AN EMPIRICAL TEST OF AN AXIOMATIC MODEL OF THE RELATIONSHIP BETWEEN LANGUAGE INTENSITY AND PERSUASION[1]

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Abstract　The study tested six axioms concerning the effect of language intensity on receiver attitudes. The axioms specify source and receiver variables which might moderate the relationship between intensity and attitude change. The results were consistent with an information processing model based on message discrepancy, expectancy and elaboration likelihood theories. Intensity affected attitudes through three routes. First, intensity increased attitude change via message clarity, with clarity acting as a mediator variable. Second, intensity interacted with discrepancy and perceived source likeability to produce attitude change. Third, the effect of intensity on attitudes was moderated by source expectations. Results showed that intensity enhances persuasiveness for a high credibility source, inhibits persuasiveness for a low credibility source, and has no effect for a moderate credibility source. Receiver anxiety moderated the effect of source gender expectations on the intensity–attitude relationship. A revised model of intensity effects, based on axioms derived from information processing theory and expectancy theory, is discussed.

In most theories of attitude change, the strength of the persuasive message plays an important role. The primary means by which a source can convey message strength, commonly referred to as *assertion intensity,* is by language choice. Emotion-laden words and graphic, precise language generate perceptions of forceful assertion. A lack of emotionality or specificity weakens message strength. An emotional source might say 'the opposition's plan is frightening', whereas an

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emotionally flat source might opt for bland language, replacing 'frightening' with 'disquieting'. Assertion intensity can also be diminished through vague language, such as euphemisms. Persuasion theories with assertion intensity as a focal construct are essentially theories about the effect of language intensity on receiver attitudes.

Researchers have studied language intensity effects from a variety of perspectives, including congruity theory (Kochevar, 1967; McEwen & Greenberg, 1970; Thompson, 1965), expectancy theory (Burgoon & Chase, 1973; Burgoon, Jones & Stewart, 1975; Burgoon & King, 1974; Burgoon & Miller, 1971), reinforcement theory (Bowers, 1963), and the variable-analytic approach (Carmichael & Cronkhite, 1965; Greenberg, 1976). Their studies were designed to test a particular theory rather than integrate the literature. Consequently, in a span of over 25 years, the literature on intensity effects in persuasion has drifted towards disarray. A step away from disarray was taken by Bradac, Bowers & Courtright (1979), who culled the literature on language effects and identified a set of empirical generalisations concerning language intensity. In a later article, they developed these generalisations into an axiomatic framework (Bradac, Bowers & Courtright, 1980). Their axiomatic theory applied to language effects in general rather than to persuasion in particular. Yet Bradac *et al.*'s axioms may represent an important contribution to persuasion theory.

An axiomatic theory of persuasion provides an alternative to more conventionally constructed persuasion theories. According to Hewes (1980), an axiomatic persuasion theory has two advantages. First, it is *rigorous* because it forces an explicit statement of the relationships among variables. Second, it is *suggestive* in that it can be adapted to disconfirming evidence, for its axioms are not presumed to be true. These properties make the axiomatic approach ideal for synthesising a literature based on diverse theoretic perspectives. With rigour and suggestiveness in mind, the present study tested the utility of an axiomatic theory of persuasion founded on the Bradac *et al.* axioms of language intensity effects.

An Axiomatic Approach to Language Intensity

The axiomatic theory of Bradac *et al.* (1980) advanced 13 propositions regarding intensity. In addition to assertion intensity brought about by emotional or specific language, Bradac *et al.* (1980) placed two other types of language under the rubric of intensity — obscene language and opinionated language. Obscenities can convey assertion intensity, but they also violate taboo. Two of the Bradac *et al.* axioms concerned studies in which the obscenity of language was manipulated. The remaining 11 axioms dealt with non-obscene intensity effects.

The findings which served as the basis for the two obscenity axioms were meta-analysed by Hamilton (1989), who found that obscenity reduces source competence, as Bradac *et al.* predict, but it also reduces trustworthiness and likeability ratings. Thus, assertion intensity plus taboo violation produces effects which are more negative than assertion intensity alone. Like obscenity, opinionated language is polysemic. It conveys evaluativeness in addition to assertion intensity

(Hamilton & Costa, 1988). Assertion intensity brought about by emotional or specific language might therefore generate different effects than opinionated language. Unfortunately, Bradac *et al.* did not divide the non-obscene intensity literature into studies which involved only assertion intensity, and those which involved assertion intensity plus evaluativeness.

Of the 11 axioms concerned with non-obscene intensity, two dealt with intensity encoding, one concerned resistance to change, and two were related to perceptions peripheral to attitude change. This left six axioms which predicted the effect of intensity on attitude change. Of the six axioms, five were related to receiver attitudes towards topic and one was related to receiver attitudes towards source. Each axiom specified a variable which moderated intensity effects. Two of the moderator variables were source variables and three were receiver variables. The six axioms appear in Table 1.

Table 1 Six axioms of language intensity effect (from Bradac *et al.*, 1980)

Axiom 5. Language intensity of a non-obscene type in attitudinally discrepant messages is inversely related to postcommunication ratings of source competence.

Axiom 6. For highly aroused receivers (at least when the basis for arousal is irrelevant to the message), language intensity is inversely related to attitude change.

Axiom 7. Language intensity and initial receiver agreement with the proposition of a message interact in the production of attitude reinforcement or change in such a way that intensity enhances the effect of attitudinally congruent, but inhibits the effect of attitudinally discrepant, messages.

