular, in the male model, credibility appears to have more of an influence on competence.

Examination of the competence, character and sociability score means indicated that the high credibility male who used low intensity language was not derogated for violating linguistic expectations. Likewise, the low credibility male who used high intensity language was not derogated for violating linguistic expectations on any of the three perceived credibility dimensions. Although expectancy theory predicted the pattern among the means on the attitude change measure for the male data via violation of linguistic expectations, the theory could not explain the pattern of means on any of the perceived credibility variables. This finding, along with the fact that the interaction variable did not influence either of the two intervening variables that belonged in the model, suggested that the interaction variable either had a direct impact on

Table 23. Original correlations for the male source data.

	mint	cred	ibyc	pint	cohr	comp	char	soci	a-ch
mint	100	03	04	49	13	-02	-15	-13	09
cred	02	100	01	00	09	30	29	22	12
ibyc	04	01	100	04	00	04	02	03	25
pint	46	00	03	100	48	21	-10	-11	03
cohr	12	09	00	44	100	65	46	46	35
comp	-01	29	03	19	61	100	89	80	34
char	-14	27	02	-08	42	84	100	91	44
soci	-12	21	03	-10	42	75	82	100	34
a-ch	09	11	24	02	33	32	40	31	100

NOTE: *decimals have been omitted.*
corrected (above diagonal) and uncorrected (below diagonal) for attenuation (n=140).

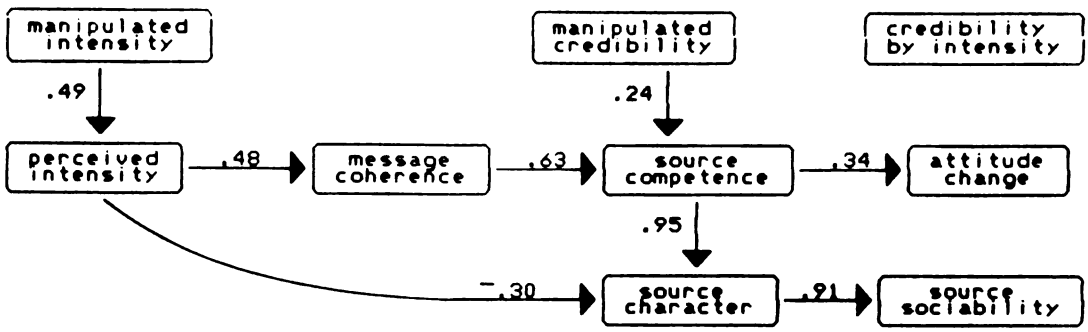

Figure 8. Causal model for male source data.

attitude change toward topic, or did not belong in the model.

To test the contribution of the interaction variable to the model, a path was added from it to the attitude change variable. The fit of this model, which was otherwise identical in specification to the female model, was compared to the fit of a model in which the interaction-to-attitude change path was deleted. The fit of the model without the interaction to attitude change path (*SSE = .243*) was only slightly worse than the fit of the model with the path (*SSE = .181*). The difference between the two degrees of fit is due entirely to the .25 entry in the error matrix for the correlation between the interaction term (intensity by credibility) and attitude change. This entry in the error matrix was created by deleting a direct path between the interaction and attitude change variables in the model. This value squared accounts for the difference in the fit between the two models. For this reason, the male model was considered without the interaction-to-attitude change path. The matrix of reproduced correlations and errors can be found in Table 24.

