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ABSTRACT

Students enrolled in a university educational psychology course were subjects in this study to determine the effects of preparation on the level of vagueness in lecturing. Subjects were provided either five or eleven minutes to prepare lecture notes on a given topic. Results showed preparation time, number of note words, and a test of topic knowledge all yielded highly significant correlations with vagueness. The lecturer's perception of his own effectiveness had a weak relationship with vagueness but a significant relationship with verbal productivity. Females were found to be more predictable then males. (Author/HOD)

July 1973

EFFECTS OF PREPARATION AND SEX ON VAGUENESS IN SELF-PROMPTED LECTURING

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This experiment was designed to test the hypothesis that extent of preparation affects level of vagueness. Subjects were provided either 5 minutes or 11 minutes time to prepare lecture notes. Preparation time, number of note words, and a test of topic knowledge all yielded highly significant correlations with vagueness. The lecturer's perception of his own effectiveness had a weak relationship with vagueness, but a significant relationship with verbal productivity. Females were found to be more predictable than males.

Footnote

[1] This study was conducted while the authors were at Southern Illinois University. An earlier version of this paper was presented at the AERA annual meeting, New Orleans, 1973. Mimeographed copies of the Vagueness Dictionary may be obtained from the first author. Requests for reprints should be sent to Jack, H. Hiller, SWRL, 4665 Lampson Ave., Los Alamitos, CA, 90720.

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It has been hypothesized that speakers in general and teachers in particular employ a limited, identifiable set of vague terms to enable relatively connected speech during moments of confusion, forgetfulness, or ignorance (Hiller, 1969; 1971). An earlier experiment attempted to test this hypothesis by manipulating the information available to speakers as a basis for lecturing, and by manipulating the time available for preparation (Hiller, 1971). Results showed a significant difference for the manipulation of prior information but not for preparation time. The experiment reported here was designed as a further test of the hypothesis that preparation affects vagueness.

Two additional topics were explored. All speakers in Hiller (1971), were male volunteers. To test for the generality of effects across sex, both males and females were enlisted in this experiment. Secondly, an attempt was made to determine if speaker's possess an awareness of their effectiveness by having each speaker fill out a questionnaire immediately after lecturing. Experimental and correlational evidence for perceptual awareness of vagueness by listeners and by readers of the communications of others has been reported elsewhere (Hiller, Marcotte, & Martin, 1969; Hiller, Fisher, & Kaess, 1969; Hiller & Kaess, 1973).

METHOD

Participants

Students enrolled in Educational Psychology at Southern Illinois University participated to fulfill a course requirement. Sign up sheets had spaces for two members of each sex at each session. After each group of four students had gathered, one member of the group was assigned to a Preparation condition, according to a predetermined random schedule, and a second student was given credit and released. The remaining two students, always being one male and one female, then served as a class or audience for the P who was designated to lecture. Lecture data were collected from 34 females and 30 males.

Lesson and Test

The lesson used as the basis for the P lectures was taken verbatim from the Kropp and Stoker (1966) collection, and the test was formed from ten Knowledge and ten Comprehension multiple choice items, also constructed by Kropp and Stoker. The lesson, which described the Lisbon earthquake of 1755 and presented an account of ensuing philosophical debates, was read by the senior E onto a tape recording that took approximately 14 minutes to play.

Procedures

The study was explained to each P as follows: "The purpose of this experiment is to perfect a technique previous research has shown useful for selecting effective teachers. Your performance in this experiment will be tape-recorded for this purpose. Here is what you will be doing during the next hour.

You will deliver lectures to these students who will act as a class and rate your performance. First, you will be given a simple lecture topic, one minute to prepare and a minute-and-a-half to talk. (The topic asked for the reasons that the P might want to be a teacher, and this lecture was obtained for possible use as a covariate or baseline measure of vagueness. It was subsequently found that vagueness in this talk was uncorrelated with vagueness during the experimental lectures, replicating results in Hiller, 1971.) Next you will listen to a tape-recorded lesson on the Lisbon earthquake. After the lesson has finished playing, you will be given an opportunity to prepare a six minute lecture of your own. After the preparation period has finished, you will be tested so that we may determine how prepared you are."

The two member class was then instructed to rate the lecturer with a rating scale provided. It was explained to the class that they were to listen to the taped lesson along with the P to give them a basis for their evaluation, and that they were themselves to take the test so that their own competence could be judged. The class data were collected only to enhance the credibility of the experimental procedures.

Preparation Conditions

After the taped lesson had finished, all Ps were given a common instruction to prepare two lectures, each to last for three minutes. The first lecture was to review the details of the earthquake. The second lecture was to explain the philosophical opinions presented in the lesson and to present the P's personal opinion. All Ps were given

pencils and one 5" x 8" index card for writing lecture notes, which they were free to use while lecturing. Ps in the High Prep. condition worked for five minutes preparing. They were then handed a written copy of the lesson and given another six minutes. For Low Prep. Ps, at the expiration of the initial five minute period, they were asked to read to the class from an article on an unrelated topic for six minutes. All Ps were then tested 11 minutes after the tape had ended.