Axiom 9. Language intensity and initial source credibility interact in the production of attitude change in such a way that intensity enhances the effect of credible, but inhibits the effect of less credible, sources.

Axiom 10. The relationship between initial source credibility, intensity and attitude change is strengthened when receivers are high in need for approval.

Axiom 11. Language intensity and 'maleness' interact in the production of attitude change in such a way that intensity of a non-obscene type enhances the effect of male, but inhibits the effect of female, sources.

Evidence of Source and Receiver Moderator Effects

The review below differs from that offered by Bradac *et al.* (1979, 1980) in that a number of new or difficult to obtain intensity studies were evaluated, a distinction was made between assertion intensity manipulations and opinionatedness manipulations, and assertion intensity was considered within information processing frameworks (Hunter, Danes & Cohen, 1984; Petty & Cacioppo, 1981, 1986). Re-analysis of the data on which the currently accepted axioms were based suggested that the axioms needed updating.

Message discrepancy and attitude change

Message discrepancy is the distance between the source's position on an issue and the receiver's position on an issue. In the language of information processing theory, message discrepancy (d) is defined as the difference between the valence of the source's message (m) and the receiver's initial attitude (a), or $d = m - a$. The link between message discrepancy and attitude change has been well established (Aronson, Turner & Carlsmith, 1963; Bochner & Insko, 1966; Fink, Kaplowitz & Bauer, 1983; Jaccard, 1981; Kaplowitz, Fink & Bauer, 1983; Whittaker, 1965).

The basic message discrepancy proposition predicts that attitude change (Δa) is a linear function[2] of d. In the linear model $\Delta a = \alpha d$, where α is the impact parameter. Assertion intensity, i, will enter the model as part of the impact parameter α. If assertion intensity is made explicit in the model, then $\Delta a = \alpha i d$. Attitude change will be a multiplicative function of intensity and discrepancy, adjusted for the impact parameter α. Using regression terminology, as d or i increases, so does Δa. If d is held constant, then the effect of intensity is clear. With attitude change as the dependent variable, the slope of the line for the high intensity message will be steeper than the slope of the line for the low intensity message.

Another information processing model, Petty and Cacioppo's elaboration likelihood model (ELM), also suggests that intensity increases persuasiveness. They argue that message quality directly affects attitude change through what they call the central route to persuasion. Central route persuasion occurs when receivers engage in the effortful processing of message content. As noted, high intensity messages use more precise, graphic language than low intensity messages. Hence, intensity should improve message clarity. A clearer message should be perceived as higher in quality, yielding more attitude change. Two studies, Kochevar (1967) and McEwen & Greenberg (1970) presented results which suggest that message clarity mediates the relationship between language intensity and attitude change.

The two information processing models claim that intensity increases attitude change either indirectly, through clarity, or directly through an interaction with discrepancy. In contrast to these two models, axiom 7 predicts that intensity will interact disordinally with discrepency to produce attitude change. According to axiom 7, if d is small, the high intensity message will be more persuasive than the low itensity message. If d is large, the low intensity message will be more persuasive than the high intensity message. Using regression terminology, as d increases, the relative persuasiveness of the low intensity message will increase, that is $\Delta a = \alpha d$. However, for the high intensity message, effectiveness will decrease with d, that is $\Delta a = -\alpha d$. Thus, axiom 7 and information processing theory are in disagreement about the effect of discrepancy on attitude change for high intensity messages. On two topics, data from Thompson (1965) show that discrepancy increases attitude change for a high intensity message. The current study pits axiom 7 against the hypotheses of the information processing models.

Message discrepancy and source perception

Information processing theory predicts that as discrepancy increases, attitude towards the source will become more negative (Hunter *et al.*, 1984). Assertion intensity is not believed to interact with discrepancy to influence perceptions of source competence or trustworthiness. By contrast, axiom 5 suggests that assertion intensity will interact with discrepancy to affect competence and possibly trustworthiness ratings. Unfortunately, axiom 5 suffers from a lack of rigour. It asserts that if d is large, intensity decreases source competence ratings, but it does not specify the effect of intensity if d is small. It does, however, imply that the effect of intensity should differ at low and high discrepancy. Thus, if d is small, it is unclear whether there will be no difference between high and low intensity messages, or the high intensity message will produce higher competence ratings than the low intensity message.

Bradac *et al.* (1980) suggest that truthworthiness as well as source competence may be affected by the intensity-by-discrepancy interaction. Data from Thompson (1965), however, do not show intensity and discrepancy interacting to affect competence or truthworthiness ratings. The information processing proposition, that intensity and discrepancy do not interact, will be tested against axiom 5, which predicts an intensity-by-discrepancy interaction.

Source credibility

Information processing theory (Hunter *et al.*, 1984) predicts that source credibility will also act as a multiplier of message discrepancy effects. The discrepancy equation presented earlier, $\Delta a = \alpha id$, can be adjusted to take into account the impact of source credibility (s) on receiver attitudes, $\Delta a = \alpha sid$. Thus, information processing theory proposes that attitude change is a three-way, ordinal interactive function of intensity, discrepancy and credibility. Holding discrepancy constant, attitude change is enhanced if both intensity and credibility are high; attitude change is inhibited if both intensity and credibility are low. Highly intense language from a low credibility source or low intensity language from a high credibility source should produce moderate attitude change.