As noted, the only difference between the male and female models, once the interaction variable had been removed, lay with the impact of the credibility variable on perceived competence. The path between these two variables was .24 in the male source data, and .02 in the female source data. This difference was not significant (*p>.05,*

Table 24. Reproduced correlations and errors for male source data.

	mint	cred	ibyc	pint	cohr	comp	char	soci	a-ch
mint	100	03	04	49	24	16	00	00	05
cred	00	100	01	01	01	25	23	21	08
ibyc	00	00	100	02	01	01	00	00	00
pint	00	-01	02	100	48	31	-01	-01	10
cohr	-11	08	-01	00	100	63	46	42	21
comp	-18	05	03	-10	02	100	86	78	34
char	-15	06	02	-09	00	03	100	91	29
soci	-13	01	03	-10	04	02	00	100	27
a-ch	04	04	25	-07	14	00	15	07	100

NOTE: *decimals have been omitted.*
reproduced correlations above diagonal,
errors below diagonal

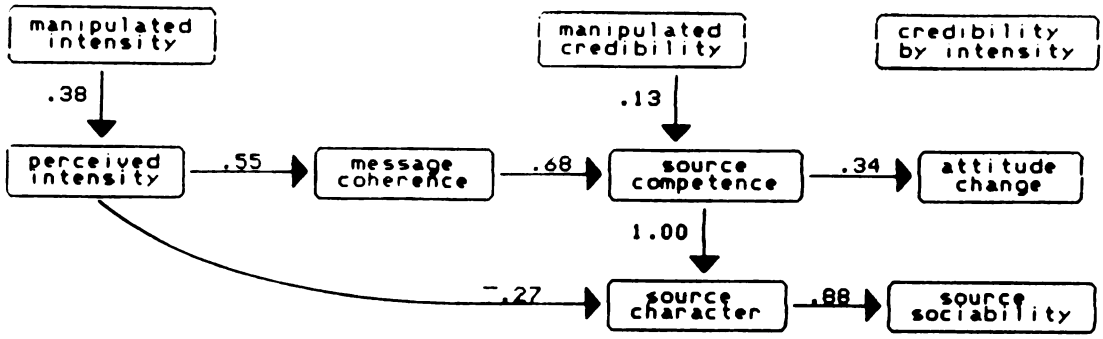

Figure 9. Causal model for combined source data.

Table 25. Original correlations for the combined source data.

	mint	cred	ibyc	pint	cohr	comp	char	soci	a-ch
mint	100	-02	02	38	09	-02	-14	-12	02
cred	-01	100	-01	07	12	21	19	11	08
ibyc	01	-01	100	06	-01	02	00	-01	13
pint	36	06	06	100	55	36	09	02	11
cohr	08	11	00	50	100	70	54	51	31
comp	-02	20	01	33	66	100	90	79	34
char	-13	17	00	08	50	84	100	88	38
soci	-11	10	-01	01	46	74	80	100	29
a-ch	02	07	12	09	29	32	35	26	100

NOTE: *decimals have been omitted.*
corrected (above diagonal) and uncorrected (below diagonal) for attenuation (n=287).

two-tailed test). Due to almost identical specification of the two models, the male and female data were pooled. The correlations among the exogenous and endogenous variables were computed and corrected for attenuation (see Table 25). The fit of the combined source data model shown in Figure 9 (*SSE = .170*), was better than that of the male only or the female only source data (using the same causal model). For this reason, the combined source data model was selected as the best representative of the data (see Table 26).

The influence of the intensity and credibility variables in the combined model appears to be additive rather than interactive. Level of manipulated intensity does not directly influence any other variable except the level of perceived intensity. Greater perceived intensity improves the coherence of the message, which in turn increases source competence. Through coherence, intensity has a positive impact on competence. Intensity also decreases the sociability of the source, via character attributions. Increased initial credibility improves competence ratings, and positively influences attitude change toward topic. The model describes the mediated impact of intensity. Language intensity acts to improve the coherence of the source's message, thereby making the source appear more competent, and ultimately more persuasive.

