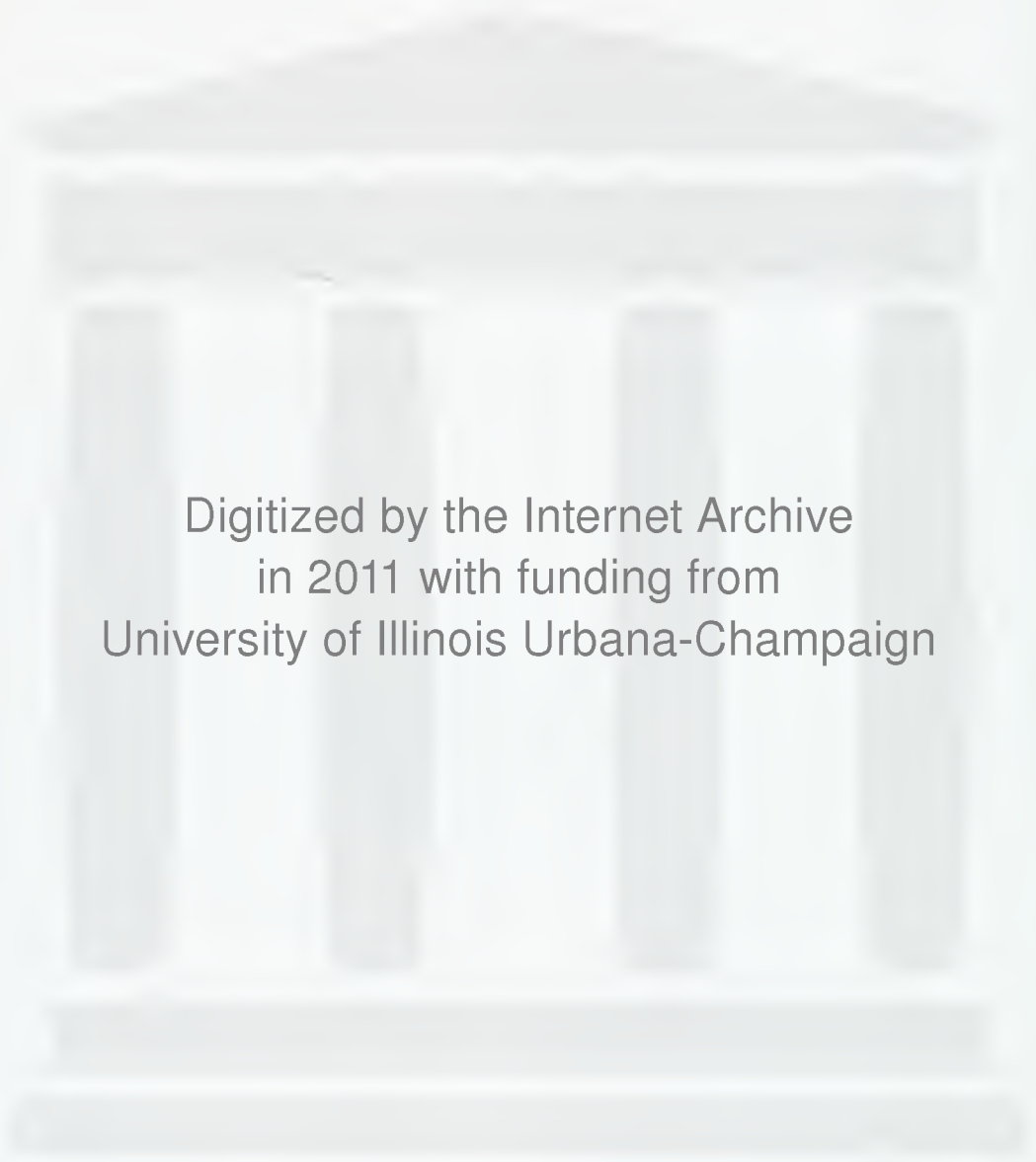




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**Faculty Working Papers**

MORE ON THE EFFECTS OF  
INTERVIEWER'S VOICE INTONATION

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**College of Commerce and Business Administration**  
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INTERVIEWER'S VOICE INTONATION

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#### ABSTRACT

Previous claims that rising interviewer voice intonations elicit higher reporting for "yes-no" checklist questions must be modified or abandoned. Neither the psycholinguistic literature nor data presented in this paper support this effect.



Barath and Cannell (1976) have recently suggested that rising voice intonations in a sequence of "yes-no" questions will elicit higher reporting. That is, an interrogative reading of the questions will elicit higher reporting than a declarative reading. Some additional data reported in this paper suggest that claims for this effect must be modified or abandoned.