Expectancy theory (Burgoon *et al.*, 1975) proposes instead that initial credibility moderates the effect of intensity on attitude change. High credibility sources are expected to use high intensity language and low credibility sources are expected to use low intensity language. Violating these expectations should reduce persuasiveness. Axiom 9 is based on expectancy theory. It predicts that attitude change is enhanced if a high credibility source uses high intensity language or a low credibility source uses low intensity language; attitude change is inhibited if a high credibility source uses low intensity language or a low credibility source uses high intensity language. The disordinal nature of the interactive effect of intensity and credibility on attitude change implies that intensity will have no effect on attitude change if a source is moderately credible.

Both information processing theory and expectancy theory predict that the persuasiveness of a high credibility source will be enhanced by high intensity language. The theories differ, however, with respect to the effectiveness of low inten-

sity language used by low credibility sources: information processing theory pre-
dicts small attitude change; expectancy theory predicts large attitude change.
Despite the apparent tension between the two theories, it is possible that they are
both correct. In some studies, the expectancy effect may dominate, while in other
studies the discrepancy effect may dominate.

Burgoon *et al.* (1975, experiment 3) claimed support for the intensity by
credibility interaction proposed by expectancy theory. Another study, Thompson
(1965), however, found no such interaction. Unfortunately, most other studies
have not allowed a test of the expectancy proposition. They have held initial
credibility constant, either by not manipulating it or by fixing it at a high, moder-
ate or low level. The present study probes the interaction between intensity and
credibility, providing a test of both the expectancy and information processing
propositions.

Receivers' need for approval

The interactive function of attitude change onto intensity and credibility pre-
dicted by axiom 9 may be moderated by receivers' need for approval. According
to axiom 10, for receivers low in need for approval, credibility would have little if
any moderating effect on the relationship between intensity and attitude change;
for receivers high in need for approval, credibility would have a strong moderating
effect. Thus, axiom 10 provides boundary conditions for axiom 9. The basis for
axiom 10 was a study by Basehart (1971); however, Basehart used opinionatad
language rather than intense language (based on emotional and specific lan-
guage). The current study provides the first test of axiom 10 using assertion inten-
sity alone.

Source gender

Expectancy theory proposes that source gender also moderates the effect of
intensity on attitude change. Males are expected to use high intensity language
and females are expected to use low intensity language. A violation of these gen-
der expectations reduces persuasiveness. Axiom 11 was based on the gender
expectation proposition.

Studies have consistently found that females are more effective using low rather
than high intensity language (Bradac, Courtright & Bowers, 1979; Burgoon *et al.*,
1975, experiment 1). The results from two studies using males as sources, how-
ever, were inconsistent: Burgoon *et al.* (1975, experiment 1) found that males
were more persuasive using high intensity language, whereas Thompson (1965)
found that males were more persuasive using low intensity language. Thus, there
may be a hidden moderator variable which determines whether intensity has a
positive or negative effect on attitudes for male sources. The present study
examined source credibility and receiver anxiety as possible moderators of the
gender expectancy effect.

Irrelevant fear

Axiom 6 predicts that for highly aroused receivers, a low intensity message will be more persuasive than a high intensity message. By not explicitly stating the relative persuasiveness of high and low intensity for receivers low in arousal, axiom 6 implies that among low arousal receivers there will either be no difference between intensity conditions, or that other moderators may determine intensity persuasiveness. The results from Carmichael & Cronkhite (1965) and Burgoon *et al.* (1975, experiment 2) provide support for the simple ordinal interaction interpretation of axiom 6. In both studies, low intensity language was more persuasive than high intensity language for highly aroused receivers, and there was no difference between low and high intensity when receivers were low in arousal. The lack of significant difference between low and high intensity conditions at low arousal, however, could be due to one or more moderator variables not explicit in the designs. The present study investigated that possibility.

In their current form, the axioms lack cohesion. Axiom 5 needs further specificity. Axiom 6 involves an interaction which may be simple or complex. Axioms 7 and 9 appear to be challenged by information processing theory. Axiom 10 needs to be tested using assertion intensity rather than opinionated language. Axiom 11 may need modification if a moderator variable is discovered which determines whether males using intense language are more or less effective. Furthermore, axioms 9 and 11 make contradictory predictions. Axiom 9 claims that intensity enhances persuasion if used by high credibility sources, and inhibits persuasion if used by low credibility sources. Axiom 11 claims that intensity enhances persuasion if used by a male, and inhibits persuasion if used by females. Therefore, axiom 9 predicts that the high credibility female source will be most effective using high intensity language; axiom 11 predicts that she will be most effective using low intensity language. Axiom 9 predicts that the low credibility male source will be most effective using low intensity language; axiom 11 predicts that he will be most effective using high intensity language.

If either one of the axioms producing this contradiction is not true, then the contradiction can be eliminated. If the contradiction cannot be resolved by falsifying an axiom then a more complicated proposition will be required, specifying the conditions under which each axiom is true. By concurrently assessing how message discrepancy, source credibility, receivers' need for approval, source gender, and receivers' arousal level moderate the effect of intensity on attitude change, the present study provides an empirical test of a model based on the existing axioms.

Method

Subjects

The receivers used in all phases of this experiment were students in lower division speech and communication courses at the University of Hawaii, Manoa. They were given a nominal amount of extra credit for participating in the experi-

ment, and fully debriefed after participating. A total of 412 students were used in the various phases of the study. Pre-study tests of the experimental topic, language intensity manipulation and source credibility manipulation employed 118 participants. The main study included 294 participants.

