

# Intonation in Kannada : Some Aspects \*

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The purpose of this study was to analyse the percentage of intelligible responses of a group of listeners to a set of sentences 'spoken' with specific emotions, and also to analyze the intonation patterns of these sentences.

After a series of 3 main pilots, a test list was constructed, which consisted of 36 sentences. 9 emotions (4 primary, 4 secondary and 1 'neutral') were also selected. Each sentence in the test list was associated with a specific emotion. Each emotion was represented 4 times in the list. The sentences were so selected that some of these sentences could be expressed with 2 different emotions.

The 36 sentences selected were provided with context sentences. So the total list now consisted of 72 sentences, *i.e.* :

- (1) 36 sentences not associated with 'context' sentences.
- (2) The same 36 sentences associated with 'context' sentences.

The list of 72 sentences was divided into 2 sets of 36 each (18 sentences without context sentences and the same 18 sentences associated with context sentences). Two 'good' speakers (1 male and 1 female) were selected and each was given a set of sentences. They were asked to 'speak

out' each sentence with the associated emotion.

The recorded sentences of the 2 speakers were mixed in a random order, and recorded on a final tape.

The recorded sentences were administered to a group of 33 listeners, who were divided into 4 categories :

- Group I —Listeners whose native language was Kannada.
- Group II —Listeners whose native language was not Kannada but who 'know' Kannada.
- Group III—Listeners with knowledge of linguistics.
- Group IV—Listeners whose native language was not Kannada and who did not 'know' Kannada.

The sentences were presented through earphones to each individual in a group setting using the 'speech console' system.

The listeners were asked to listen to each of the sentences and to mark the emotion with which it was said. They had to choose the emotion from a closed set of 9 emotions.

The responses of the 4 groups of listeners were analyzed to test the main hypotheses 1 and the 6 sub-hypotheses. They were—

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## Main Hypotheses 1

The listeners can identify the emotions of the sentences simulated by the speakers.

### Sub-hypotheses

- (1) There will be no difference in the levels of intelligible responses of the listeners to the 'primary' emotion of the sentences as compared to the 'secondary' emotions of the sentences.
- (2) There will be no difference in the levels of intelligible responses of the listeners to the test sentences provided with context as compared to the test sentences not provided with context.
- (3) There will be no difference in the levels of intelligible responses between Group III and Groups I and II.
- (4) There will be no difference in the levels of intelligible responses between Group I and Group II.
- (5) The responses of the listeners in Group IV will throw some light on the 'Universality' aspect of intonation.
- (6) There will be no difference in the levels of intelligible responses of the listeners to the sentences of the male speaker as compared to the sentences of the female speaker.

The intonation patterns of the test sentences were marked by a judge who was a native speaker of Kannada and who had a background of linguistics. These were analysed to test the main hypothesis number 2 and also to answer some questions, which were listed as follows :

## Main Hypothesis 2

There are some general intonation pattern in the sentences 'spoken' with specific emotions.

The questions were :

- (1) Are there any variations between the intonation patterns of the sentences spoken by the male speaker and female speaker ?
- (2) Does the intonation pattern of a sentence spoken without context remain the same when the same sentence is spoken with context ?
- (3) When an emotion of a sentence has been misidentified as other emotion by the group of listeners, is there a similarity in the patterns of these emotional sentences ?

### Conclusions

The analysis of the results has led to the following conclusions :

#### Part I

- (1) The listeners can identify the emotions of the sentences simulated by the speakers.

The correct identification scores were greater than 78 per cent.

- (2) There was no difference in the identification scores of the listeners to the primary emotions of the sentences as compared to secondary emotions of the sentences (except for the primary emotion, 'anger').
- (3) Providing context to the test sentences improved the identification scores of



the listeners, for all emotions except for 'fear' and 'neutral'.

- (4) There was no difference between the group of listeners whose native language was Kannada and the group of listeners whose native language was not Kannada but who 'knew' Kannada in terms of percentage identifications of the emotions of the sentence.
- (5) Some emotions of the sentences of the male speaker were identified better than those of the female speaker and *vice versa* also.
- (6) The sentences with emotions 'anger', 'grief' and 'neutral' in Kannada and Malayalam languages seem to have similar intonation pattern.

## Part 2

- (1) The sentences in Kannada with emotion (Frustration, Jealousy, Worry, Surprise, Grief, Joy and Neutral) and with a final fall in the intonation pattern. There is a final rise or fall in the intonation patterns of the sentences with emotion 'fear' and 'anger'.
- (2) In sentences with 'grief' the heights of rise and falls are less and they are more gradual.
- (3) The 'neutral' sentences also have rise and falls, but the degree of rise and falls are very less.
- (4) The intonation patterns of the sentences with the same emotion were different for male and female speakers.
- (5) A sentence with a specific emotion can be expressed with more than one

type of intonation pattern and a single intonation pattern may be used to express sentence with different emotion.

- (6) The intonation pattern of a sentence depends on the intonation patterns of the preceding and following sentences.
- (7) The misidentifications of emotions of the sentences by the listeners may be due to the fact that the sentences with intended emotion and the sentences with emotion which were misidentified as intended emotion shared the common intonation patterns (61 per cent of the time). The misidentifications of the emotions of the sentences may also be due to other factors existing along with their common intonation pattern.

## Recommendations

- (1) It would be interesting to see if there are any differences in the intonation pattern of sentences of Lay people and children when compared to the sentences of the 'good' speakers.
- (2) Spontaneous speech in Kannada needs to be analysed for all features of intonation. A study of intonation patterns of different dialects in Kannada and a comparison with the intonation patterns of other languages would be very useful.
- (3) It is also recommended that more number of sentences be studied using more number of listeners and instrumental analysis be performed on different speech samples.