Self-Report Measures

Immediately after the six minute lecture period terminated, the P filled out a questionnaire concerning:

1. how self-confident P felt while lecturing;
2. how prepared P felt; and
3. how the class would probably rate P for effectiveness.

The questionnaire employed rating scales scored from 1-5, with 5 the most favorable.

At the end of each session, all students were debriefed on the nature and purpose of the experiment, in general terms.

RESULTS

The level of preparation actually achieved by the Ps was estimated in three ways:

1. Preparation condition, High vs. Low. The regression coefficients are based on the scoring of High as 1 and Low as 0. For convenience, the regression coefficients are included in tables that also show correlations.

2. the P's test score;

3. the number of words the P wrote on the lecture note card.

The criterion measure, the Vagueness Proportion, was obtained by counting the number of vague words and phrases spoken by P in each lecture which were listed in the Vagueness Dictionary (Miller, 1968) and then by dividing this count by the total number of words spoken. To enable accurate measurement, the P lectures were transcribed by stenographers. Inter-rater reliability for scoring Vagueness was estimated by having the senior E and a Graduate Assistant independently mark transcripts; the Spearman rank order correlation for 64 transcripts was .97. Before the data were analyzed, all disagreements were resolved by consulting the Vagueness Dictionary.

A second criterion used was verbal production, which was operationalized by two measures:

1. the total number of words spoken during a lecture;

2. the amount of time in seconds that P was silent, where pause times in excess of one second were clocked.

The initial analysis was conducted on data from both sexes combined. Correlations between the Vagueness Proportion, VP, and the three estimates of preparation level follow:

	Review Lecture	Opinion Lecture
1. Preparation Condition	-.35 ($p < .005$)	-.41
2. Test Score	-.39	-.43
3. Total Note Words	-.44	-.55

The self-report measures did not correlate with Vagueness in the Review Lecture. In the Opinion Lecture, self-confidence correlated significantly with VP ($r = -.31$, $p < .01$), as did the P's prediction of his class rating ($r = -.25$, $p < .05$); self-rated preparation was not significantly correlated ($r = -.18$). Verbal productivity was moderately well correlated with the self-ratings, as can be seen in Table 1.

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Insert Table 1 about here

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Separate analyses according to sex yielded a different pattern for the ability of the estimates of preparation to predict vagueness. It may be seen from Table 2 that all three preparedness estimates were

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Insert Table 2 about here

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well correlated with vagueness for the female Ps; VP variance accounted for ranges from a low of 28% to a high of 46%. In contrast to the substantial relationship between vagueness and preparation, verbal productivity was not related to preparation.

In the male data, only one preparation index was significantly correlated with Vagueness, and that correlation was relatively low, -.37 (see Table 3). Verbal production was generally uncorrelated with

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Insert Table 3 about here

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preparation, as was the case for the females.

Female self-report measures were uncorrelated with either vagueness or verbal productivity in the Review Lecture. However, in the Opinion Lecture, their verbal production correlated significantly and much more highly with their ratings than did their vagueness (see Table 4). The male data demonstrated the same pattern with the exception that verbal productivity was well correlated with ratings in the Review Lecture while the correlations for the Opinion Lecture were not as strong (see Table 5).

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Insert Tables 4 and 5 about here

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The final result we think interesting is that the manipulation of preparation had no effect on male test scores and but a slight effect on the number of note words (see Table 3). Whereas the female test scores, and especially note words, were considerably affected by the experimental manipulation (see Table 2).

DISCUSSION

Overall results for data from both sexes combined supported the hypothesis that preparation affects vagueness. Separate analyses of the data according to sex revealed that the individual indices of preparation accounted for twenty-eight to forty-six percent of the variation in vagueness among female lecturers, but that preparation did not generally account for vagueness in the males. The immediate

inference that might, therefore, be drawn is that vagueness is a function of preparation only for females. However, evidence from this, and another, experiment suggests otherwise.

In directly related previous research which had found that knowledge affects vagueness (Hiller, 1971), all participants were male volunteers for an "experiment on lecturing," whereas in the present experiment the males had not volunteered but were fulfilling a course requirement. It can be inferred that differences in motivation explain performance differences in these experiments. Supporting this explanation is the fact that the attempted manipulation of preparation had no effect on the male knowledge test scores, and only a slight effect on the number of words that they wrote on the note cards.

The questionnaire ratings given by the Ps for their own lectures demonstrated that vagueness had only a slight relationship with confidence, preparation, and expected class' evaluation. However, their ratings were well-correlated with the two indices of verbal productivity, and amount of time filled was an even higher correlate than amount spoken in words. These findings would not perhaps be curious except for the fact that verbal productivity was unrelated to all three estimates of preparation, while vagueness was related to preparation, particularly for the females.