Manipulated variables

Eight experimental conditions were created by crossing three independent variables, *message intensity, initial source credibiity* and *source gender.*

Message intensity

High and low intensity experimental messages were created by inserting lexical items varying in intensity into a template text. Propositional content and magnitude of consequences were tightly controlled across intensity manipulations.

High and low intensity nouns and noun phrases, verbs and verb forms, adjectival and adverbial modifiers were used in the manipulations. 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. Extensive pre-testing of the high and low intensity texts, which appear in the appendix, showed a significant difference on the perceived intensity measure.

The texts were presented as newsprint (right justified, proportionally spaced copy, 35 characters wide). The text appeared to have been cut from a magazine then pasted onto a grey background.

Source credibility

The credibility of the source was manipulated with a short introductory paragraph presented prior to the persuasive message. The manipulation involved the dimensions of *competence, trustworthiness* and *likeability*. Extensive pre-testing of the credibility manipulation showed it to be successful on all three dimensions.

The high credibility manipulation described the source as an Assistant Director of the Drug Enforcement Agency. To ensure high competence ratings the source was credited with a PhD in physiology from the University of California, Berkeley and an MA in criminology from Stanford University. High trustworthiness was achieved by describing the source as someone who was well respected inside Washington DC political circles, who recently received an award for writing a book on heroin use in America. Likeability was established by mentioning the source's popularity on radio talk shows.

The low credibility manipulation described the source as a former addict. To achieve low competence, he was described as studying to complete a degree in sociology at a community college. Low trustworthiness was manipulated by implying the source may have sold drugs for profit. By pointing out that the source's lobbying work in the community had been unpopular, and by mentioning that an appearance on a local talk show had resulted in several threats on the source's life, low likeability was established.

Source gender

The author of the heroin article was described as either John or Joan. Author sex was further emphasised by the inclusion of four gender-specific pronouns.

Quasi-experimental factors

Receivers' level of state *anxiety* was included as a quasi-experimental factor in the design. Past studies which examined the intensity-by-anxiety interaction operationalised *anxiety* as situational fear unrelated to the experimental message topic. In order to vary 'irrelevant' state anxiety, students filled out the survey before taking the final examination in the undergraduate courses in which the data was collected. The period time before taking their final examination ranged from immediate to one week.

Anxiety was measured using the states version of the Spielberger (1970) State Trait Anxiety Inventory (STAI). The STAI consists of 20 statements, ten of which are couched in positive terms (for example, *I feel comfortable*) and ten in negative terms (for example, *I feel anxious*). Receivers indicate their feelings towards each statement by selecting one of four responses: not at all (1), somewhat (2), moderately so (3), very much so (4). The reliability and validity of this instrument is well established (Spielberger, Gorsuch & Lushene, 1970).

Message *clarity* was measured with 12 items. Receivers' *need for approval* was measured using the Marlowe–Crowne Social Desirability Scale (Crowne & Marlowe, 1964). This instrument consists of 33 true–false items.

Message discrepancy

As part of the pre-study, students rated a variety of potential topics on four 7-point semantic differential items. Based on the results, the legalised sale of heroin to addicts in the United States was chosen as the proposition for the experimental message. Students generally disagreed with the proposition ($M = 1.9$, $SD = 1.38$, averaged across the four items). In the main experiment, prior attitude towards topic was measured with ten 7-point semantic differential items. Pre-test results indicated that participants were again skewed in the direction of anti-legalisation ($M = 2.1$, $SD = 1.41$, on a 7-point scale averaged across ten items).

Control variables

The culturally diverse population in Hawaii required that respondents' cultural background and linguistic community be recorded as possible control variables. Receivers' gender was also examined as a possible blocking variable.

Manipulation checks

The 8-item perceived language intensity scale and the perceived source competence, trustworthiness and likeability scales (8, 11 and 9 items, respectively) were included as manipulation checks. All scales consisted of 7-point semantic differential items.

Dependent variables

The difference between pre-test scores and post-test scores on attitude towards topic constituted the attitude change measure. The pre-test and post-test measures each consisted of ten items. Attitudes towards source were assessed using the perceived source competence, trustworthiness and likeability ratings.

Procedures

Manipulations of the *language intensity, source gender* and initial *source credibility* variables yielded eight experimental materials packets. Participants were randomly assigned one of the eight packets. Subjects completed the pre-test, anxiety and need for approval measures, then read their packet, which included the introductory paragraph manipulating source credibility and gender, and the persuasive message containing the language intensity manipulations. After reading the persuasive message, participants completed with perceived intensity, message clarity, source perception and post-test measures. Finally, subjects provided information regarding the control variables.

Measurement model

All of the measures consisted of multiple indicator scales. The quality of the items included on the survey as measures of the underlying constructs they were intended to represent was assessed. The item intercorrelation matrix was subjected to exploratory factor analysis (principle-axis), and confirmatory factor analysis (multiple groups cluster analysis) using PACKET (Hamilton & Hunter, 1988). To be retained in a scale an item had to have appropriate content and demonstrate internal consistency with other items measuring the same construct (the criterion of unidimensionality), and external consistency with those items as they correlate with outside variables (the criterion of parallelism). Items which failed to meet these criteria were discarded. Items were unit weighted and summed to generate scores on each scale. The scale scores were used to test the axioms.

The reliability of all the scales, measured with standard score coefficient alpha, was high: *pre-test* alpha = 0.98, post-test alpha = 0.98, *perceived language intensity* alpha = 0.91, *message clarity* alpha = 0.94, *competence* alpha = 0.95, *likeability* alpha = 0.92, and *trustworthiness* alpha = 0.95.