Table 26. Reproduced correlations and errors for combined source data.

	mint	cred	ibyc	pint	cohr	comp	char	soci	a-ch
mint	100	-02	02	38	21	14	04	03	05
cred	00	100	-01	-01	00	12	13	11	04
ibyc	00	00	100	01	00	00	00	00	00
pint	00	08	05	100	55	38	11	09	13
cohr	-12	12	-01	00	100	68	53	47	23
comp	-16	09	02	-02	02	100	90	79	34
char	-18	06	00	-02	01	00	100	88	30
soci	-15	00	-01	-07	04	00	00	100	27
a-ch	-03	04	13	-02	08	00	08	02	100

NOTE: *decimals have been omitted.*
reproduced correlations above diagonal, errors below diagonal

CHAPTER 4

Conclusions

Intensity and credibility

The major finding of this study concerns how intensity combines with other variables to influence attitude change toward topic. Intensity does not appear to interact with source variables to promote persuasion. Instead, the model which best fits the data is one which assumes that intensity and credibility work in an additive fashion. Interactions between intensity and source variables in studies which examine the link between intensity and attitude change appear to be isolated cases; possibly due to sampling error.

The Burgoon et al., experiment 3 means for attitude are reproduced in Table 27. There is a small effect for source credibility in the usual direction (although it is not statistically significant). There is a nonsignificant effect for intensity: the low intensity messages were slightly more effective than the high intensity messages. This exactly matches the findings for the female source data presented in Table 19. The source in the Burgoon et al. (1984, experiment 3) study was male. When examined in combination, these two findings run counter to the source *sex by credibility* interaction. This suggests that the *intensity by credibility* interaction found for male sources *in the present study was* due to sampling error. It was not

Table 27. Mean attitude scores on prime attitude measure.

	low intensity	high intensity
low credibility	3.30 n=24	3.31 n=24
high credibility	3.77 n=26	3.24 n=25

NOTE: *from Burgoon, Jones & Stewart (1974), experiment 3*

replicated in the female source data and did not occur in any other study.

Most importantly, this interaction did not fit in any of various structural models attempted. The only way the intensity by credibility interaction could be tied to attitude change in the male source data was to include a direct link between the two variables, bypassing coherence, competence and all other variables.

The source perception results also pose a problem for expectancy theory. Burgoon et al. assumed that high credibility sources are expected to be more intense than low credibility sources. They refer to those expectations as linguistic "norms." Suppose this assumption is true. Sources who violate linguistic norms were predicted to be less persuasive than sources who met those norms. Yet sources who did not behave according to expectations were not derogated by receivers in this study or in others. The principle of source derogation did not fit the data, for the intensity by credibility norm or the intensity by source gender norm. Either these norms hypothesized by Burgoon et al. do not exist, or those sources who match the norms are not more persuasive.

<u>The magnitude of the language intensity effect</u>

The effect of manipulated intensity on attitude change was almost invisible for either the observed effect (r=.02) or the estimated effect from the path model (r=.05). Why was there so little effect of language intensity? The most

plausible explanation concerns the mediation of intensity effects by message and source variables. Four other possible explanations must be considered before the mediation hypothesis can be accepted. First, the language intensity manipulation might have failed. Second, a small observed effect for intensity might have occurred due to poor measurement of the dependent variable, i.e., low reliability of the attitude change measure. Third, strong effects due to intensity could have been cancelled out by averaging across a disordinal interaction. Fourth, a distraction effect may have occurred which would produce attitude change without a corresponding change in perceptions of source.

Consider the possibility of a failed intensity manipulation. The correlation between manipulated and perceived intensity was .38 (corrected for error of measurement). This shows that intensity was effectively manipulated. The experimental messages contained one intensity marker per four words, or five markers per sentence. Intensity marker density in the present study was more than twice as dense as those used by other researchers. McEwen and Greenberg (1970) reported a marker to word ratio of one to nine. Bowers (1963) used a ratio of one to twelve, and Kochevar a ratio of one to sixteen. The strength of the intensity manipulation in the present study was twice that reported anywhere else. Examination of the relationship between intensity marker density and size of the correlation

between manipulated and perceived intensity, however, does not support a direct link between density and perceived intensity. Increased density has not resulted in greater perceived intensity.