Since preparation very likely affects important dimensions of lecturing effectiveness, such as organization, clarity and content, and preparation did not affect verbal productivity, it seems unlikely that amount of talking, or time filled, provides a good indication of

lecturing effectiveness. Since vagueness is affected by preparation, we may infer that vagueness is related to effectiveness; furthermore, a previous study empirically determined that vagueness was significantly correlated with effectiveness in lecturing (Miller, Fisher, & Kaess, 1969). A conclusion may be drawn that the Ps misperceived their effectiveness, that they falsely relied on a criterion of sheer verbiage, and that they failed to recognize that listeners do perceive their vagueness.

These findings suggest that research is needed to determine how teachers evaluate themselves in comparison with how their students judge them. For example, it may be speculated that some college professors employ vague qualifications which they perceive to reflect sophistication, but which their students see as reflecting unimportant and equivocal knowledge. "It would not seem inappropriate, tentatively, to begin training some teachers to more or less reduce the somewhat unnecessary use of rather vague terms," and a program including such training has recently been developed (see R. Miltz, 1972; also described in Gage, 1972).

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TABLE 1

Correlations between Verbal Productivity and Self-ratings, Combined on Sex (N=64)

	REVIEW LECTURE		OPINION LECTURE	
	Words	Silence	Words	Silence
1. Self-confidence	26*	-21*	33**	-45**
2. Preparedness	23*	-30**	39**	-50**
3. Class prediction	24*	-25*	40**	-54**

*$p < .05$; **$p < .01$ (one tail tests)

TABLE 2

Female Results
(16 High Prep., 18 Low Prep.)

REVIEW LECTURE	$\bar{X}$	s.d.	Correlations 1	2	3	4	5	6
1. Review Note Words	60.7	27.4		28	53**	-15	21	-61**
2. Test Score	13.8	2.8			47**	12	-03	-56**
3. Prep. Condition	--	--				10	12	-53**
4. Total Lecture Words	327.0	53.4					-47**	10
5. Time Silent	22.2	22.5						-07
6. Vagueness Proportion	.038	.015						

OPINION LECTURE	$\bar{X}$	s.d.	Correlations 1	2	3	4	5	6
1. Opinion Note Words	39.9	29.5		51**	70**	12	-18	-68**
2. Test Score	13.8	2.8			47**	18	-29	-60**
3. Prep. Condition	--	--				-07	07	-55**
4. Total Lecture Words	258.0	88.2					-86**	-19
5. Time Silent	46.2	37.0						24
6. Vagueness Proportion	.050	.028						

*$p < .05$; **$p < .01$ (one tail)

TABLE 3

Male Results
(16 High Prep., 14 Low Prep.)

REVIEW LECTURE	$\bar{X}$	s.d.	Correlations 1	2	3	4	5	6
1. Review Note Words	55.0	24.4		38*	29	21	-09	-22
2. Test Score	13.6	2.7			-03	-06	19	-19
3. Prep. Condition	--	--				-41*	12	-14
4. Total Lecture Words	324.0	69.8					-60**	04
5. Time Silent	16.7	21.9						05
6. Vagueness Proportion	.038	.014						

OPINION LECTURE	$\bar{X}$	s.d.	Correlations 1	2	3	4	5	6
1. Opinion Note Words	30.5	32.2		-04	37*	08	-11	-37*
2. Test Score	13.6	2.7			-03	-06	12	-16
3. Prep. Condition	--	--				-18	-04	-23
4. Total Lecture Words	267.0	90.6					-76**	-06
5. Time Silent	39.3	41.2						12
6. Vagueness Proportion	.056	.021						

*$p < .05$; **$p < 01$ (one tail)

TABLE 4

Female Questionnaire Results (N=34)

REVIEW LECTURE	Correlations					
	1	2	3	4	5	6
1. Self-Confidence		71**	61**	07	-04	07
2. Preparedness			66**	-17	-03	10
3. Predicted Class Rating				16	-17	00
4. Total Words Spoken					-47**	10
5. Time Silent						-07
6. Vagueness Proportion						

OPINION LECTURE	Correlations					
	1	2	3	4	5	6
1. Self-Confidence		82**	75**	42**	-55**	-31*
2. Preparedness			82**	51**	-63**	-29
3. Predicted Class Rating				56**	-68**	-21
4. Total Words Spoken					-86**	-19
5. Time Silent						24
6. Vagueness Proportion						

*$p < .05$; **$p < .01$ (one tail)

TABLE 5

Male Questionnaire Results (N=30)

REVIEW LECTURE	Correlations					
	1	2	3	4	5	6
1. Self-Confidence		56**	77**	46**	-46**	-07
2. Preparedness			56**	46**	-53**	-32*
3. Predicted Class Rating				31*	-34**	-27
4. Total Words Spoken					-60**	04
5. Time Silent						05
6. Vagueness Proportion						

OPINION LECTURE	Correlations					
	1	2	3	4	5	6
1. Self-Confidence		61**	68**	22	-36**	-31*
2. Preparedness			74**	28	-38**	-10
3. Predicted Class Rating				24	-41**	-32*
4. Total Words Spoken					-76**	-06
5. Time Silent						12
6. Vagueness Proportion						

*$p < .05$; **$p < .01$ (one tail)