The twenty STAI items formed two distinct subclusters, positive and negative feelings. Two of the positively worded items *(I feel joyful* and *I feel rested)* were discarded because they lacked internal consistency. The positive and negative feeling subclusters correlated −0.51 (−0.64 corrected for attenuation). However, after examining the external consistency of the two subclusters, it was apparent that they differed merely as a result of response set. The two subclusters were therefore combined after the positive-feelings items had been reflected (alpha = 0.89). Three *need for approval* items were eliminated because of extremely low communalities. Once the three unreliable items were removed, the reliability of the scale improved to 0.81.

Results

Preliminary analyses

Variance in the eight experimental conditions was homogeneous, Cochran's $C(35,8) = 0.20$, $p<0.05$. The high intensity message was rated as more intense

(M = 46.59, SD = 6.73, n = 142) than the low intensity message (M = 40.14, SD = 8.59, n = 145). This difference was significant (t = 7.07) and moderately large (eta = 0.41).

Message discrepancy effects

The relationship between discrepancy and attitude change for the high intensity message was explored using bivariate regression. The slope of the regression line for the high intensity message was positive (beta = 0.33, $p<0.001$). Thus, the information processing explanation was supported, but not axiom 7. Consistent with both information processing theory and axiom 7, a positive slope to the regression line for the low intensity message was obtained (beta = 0.26, $p<0.01$).

Attitude change as a multiplicative function of discrepancy, intensity and credibility was considered first. Preliminary analyses showed that the ordinal interaction predicted by information processing theory was present. However, it was not clear whether initial credibility, perceived competence, perceived trustworthiness, perceived likeability, or a linear combination of the perceived credibility variables interacted most strongly with discrepancy and intensity. Consequently, the manipulated intensity, discrepancy and the various credibility options were entered into a zero-constant regression[3] with attitude change as the dependent variable. The high intensity message was given a value of 1. The optimal weight of the low intensity message was 0.762. The data were probed for a polarity effect and inattention to message due to counterarguing (Hunter et al., 1984: 45). The analysis showed that a basic linear discrepancy model fit best. Attitude change was a multiplicative function of manipulated intensity, message discrepancy and perceived source likeability. The multiplicative interaction term was used as a covariate in subsequent analyses.

Axiom 5 predicts that discrepancy and intensity will interact to affect source competence ratings. Axiom 5 predicts that at high discrepancy, low intensity will result in higher competence ratings than high intensity. Axiom 5 is not clear as to the effect of intensity at low discrepancy. Univariate regression was used to assess the relationship between discrepancy and competence ratings for high and low intensity messages. As discrepancy increased, competence ratings decreased, for both the high intensity (beta = -0.14) and the low intensity (beta = -0.16) messages. Thus, the interaction predicted by axiom 5 was not obtained. The discussion of axiom 5 in Bradac et al. (1980) suggested that intensity and discrepancy might interact to affect trustworthiness ratings. As with competence ratings, there was no interaction between discrepancy and intensity. Discrepancy reduced trustworthiness ratings, whether the message intensity was high (beta = -0.20) or low (beta = -0.20).

To determine the effect of intensity on ratings of perceived source competence, trustworthiness and likeability, multiple regression analyses were conducted. Effect coding was used on the three independent variables to compute main effects and interactions. Message discrepancy, perceived language intensity, and message clarity were entered as covariates. The omnibus tests for competence $F(10,276) = 31.61$, $MR = 0.73$, trustworthiness $F(10,276) = 33.01$, $MR = 0.74$,

Table 2   Preliminary analysis of perceived credibility measures

Predictor	Beta weights for dependent variable		
	Competence	Trustworthiness	Likeability
Covariates			
message clarity	0.58[a]	0.76[a]	0.63[a]
perceived intensity	0.02	−0.19[a]	−0.31[a]
message discrepancy	−0.11[b]	−0.15[a]	−0.12[c]
Main effects			
intensity	−0.06	−0.06	−0.06
source gender	0.00	−0.05	−0.02
manipulated credibility	0.11[b]	0.07	0.03
Two-way interactions			
intensity by gender	0.01	−0.04	−0.02
credibility by gender	0.09[c]	0.09[c]	0.10[c]
intensity by credibility	0.01	0.03	0.01
Three-way interaction	0.02	−0.01	0.07

[a] $p < 0.001$
[b] $p < 0.01$
[c] $p < 0.05$

and likeability $F(10,276) = 16.48$, $MR = 0.61$, were all significant ($p < 0.001$). Results from the univariate tests for the predictors appear in Table 2.

The findings show that perceived credibility was more a function of the message than a function of the pre-message credibility manipulations. Competence, trustworthiness and likeability increased as a function of message clarity, but decreased as a function of message discrepancy. Trustworthiness and likeability decreased directly with perceived language intensity. Manipulated credibility and source gender interacted to have an effect on the three dimensions of perceived credibility. Inspection of the cell means, which appear in Table 3, shows that the effect of manipulated credibility on the perceived credibility measures was larger for the male source than for the female source. The high credibility male source was rated highest, the low credibility male source was rated lowest across the three credibility dimensions. The high credibility female source was generally rated more favourably than the low credibility female source, but the difference was not as large as that between the high and low credibility male sources. This finding is surprising, given that extensive pre-testing showed the credibility manipulation to be powerful. Hence, describing a high or low credibility source as female restricted the range of her credibility.