The second explanation is based on measurement artifacts. Could the reliability of the attitude change measure have been too low to detect the impact? The attitude pretest and posttest each had a reliability of .98, and the reliability of the change measure was .95. Moreover, the correlation of .02 between manipulated intensity and attitude change reported in this study was corrected for attenuation. Thus the small impact of intensity was not an artifact of bad measurement of attitude.

Third, consider the possibility of an interaction between intensity and source gender or source credibility. The intensity by source gender interaction did not occur in the data. The the intensity by credibility by gender interaction was shown to be due to an intensity by credibility interaction in the male source data. Female source data did not show an interaction between credibility and intensity. In the previous section, it was concluded that the perceived competence ratings did not demonstrate the derogation consistent with such a credibility by intensity interaction. The findings on the male source data, then, appear to be an artifact, perhaps of sampling error. If neither the intensity by source sex or intensity by credibility interactions are legitimate, then they can not

explain the low intensity-attitude change correlation. Other than the intensity manipulation, the message was used in this experiment was identical in all conditions. Any other interactions were therefore controlled.

Fourth, receivers could have been distracted by sources violating linguistic norms. Such distraction might produce attitude change by inhibiting counterarguing, yet not cause negative evaluation of the sources. Two problems plague this explanation. First, in the present study, the credibility by intensity interaction occurred only for the male source data. Why would a distraction effect not happen for female sources who violated linguistic norms? Nothing in the distraction literature suggests that distraction effects are gender specific. Second, in his meta-analysis of the distraction literature, Buller (1986) concludes that distraction caused by focus on speaker characteristics can produce attitude change, but that such changes "are due to credibility judgments based on these speaker characteristics and not on the distraction per se." He goes on to specify a mediated causal ordering of variables, noting the indirect effects of distraction, "causing the receiver to form judgments concerning the credibility (and more generally the personality) of the speaker that affect subsequent attitude change." Distraction hypotheses do not explain how source evaluations could be independent of attitude change. In fact, the literature points to a interdependence between source evaluation and attitude change.

Finally, consider the possibility that the effect of the intensity manipulation was mediated by intervening variables. If there is a causal chain from the intensity manipulation to attitude change, then the correlation between the two will be product of the path coefficients along the chain. This would drastically dilute the possible impact of the intensity manipulation. To see that this was true, compare the impact of the intensity manipulation on perceived intensity (r=.38) to the impact on attitude change (r=.02). If there were no mediating variables, these correlations would be equal. Instead, the correlation is lower for attitude change than for perceived intensity as predicted by the causal model which asserted that the impact would be mediated by message and credibility variables.

The fit of the path model bore out the mediation hypothesis. In particular, intense language was linked to perceived intensity (r=.38); perceived intensity was tied to perceptions of message coherence (r=.55); coherence had an effect on source competence (r=.68); and competence effected attitude change (r=.34). The product of path coefficients is (.38)(.55)(.68)(.34)=.05 which is almost exactly the correlation of .02 observed (particularly if the sampling error in that correlation is taken into account).

The data clearly support the mediation explanation of the small intensity effect. The potential effect of r=.38

was reduced to an effect of .05 by the mediation of the other variables which transmit the language intensity effect to an impact on attitude change.

Message intensity: content versus lexical strategy

The impact of the language intensity manipulation on perceived intensity was not large in this study; a correlation of .38 or a d statistic of .82. Why was the impact no larger? There are two possibilities. First, it may be that perceptions of intensity are more effected by the content of the message than by the lexical choice of the words that express that content. Polemics may be a matter of what is said rather than the tone of the markers selected. Second, it may be that this particular study failed to have a large effect for some methodological reason other than insufficient density: (1) perhaps natural communications such as political dialogue or newspaper columns use higher densities of intensity markers; (2) the study population may have been peculiar; perhaps Hawaiians use different words to mark intensity); or (3) perhaps the topic of heroin legalization was too innocuous to permit a perception of intensity.