#### LITERATURE REVIEW

The psycholinguistic literature on voice intonations neither supports nor contradicts any hypothesis about rising intonations and reporting. Psycholinguistic intonation studies involve variables which generally are not relevant to the interview situation, and these studies never describe whether the intonations which produce effects are rising or falling and where these intonations occur in the speech event. Also, the various studies imply that many variables can be communicated through intonation, so that a rising intonation for the final syllable might have positive, negative, or non-existent effects on reporting depending on the respondent's interpretation of that intonation.

Some articles use intonation as a communicator of affect (Mehrebian and Ferris, 1967; Mehrebian and Wiener, 1967; Zahn, 1973). Others use intonation as an expression of (generally negative) emotions, such as anger, fear, grief and contempt (Davitz and Davitz, 1959; Gates, 1927; Levitt, 1964; Starkweather, 1956; Williams and Sundene, 1965). Emotions such as love, anger, grief or contempt are not likely to surface in a professionally delivered sequence of routine items, and the relationship between perceived affect and reporting is not an obvious one. Perhaps the most relevant variable communicated by intonation, indifference, is examined in only one study (Fairbanks and Pronovost, 1939), and is only one of several variables considered in that study.



Even if the variables studied in psycholinguistic research on intonation are relevant to survey response effects, the psycholinguistic methodology does not fully specify the relationship between affect or emotions and intonation. Speakers are asked to simulate affect or emotions; to intonate in a way that will convey liking, disliking, anger, fear or whatever. They are not told to use a rising intonation or a falling intonation. Judges interpret affect or emotion directly from the speech event. The actual intonation patterns typically associated with intent to convey an emotion or with interpretation of an emotion are not described. As a result, no direct evidence in the literature supports any hypothesis about rising or falling voice intonations.

The most serious problem with using intonation to predict response effects is reliability of interpretation. Short speech events, such as the items in a checklist type of question, cannot exhibit much intonational variance. Affect, emotion and interest wind up being expressed through the same intonation patterns. It's no wonder that Zahn (1973) found inter-rater reliabilities of .37 and .52 for judgments of affect! The effect of interviewer intonation on response will be trivial unless the competing interpretations of an intonation pattern have similar effects.

This literature, studying affect and emotion with a methodology which neither prescribes nor describes intonation, is very difficult to translate into hypotheses about the effect of interviewer's voice intonation on response. Intonation effects may occur, but this literature will not forecast them.





### METHODOLOGY

Experimentation generally is considered the surest way of investigating social science effects. However, experimentation may be counterproductive in a study of voice intonation effects. Interviewers who are instructed to raise their voices for some cases and drop their voices for others may form the same expectation as Barath and Cannell; that the more animated tone will produce greater reporting. That expectation may have greater effects than voice intonation.

This paper analyzed naturally occurring voice intonations, where intonation had not been brought to the interviewer's attention. The data came from tape-recorded interviews which had been completed for a national study of leisure activities. These interviews opened with a twelve-item checklist of general leisure activities, followed by a nine-item checklist of sports activities.

The original sample contained 1,172 interviews, of which 1,048 had been taped. Only 74 of the failures to tape had been refusals. One-half of the cases were randomly subselected; after accounting for further losses due to tapes jamming, tapes which began after the second question, and tapes which were currently unavailable, a sample of 483 cases remained. These cases are representative in the patterns of leisure activity reported.

A coder listened to the sequences of "yes-no" items, and judged whether or not the interviewer was ending each item with a rising intonation. A second coder listened to 40 of the same cases, so that coding reliability could be assessed.



## RESULTS

The results contradict the Barath and Cannell data. Table 1 shows the item-by-item effects of rising or dropping intonation. A rising intonation elicits higher reporting for only 6 of 21 items, and those 6 differences are trivial. Table 2 investigates the possibility that intonation effects only appear in response to a strong pattern. The consistently voice-dropping interviewers obtain higher reporting than the voice-raising interviewers for both sequences. Table 3 correlates the number of activities reported with the incidence of voice-raising, and shows small negative numbers. Controlling for demographic characteristics of the respondent does not affect the data from any of these tables. Of course, significance tests are not necessary to reject the hypothesis that rising intonations elicit higher reporting.

### RELIABILITY OF PERCEIVED INTONATION

Reliability measures between the two coders present some interesting implications about voice intonation effects. The two coders disagreed on 139 of the 840 speech events (40 cases multiplied by 21 items per case). Reversed, this means that the coders agreed only 83.5 percent of the time. Perceived intonation is not as reliable as one might expect.