Source expectations and anxiety as moderators

Multiple regression was used to assess the impact of intensity and the variables interacting with intensity on attitude change. Effect coding was used on the three independent variables to compute main effects and interactions. The discrepancy

Table 3 Mean credibility ratings by source condition

	Female source credibility		Male source credibility	
	low	high	low	high
Competence				
observed	4.67 (74)	5.02 (73)	4.54 (67)	5.31 (73)
adjusted	4.85	4.91	4.63	5.16
Trustworthiness				
observed	4.34	4.58	4.02	4.70
adjusted	4.49	4.44	4.15	4.55
Likeability				
observed	4.18	4.23	3.91	4.36
adjusted	4.26	4.13	4.01	4.28

Note: Number of subjects per cell in parentheses

interaction and message clarity were entered as covariates. Preliminary analysis showed that no 4-way or higher interactions were significant. Moreover, 3-way interactions not involving intensity were also non-significant. Hence, these terms were eliminated, yielding a test of a slightly reduced model.[4] The omnibus $F(17,269) = 6.34$, was significant ($p<0.001$, $MR = 0.54$). Table 4 contains the F-values for the terms in the reduced model. The two covariates, discrepancy and clarity, produced significant effects. Two 3-way interactions, both involving intensity and source gender, were also significant, one with anxiety as the third variable, the other with credibility as the third variable.

The 3-way interaction involving intensity, source gender and credibility is nominal, due to the fact that the credibility manipulation had more of an impact on the male sources than the female sources. Table 5 shows the mean attitude change in the eight experimental conditions. Axiom 9 predicts a disordinal interaction between intensity and credibility, such that at high credibility high intensity language will be more persuasive than low intensity language, at moderate credibility intensity will matter little, and at low credibility low intensity language will be more persuasive than high intensity language. Consistent with axiom 9, intensity enhanced attitude change for the highly credible male source, inhibited attitude change for the low credibility male source, and had a small (inhibiting) effect for the moderate credibility female sources.

A surprise finding was that intensity interacted with receiver anxiety and source gender to produce attitude change. Anxiety was considered as a predictor of attitude change in four conditions: male source, high and low intensity; female source, high and low intensity. Four bivariate regressions were performed. Results showed that for the high intensity male and the low intensity female (the two conditions in which the source fulfilled receivers' gender-based intensity expectations), as anxiety increased, their persuasiveness *decreased*. For the low

Table 4 Multiple regression with attitude change as the dependent variable

Predictor	Beta
Covariates	
discrepancy interaction term	0.37[a]
message clarity	0.17[b]
Main effects	
manipulated intensity (-1 = low, 1 = high)	-0.08
manipulated credibility (-1 = low, 1 = high)	0.04
manipulated source gender (-1 = female, 1 = male)	0.00
receivers' need for approval (continuous)	0.02
receivers anxiety (continuous)	0.07
Two-way interactions	
intensity by credibility	0.04
intensity by gender	0.00
intensity by anxiety	0.01
credibility by gender	0.02
credibility by anxiety	-0.05
gender by anxiety	-0.07
Three-way interactions	
intensity by credibility by need for approval	0.08
intensity by credibility by gender	0.11[c]
intensity by credibility by anxiety	-0.03
intensity by gender by anxiety	-0.17[b]

[a] $p < 0.001$
[b] $p < 0.01$
[c] $p < 0.05$

Table 5 Adjusted mean attitude change by experimental condition

| | Female source | | Male source | |
| | credibility | | credibility | |
	low	high	low	high
High intensity	6.58 (36)	7.53 (40)	7.97 (34)	4.16 (35)
Low intensity	3.33 (38)	4.29 (33)	1.96 (33)	9.57 (38)

Note: Number of subjects per cell in parentheses

intensity male and the high intensity female (the two conditions in which the source violated receivers' gender-based intensity expectations), as anxiety increased, their persuasiveness *increased*.

Two regressions were subsequently conducted, one for the gender-expectancy fulfilment conditions ($\Delta a = 9.10 - 0.17b$), and one for the gender-expectancy violation conditions ($\Delta a = 1.39 + 0.23b$). Anxiety and gender-expectations

Table 6 Attitude change as a function of expectations and anxiety

	Receiver anxiety level			
Gender expectancy condition	none (0)	somewhat (18)	moderate (36)	extreme (54)
Intensity expectation fulfilled	9.10	6.04	2.98	0.08
Intensity expectation violated	1.39	5.53	9.67	13.81

interacted disordinally; the point at which the two regression lines intersected was 19.28. Table 6 shows that at low anxiety, 0 on the anxiety scale, the source who fulfils gender expectations was more effective; at extreme anxiety, 54 on the anxiety scale, the source who violates gender expectations was more effective. Interestingly, at moderate levels of anxiety, 18 on the anxiety scale, gender expectations have little effect on attitude change. Note that the point of intersection, 19.28, closely approximates the point (18) at which receivers are 'somewhat' anxious.

Discussion

The results from this study reveal a complex but intriguing picture of the effect of language intensity on attitude change. Intensity affected attitudes in three ways: as a mutiplier of message discrepancy, indirectly through message clarity, and by interacting with source expectations. As predicted by information processing theory (Hunter *et al.*, 1984), attitude change was a multiplicative function of linear discrepancy, intensity and source likeability. The discrepancy multiplier effect of intensity is not consistent with axioms 5 or 7. Hence, a new proposition more in line with information processing theory appears necessary.