An examination of the density markers found in political dialogue or newspaper editorial indicates that some writers make a point of using very low intensity language. There appear to be many documents similar to the low intensity message used in this study. However, this study sought to manipulate every fourth word in a message. It is

a rare polemicist who would scan nearly every word for possible intensity. A cursory check of readily available materials like newspaper editorials tends to bear out this impression. There may be rare documents in the popular press as extreme as the high intensity message used in the current study, the contrast in this study is an extreme one, even by nonacedemic standards.

The subjects in this research were Hawaiian university students. One might worry that students from non-standard ethnic backgrounds might not perceive the same intensity markers as the author of the message for this study. However, when the pretest materials were broken down by ethnicity, no differences in perceived intensity were found. Thus, the markers chosen in this study are not idiosyncratic to mainland American speakers. Finally, there is the topic of heroin legalization. Hawaiian students are not neutral on this topic, as shown by the prestudy and the pretest data. Most students are strongly anti-heroin. During subject debriefings, there were no signs that they found the message trivial or boring.

There is no apparent methodological reason for the limited impact of lexical marker manipulation on message intensity. This study probably presented a much greater contrast in lexical intensity than either past communication research or the popular press. Instead, the correlation of .38 may represent a very large impact for lexical intensity. If so, then message content may have a much

greater impact on perceptions of intensity than does lexical strategy. Certainly there have been some very dry documents that have produced extreme emotional reactions.

The importance of message content, relative to more specific lexical tactics, points the way for researchers to investigate higher level communicative strategies. It may be that "intensity" has a large effect on receivers when it involves an intense, assertive interpersonal strategy, rather than the micro-strategy of language intensity.

Reconciling past intensity research

Four propositions offered by Bradac et al. (1979) as "state of the art" are worth reconsidering. The language intensity literature appears to provide little support for any of the four propositions. They had predicted that intensity interacts with source credibility and with source gender to affect attitude change. Neither of these proposed interactions was supported by the data of this study. A look across the intensity literature shows the intensity by gender interaction without replication. Likewise, the intensity by credibility interaction has actually occurred only once, in the present study. That outcome was best explained as sampling error. These results severely undermine the two interaction generalizations Bradac et al. advocate. The two remaining generalizations proposed by Bradac et al. will be discussed following a synthesis of the language intensity literature.

As a rigorous test of the mediation explanation of intensity effects, the findings from the present study were compared to data from other intensity research. Not all the data sets reviewed had as many variables measured as the current research, but most provided useful information for comparison. Table 28 contains the correlations of manipulated intensity with perceived intensity, coherence, competence, character and attitude change. All of these correlations are uncorrected for attenuation, to facilitate comparison. The correlations from these other studies were averaged for possible contrast with the results of the present study. Comparison of the average effects across studies with the presently obtained data reveals a remarkable resemblance between the two columns. The similarity is even more striking if the correlations reproduced from the path model are used in place of the obtained correlations from the current study. These parallel findings provide strong evidence for the mediation explanation.

As a further test of the similarity between the findings of the present study and those of past research, the correlations between perceived intensity and measures of coherence (clarity), competence, character and attitude change were computed for the one study for which intensity perception data were available, McEwen and Greenberg (1970). The results of this comparison can be found in Table 29. Again, the obtained correlations from the present study match up well against those from the past

Table 28. Correlations with manipulated intensity

	receiver perception variable					
	inte	cohr	comp	char	soci	attc
Study						
Kochevar (n=55)	31	12	02	-10	--	04
Thompson (n=107)	21	--	-02	13	--	04
McEwen & Greenberg (n=111)	48	43	-09	-04	--	08
Carmichael & Cronkhite (n=17)	--	--	--	--	--	03
Burgoon et al:exp 1 (n=144)	15	--	--	--	--	00
Burgoon et al:exp 2 (n=56)	--	--	--	--	--	-01
Burgoon et al:exp 3 (n=99)	--	--	-27	-03	-06	-06
Average across studies	**27**	**33**	**-10**	**00**	**-06**	**02**
Present study: obtained (n=287)	**38**	**09**	**-02**	**-14**	**-11**	**02**
Present study: reproduced	38	21	14	04	03	05

NOTE: *decimals have been omitted.*

Table 29. Correlations with perceived intensity.