Inter-coder reliability did not relate to particular items, to position in the sequence, nor to experience of the coder. Reliability did relate to the strength of the intonation pattern. Strength of pattern and number of disagreements correlated  $-.48$  for the general activity sequence and  $-.62$  for the sports sequence (the measure of pattern strength introduced some negative bias into these correlations). This result suggests that interviewers must be using a strong pattern for respondents to reliably interpret whether any one item has been intoned upward or downward.



TABLE 1  
 PERCENTAGE OF "YES" ANSWERS TO DROPPING AND  
 RISING VOICE INTONATIONS

<u>List Item</u>	<u>Voice Dropping</u>		<u>Voice Rising</u>	
	<u>N</u>	<u>% Saying "Yes"</u>	<u>N</u>	<u>% Saying "Yes"</u>
1. Gone to movie	350	37.7	132	38.6
2. Dined at restaurant	326	73.3	156	70.5
3. Window shopped	301	63.8	181	57.5
4. Gone to theater or concert	307	21.8	174	19.0
5. Gone on picnic	286	47.0	195	36.9
6. Hunted or fished	310	20.7	172	20.9
7. Read	306	81.4	177	83.0
8. Driven in an auto	321	70.9	161	69.6
9. Gardened	308	55.2	172	57.9
10. Participated in a civic or religious organization	345	45.5	138	38.4
11. Walked or hiked	311	59.4	170	55.3
12. Attended sports event	402	11.4	79	7.6
1. Played badminton	325	20.6	157	17.2
2. Played basketball	191	26.2	290	20.3
3. Bowled	190	31.1	290	26.2
4. Played football	202	15.8	280	13.2
5. Golfed	169	11.8	312	10.6
6. Racketball and like	286	10.5	192	10.9
7. Played softball or baseball	269	36.4	210	25.7
8. Swam	208	54.3	273	45.0
9. Played tennis	366	18.6	111	18.9



TABLE 2  
 AVERAGE NUMBER OF 'YES' ANSWERS GIVEN TO  
 INTERVIEWERS USING DIFFERENT INTONATION PATTERNS

	<u># of interviews using exclusively dropping tone</u>	<u>Ave. events reported</u>	<u># of interviews using generally rising tone</u>	<u>Ave. events reported</u>
General activities	176	6.04	95	5.76
Sports activities	93	2.49	92	2.07

TABLE 3  
 CORRELATIONS BETWEEN NUMBER OF TIMES VOICE  
 ROSE AND NUMBER OF ACTIVITIES REPORTED

	<u>Voice rising for activities</u>	<u>Voice rising for sports</u>
General activities	-.07	
Sports activities	-.05	-.12





## CONCLUSIONS

The data in this paper indicate that interviewer's voice intonation does not affect response to "yes-no" question sequences.

Several possible reasons may explain why these data contradict the Barath and Cannell data. First, Barath and Cannell used a longer question sequence. This reason seems inapplicable: neither data set shows serial nor cumulative effects, and effects are not greater for Barath and Cannell's later items. Second, Barath and Cannell use shorter speech events. This reason seems inapplicable: the sports activity sequence in this data set contains seven one word items in nine items, and shows no effects.

Third, the subject matter of the two sequences differ. General activity questions are not threatening, and typically do not have response effects associated with them. Health items are threatening, and often have response effects. Interviewer voice intonations may not affect reporting for non-threatening items, but may affect reporting for the more sensitive threatening items. Presumably, the effect would be a reduction in response effect, and the resulting data would be more valid.

Fourth, Barath and Cannell's experimental manipulation may have established interviewer expectations which were fulfilled by coding unclear responses as "yes" or through some feedback from interviewer to respondent. Expectation effects would be undesirable unless only those respondents who report incorrectly are affected.

Fifth, sampling error may account for differences between the two data sets. If sampling error is the only difference between the two, then intonation effects seem implausible. The Barath and Cannell effect was



modest, and was tested under an assumption that health symptoms are independent. Combining this result with a finding of no effect (or reverse effect) in a larger sample will produce a finding of no effect.

Any or all of the last three reasons may have caused differences in results. The third reason suggests that rising intonations elicit higher reporting for "yes-no" question sequences on threatening topics, but not for non-threatening topics. The fourth and fifth reasons suggest that rising intonations have no effect. Combining the possibilities, rising interviewer voice intonations in a "yes-no" question sequence may elicit higher reporting for threatening topics.



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