The expectancy-related axioms fared better. Initial source credibility moderated the effect of intensity on attitude change, as predicted by axiom 9. Intensity enhanced persuasion when the source had high credibility, and inhibited persuasion when the source had low credibility. At moderate credibility, intensity had little impact on persuasion, showing a slight inhibiting effect. There was no support for axiom 10, which proposed that receivers' need for approval determines whether initial credibility will moderate the impact of opinionated language on receiver attitude change. The fact that receivers' need for approval influenced receivers' reactions to opinionated language (Basehart, 1971), but not their reactions to intense language, suggests that receivers needing social approval are sensitive to the evaluativeness present in opinionated language but absent from plain assertion intensity.

The observed interaction between receiver anxiety, intensity and source gender on attitude change is consistent with previous research. The male source speaking to anxious receivers was most persuasive using low intensity language (see axiom 6; Burgoon *et al.*, 1975, experiment 2; Carmichael & Cronkhite, 1965). When receivers were low in anxiety, the male source was most persuasive using high

intensity language and the female source was most persuasive using low intensity language (see axiom 11; Burgoon *et al.*, 1975, experiment 1). Yet these results may be part of a more complex pattern. Receivers appeared to expect emotional rapport with female sources, but not with male sources. Thus, when receivers were calm, the sedate, non-intense female and the emotional, intense male met expectations; when receivers were anxious the sedate, non-intense male and the emotional, intense female met expectations. Emotional congruence expectations may be based on beliefs about the emotional sensitivity of males and females. Females tend to be more sensitive to the emotional states of others than males. Hence, females are expected to be emotionally congruent, males are expected to be emotionally detached. Violating gender-based expectations of emotional congruence could inhibit persuasion.

The current study provides evidence that intensity enhances message clarity, and clarity enhances attitude change and perceived credibility. Studies by Kochevar (1967) and McEwen & Greenberg (1970) support the proposition that clarity mediates the effect of intensity on attitude change. A straightforward explanation for the clarifying effect of intensity is that manipulated intensity increases message clarity by increasing perceived intensity. To test this explanation, a path analysis was conducted on data from the present study. The path analytic results corroborated the existence of the proposed 2-step causal chain from intensity to clarity. Clarity, in turn, increased attitude change, perceived source competence, trustworthiness and likeability. Interestingly, perceived intensity had a direct negative effect on perceived trustworthiness and likeability. Thus, perceived intensity produced both positive (via message clarity) and negative (directly from perceived intensity) effects on ratings of source trustworthiness and likeability.

A revised model of language intensity and persuasion

Of the axioms tested, only those based on information processing theory and expectancy theory received support. Hence, future research on the relationship between language intensity and persuasion should focus on propositions from these two theories. Two information processing effects were observed. First, the effect of message discrepancy on attitude change was moderated by language intensity and perceived source likeability. In another persuasion context, source competence or source trustworthiness might act as the multiplier instead of source likeability. Intensity has a strictly positive impact on perceived competence. If competence is the multiplier, then the intensity-discrepancy effect will be large. Intensity has both a positive (via clarity) and negative (via perceived intensity) impact on perceived trustworthiness and likeability. If trustworthiness or liking is the multiplier, then the intensity-discrepancy effect will be reduced.

Second, intensity improved message clarity, and clarity increased attitude change. Message clarity can be thought of as a measure of message quality. Petty & Cacioppo (1981, 1986) have argued that the impact of message quality on receiver attitudes will depend on the receiver's involvement with topic. As involvement increases, so does the impact of message quality on receiver

attitudes. The extent to which intensity affects attitude change via message clarity might therefore depend on receiver involvement with topic. Petty & Cacioppo (1981: 256) have argued that message discrepancy effects will vary inversely with receiver involvement. Hence, the size of the intensity-as-discrepancy-multiplier effect might also depend on receiver involvement with topic.

Two expectancy effects were observed. First, receiver expectations based on initial source credibility moderated the effect of intensity on attitude change. Petty & Cacioppo (1981) contend that the effect of source cues such as initial credibility will depend on receiver involvement; as involvement increases, the impact of source cues on attitude change will diminish. Intensity expectations based on initial credibility, since they involve source cues and are not directly related to message quality, might likewise be affected by receiver involvement. Thus, whether credibility-based expectations are fulfilled or violated may increase in importance as receivers become less interested in or knowledgeable about a topic.

Second, receiver anxiety, source gender and intensity interacted to affect attitude change. This finding should be regarded as tentative until it can be replicated. The existence of gender-based, emotional congruence expectations would explain this complex result. The emotional congruence expectancy explanation would require that receivers interpret high intensity language from a source as a display of emotion, and interpret low intensity language as a display of indifference. Anxious receivers would perceive an emotional source as congruent, whereas sedate receivers would perceive an indifferent source as congruent. Receivers' beliefs about the relative emotional sensitivity of males and females could be the basis for emotional congruence expectations. Several emotional states, in addition to anxiety, might be perceived as congruent with the emotion expressed by intense language. Anxiety has been construed to be a type of cognitive stress (Burgoon et al., 1975) and to be a type of arousal (Bradac et al., 1980). Receivers who experience arousal in the form of involvement with topic might also exhibit the effects of gender-based emotional congruence expectations.

Thus, receiver involvement with topic may have determined the relative size of the information processing-related intensity effects and the expectation-related intensity effects observed in this study. Advocates of the elaboration likelihood model might claim that the moderately large discrepancy effect and the mere presence of expectancy effects, coupled with a moderately small message clarity effect is evidence that receivers were somewhat uninvolved with the topic of legalising heroin use. An important next step in modelling the relationship between language and attitude change would be to investigate the possible moderating influence of receiver involvement with topic.