Study	*receiver perception variable* cohr	comp	char	attc
McEwen & Greenberg (n=111)	57	39	28	19
Present study: obtained (n=287)	50	33	08	09
Present study: reproduced	55	38	11	13

NOTE: *decimals have been omitted.*

research. The few discrepancies which do appear in Table 29 disappear if the reproduced correlations are used for comparison with the McEwen and Greenberg data. It is also worth noting that the reproduced correlations should be a better estimate of the population values than the obtained correlations. The remarkable match between the manipulated and perceived intensity results of the extant intensity research and those of the present study testify to the merit of the mediation explanation.

In contrast to how snugly the mediation hypothesis fits the data, the two remaining generalizations by Bradac et al. appear to be in direct conflict with the literature. They claim language intensity interacts with direction of attempted influence: when the source takes a position consistent with that of the audience, intensity facilitates persuasiveness; when the source takes a position discrepant with that of the audience, intensity inhibits persuasiveness. As previously noted, this interaction does not seem to be supported by intensity findings. In the present study, manipulated intensity was weakly related to attitude change. Across studies, there is neither a moderately positive nor a moderately negative relationship between intensity and attitude change, in any of the experiments --regardless of the position taken by the source.

Finally, the mediation model reveals an interesting relationship between language intensity and ratings of source credibility. Bradac et al. postulate that intensity

reduces ratings of source competence. Yet the path between perceived intensity and perceived competence (mediated by coherence) is a strong, positive one. Conversely, the path between perceived intensity and perceived character is a moderately negative one. The consequences of employing intense language, then, are improved competence ratings, but lower character ratings. Attitude change, which is a function of competence ratings, is positively effected by intensity. Sociability ratings, which are a function of character ratings, are negatively effected by intensity. The intense source may gain on the task dimension, being seen as more competent, but loose along the social or interpersonal dimension, viewed by receivers as efficient but unpleasant.

Appendices

Appendix A. High and low intensity experimental messages

HIGH INTENSITY

The laws regulating the sale of heroin in this country have frequently done more harm than good, both to society and to the individual who must use heroin. The public is confronted with an astronomical number of crimes committed each year in every major city by addicts desperate for money to support their habit. The addict suffers not from heroin, but from painful secondary complications which are promoted by the drug's continued illegality.

In England, where the government controls the legal sale to addicts, heroin-related crimes are nonexistent. Crime is not caused by the drug itself, but by completely outdated laws which prohibit its use. In the United States, addicts are driven to commit crimes against innocent citizens to obtain money to pay exorbitant black market prices charged by their underworld suppliers. As a result of these hugely expensive transactions, law enforcement agencies are constantly tempted by graft.

Many heroin addicts die needlessly from disease caused not by the drug, but from agonizing secondary complications. Medical authorities now strongly agree that heroin causes very little physical damage. Symptoms of heroin withdrawal are not nearly as dangerous as those associated with alcohol. Yet in New York City last year over 900 addicts died from tetanus and hepatitis caused by improper means of injection. Addicts almost always re-use and share filthy needles, or improvise with objects not designed for injecting drugs into the bloodstream, because hypodermic syringes are not legally available.

A further threat to users persists in the form of highly impure heroin, carelessly prepared by street dealers who have no concern for the health of their clients. With alarming frequency, users -- unable to determine the quality of the drug they take -- are accidentally overdosing. Moreover, addicts' inability to obtain adequate nutrition, medication and doctor's care has been directly linked to using all their resources to pay outrageous black market prices for the drug.