Notes

1. This paper is based on the first author's doctoral dissertation at Michigan State University, carried out under the supervision of Michael Burgoon and John Hunter. Portions of the results were presented to the International Communication Association held in Montreal, Canada in May 1987.
2. Polarity, boundary and credibility effects can be used to generate non-linear equations.
3. A FORTRAN programme was written to perform the zero-constant regression using a least squares algorithm.
4. None of the terms which were significant in the reduced model were non-significant in the full model.

References

Aronson, E., Turner, J. and Carlsmith, J. (1963) Communicator credibility and communication discrepancy as determinants of opinion change. *Journal of Abnormal and Social Psychology* 67, 31–6.

Basehart, J. (1971) Message opinionation and approval-dependence as determinants of receiver attitude change and recall. *Speech Monographs* 38, 302–10.

Bochner, S. and Insko, C. (1966) Communicator discrepancy, source credibility and opinion change. *Journal of Personality and Social Psychology* 4, 614–21.

Bowers, J. (1963) Language intensity, social introversion and attitude change. *Speech Monographs* 30, 345–52.

Bradac, J., Bowers, J. and Courtright, J. (1979) Three language variables in communication research: Intensity, immediacy and diversity. *Human Communication Research* 5, 257–69.

— (1980) Lexical variations in intensity, immediacy, and diversity: An axiomatic theory and causal model. In R. St. Clair and H. Giles (eds) *The Social and Psychological Contexts of Language*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Bradac, J., Courtright, J. and Bowers, J. (1979) Effects of intensity, immediacy and diversity upon receiver attitudes toward a belief-discrepant message and its source. In H. Giles, W. P. Robinson and P. M. Smith (eds) *Language: Social Psychological and Perspectives*. Oxford: Pergamon.

Burgoon, M. and Chase, L. (1973) The effects of differential linguistic patterns in messages attempting to induce resistance to persuasion. *Speech Monographs* 40, 1–7.

Burgoon, M., Jones, S. and Stewart, D. (1975) Toward a message-centered theory of persuasion: Three empirical investigations of language intensity. *Human Communication Research* 1, 240–56.

Burgoon, M. and King, L. (1974) The mediation of resistance to persuasion strategies by language variables and active–passive participation. *Human Communication Research* 1, 30–41.

Burgoon, M. and Miller, G. (1971) Prior attitude and language intensity as predictors of message style and attitude change following counterattitudinal advocacy. *Journal of Personality and Social Psychology* 20, 240–53.

Carmichael, C. and Cronkhite, G. (1965) Frustration and language intensity. *Speech Monographs* 32, 107–11.

Crowne, D. and Marlowe, D. (1964) *The Approval Motive: Studies in Evaluative Dependence*. New York: Houghton-Mifflin.

Fink, E., Kaplowitz, S. and Bauer, C. (1983) Positional discrepancy, psychological discrepancy, and attitude change: Experimental tests of some mathematical models. *Communication Monographs* 50, 413–30.

Greenberg, B. (1976) The effects of language intensity modification on perceived verbal aggressiveness. *Communication Monographs* 43, 130–9.

Hamilton, M. (1989) Reactions to obscene language. *Communication Research Reports* 6, 67–9.

Hamilton, M. and Costa, C. (1988) The effect of opinionation in language. Paper presented at the Speech Communication Association Convention, New Orleans.

Hamilton, M. and Hunter, J. (1988) PACKET. A computer program to perform multiple groups confirmatory factor analysis.

Hewes, D. (1980) An axiomatized, stochastic model of the behavioural effects of message campaigns. In R. Cushman and R. McPhee (eds.) *Message-Attitude-Behavior Relationship*. New York: Academic Press.

Hunter, J., Danes, J. and Cohen, S. (1984) *Mathematical Models of Attitude Change* (Vol. 1). New York: Academic Press.

Jaccard, J. (1981) Towards theories of persuasion and belief change. *Journal of Personality and Social Psychology* 40, 260–9.

Kaplowitz, S., Fink, E. and Bauer, C. (1983) A dynamic model of the effect of discrepant information on unidimensional attitude change. *Behavioural Science* 28, 233–50.

Kochevar, J. (1967) The effects of message intensity on evaluations of the source, message and the topic. Master's thesis. East Lansing: Michigan State University.

McEwen, W. and Greenberg, B. (1970) The effects of message intensity on receiver evaluations of source, message and topic. *Journal of Communication* 20, 340–50.

Petty, R. and Cacioppo, J. (1981) *Attitudes and Persuasion: Classic and Contemporary Approaches*. Dubuque, Iowa: Wm. C. Brown.

— (1986) *Communication and Persuasion*. New York: Springer-Verlag.

Spielberger, C., Gorsuch, R. and Lushene, R. (1970) *STAI Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press.

Thompson, W. (1965) Message intensity as a variable in the application of the congruity principle and message discrepancy theory. Doctoral dissertation. Iowa City: University of Iowa.

Whittaker, J. (1965) Attitude change and communication-attitude discrepancy. *Journal of Social Psychology* 65, 141–7.

Appendix

High Intensity Message

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 non-existent. 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 agonising 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 are has been directly linked to using all their resources to pay outrageous black market prices for the drug.

Legalising 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 organised 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. Legalising 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 Message

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 non-existent. 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, all 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 tenta- tively agree that heroin causes little physical damage. Symptoms of heroin with- drawal 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 minimal 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.

Legalising 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 organised 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. Legalising 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.

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