Legalizing the sale of heroin provides society with several clear advantages. It would deter crime by making heroin relatively inexpensive and available to addicts. It would help in the fight against organized crime by taking away an important source of the underworld's income. Finally, it would virtually eliminate police corruption related to heroin trafficking by moving the sale of heroin outside their jurisdiction. Legalizing heroin would also be advantageous to the user. It would sharply reduce the number of heroin-related deaths due to disease and overdose. In addition, users would be able to better afford other health related products.

LOW INTENSITY

The laws regulating the sale of heroin in this country have sometimes done more harm than good, both to society and to the individual who must use heroin. The public is faced with a large number of crimes committed each year in most major cities by addicts searching for money to support their habit. The addict suffers not from heroin, but from unpleasant secondary complications which are associated with the drug's continued illegality.

In England, where the government controls the legal sale to addicts, heroin-related crimes are almost nonexistent. Crime is not caused by the drug itself, but by slightly outdated laws which prohibit its use. In the United States, addicts are forced to commit crimes against innocent citizens to obtain money to pay high black market prices charged by their underworld suppliers. As a result of these somewhat expensive transactions, law enforcement agencies are occasionally tempted by graft.

Some heroin addicts die needlessly from disease caused not by the drug, but from uncomfortable secondary complications. Medical authorities now tentatively agree that heroin causes little physical damage. Symptoms of heroin withdrawal are not as dangerous as those associated with alcohol. Yet in New York City last year over 900 addicts died from tetanus and hepatitis caused by improper means of injection. Addicts from time to time re-use and share unsanitary needles, or improvise with objects not designed for injection of drugs into the bloodstream, because hypodermic syringes are not legally available.

A further danger to users exists in the form of slightly impure heroin, casually prepared by street dealers who have mini-mal concern for the health of their clients. With surprising frequency, users -- unable to determine the quality of the drug they take -- are accidentally overdosing. Moreover, addicts' inability to obtain quality nutrition, medication and doctor's care has been loosely linked to using most of their resources to pay inflated black market prices for the drug.

Legalizing the sale of heroin provides society with several advantages. It would discourage crime by making heroin relatively inexpensive and available to addicts. It would help in the fight against organized crime by taking away an important source of the underworld's income. Finally, it would nearly eliminate police corruption related to heroin trafficking by moving the sale of heroin outside their jurisdiction. Legalizing heroin would also be advantageous to the user. It would gradually reduce the number of heroin-related injuries due to disease and overdose. In addition, users would be able to better afford other health related products.

Appendix B. High and low credibility inductions

MALES SOURCES
High credibility:

John T. Eldrege is currently Assistant Director of the DEA (Drug Enforcement Agency). The Washington political scene views him as exciting and a rising star. He has a Ph.D. in physiology from Berkeley, and an M.A. in criminology from Stanford University. He is a popular guest on radio talk shows, and recently received a Peabody Award for his book on heroin use in America.

Low credibility:

Jack Eldredge is is a former addict who admits turning to heroin to impress friends who viewed him as dull and a nobody. He claims, however, to have never once sold the drug. He is studying for a degree in sociology at Foothill Community College. His current work for a heroin lobbying group has made him unpopular in the community. His appearance on a local talk show resulted in several threats on his life.

FEMALES SOURCES

High credibility:

Joan T. Eldrege is currently Assistant Director of the DEA (Drug Enforcement Agency). The Washington political scene views her as exciting and a rising star. She has a Ph.D. in physiology from Berkeley, and an M.A. in criminology from Stanford University. She is a popular guest on radio talk shows, and recently received a Peabody Award for her book on heroin use in America.

Low credibility:

Joan Eldredge is is a former addict who admits turning to heroin to impress friends who viewed her as dull and a nobody. She claims, however, to have never once sold the drug. She is studying for a degree in sociology at Foothill Community College. Her current work for a heroin lobbying group has made her unpopular in the community. Her appearance on a local talk show resulted in several threats on her life.

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