

# Perception and Interpretation of Non-Native Intonation Patterns

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## 1. Introduction

Most of the few studies on non-native use of intonation are *production* studies (Anderson, 1979, MacNaught, 1978), analyzing overt 'foreign accents' but failing to reveal the less obvious though no less impairing interference of defective *comprehension* of intonation (Berkovits, 1980; Scuffil, 1982).

This paper outlines an experiment designed to assess non-native comprehension of intonation in (European) Portuguese and (British) English, using as informants thirty native speakers of each language who could speak the other (Cruz-Ferreira, 1983). Material was, for each language, a set of thirty minimally paired sentences, differing in intonation only, or presenting the same intonation twice ('filler' pairs) spoken on tape by a native speaker of each language (the intonational framework used is based on Halliday, 1967 and O'Connor and Arnold, 1973). Each pair conveys meaning distinctions which may or may not be rendered by the same intonational means in L2 (or by intonation at all). The task was a closed-choice binary decision on two levels: i) *perception*: decide whether the sentences in each pair have the 'same' or 'different' meaning, and ii) *interpretation*: match one of the two meaning glosses provided for each pair with one or both of the sentences, according to the previous decisions. This layout enabled conclusions regarding non-native ability to *discriminate* the patterns (by perceiving them as the same or as different); to *interpret* the patterns (through the meaning assigned to each or to both); and to *identify* the patterns (i.e. to recognize them as meaningful in the filler pairs).

Each native group was asked to provide answers for their native tongues too, and the results were used as control values for statistical treatment of the non-native data ( $p \leq .05$ ). Some very general characteristics of Portuguese intonation are (as relevant in explaining the results presented below): there are no falling-rising intonations in Portuguese, but there is a very low starting falling tone, the 'low low-fall'; the nucleus has a fixed final position within the intonation group.

## 2. Analysis of Some Results

Some typical non-native replies.

The non-natives had no difficulties

1. where the same meaning contrast is conveyed by the same intonational device in  $L_2$  and in  $L_1$ .

1. Same meaning conveyed by same intonational device in  $L_1$  and  $L_2$  object v apposed subject

Ptg	_ela co <sup>1</sup> meu a galinha	int. dev. tonality
	ela comeu/a galinha	n-n reply. 1 IG: NP <sub>2</sub> = object
		2 IG: NP <sub>2</sub> = apposed subject
Eng.	they've <sup>1</sup> left the children	
	they've left/the children	

The interpretation of F~RF as conveying 'neutral' vs. 'impressed' statements in both languages was also correct for both groups of listeners.

2. where the meaning contrast in  $L_2$  may be associated with a typical use of high versus low nuclear pitch in  $L_1$ .

2. Meaning contrast in  $L_2$  may be associated with a typical use of 'high' versus 'low' nuclear pitch in  $L_1$  command v warning

Ptg.	não <sup>~</sup> bebas dessa água	int. dev. tone Low LF~LF
	não <sup>~</sup> 'bebas dessa água	n-n reply. Low LF = command
		LF = warning
Eng.	I don't leave the house	int. dev. tone F~FR
	I don't leave the house	n-n reply. F = command
		FR = warning

English F~FR, conveying 'neutral' vs. 'reserved', statements, was also correctly interpreted by the Portuguese listeners. Even where one of the contrasted patterns does not exist in  $L_1$ , the non-natives seem to be sensitive to differences in the gross phonetic shape of the patterns, and to associate overall higher pitch with a more 'open' meaning, and lower pitch with a more 'final' overtone (see Cruttenden 1981).

The non-natives had difficulties

3. with idiosyncratic uses of intonation in  $L_2$ .

These fall into three classes:

3.1. where the meaning conveyed by intonation in  $L_2$  has no intonational equivalent in  $L_1$ .

3. Idiosyncratic uses of intonation in each language

3.1. Meaning conveyed by intonation in  $L_2$  has no intonational equivalent in  $L_1$  'not... any' 'not... any'

Eng.	they <sup>1</sup> don't admit any students	int. dev. tone F = 'none at all'
	they don't admit any students	FR = 'only some'
		n-n reply. perception: random
		interpretation: random

The distinction between any and any is made through lexical means in Portuguese. In a filler pair presenting the any pattern twice, the Portuguese perceived the patterns as the 'same' but assigned to both the 'none at all' meaning of a straightforward negative.

On the other hand, in a Portuguese pair presenting constant polarity tags with LR and LF, which convey the same 'patronizing' overtone, the English perceived the tones as 'different' and gave random replies to their interpretation.

3.2. where the meaning contrast is conveyed by intonation in both languages, but the device used in  $L_2$  is non-existent in  $L_1$ .

3.2. Meaning is conveyed by intonation in both languages, but  $L_2$  device is non-existent in  $L_1$  positive vs negative presupposition

Eng.	I <sup>v</sup> thought she was married	int. dev. tonicity V = pos
	I thought she was married	obj = neg
		n-n reply. perception: random
		interpretation: random

3.3. where the intonational devices exist in both languages, but are put to different uses.

3. Idiosyncratic uses of intonation in each language

3.3. Intonational devices exist in both languages, but are put to different uses positive v negative presupposition

Ptg	eu sempre achei que ele vinha	int. dev. tone LF = pos
	eu sempre achei que ele vinha	HF = neg
		n-n reply. perception: 'different'
		interpretation: random

In these three cases, the contrastive meanings dependent on various aspects of intonation are idiosyncratic to L<sub>2</sub>. The use of intonation in L<sub>2</sub> cannot therefore be deduced from uses of intonation in L<sub>1</sub>.

4. *with items or syntactic structures usually associated with one particular meaning.*

4. *Syntactic structure or item usually associated with one meaning question vs exclamation*

Eng.	'dɪdn't John en'joy it	<i>int. dev. tone</i> F = exclamation
	'dɪdn't John en'joy it	LR = question
		<i>n-n reply. perception: random</i>
		<i>interpretation: random</i>

In English, inversion structures are commonly associated with an interrogative meaning. Random results were also obtained by the English listeners to a Portuguese pair presenting two alternative interpretations of a word ('*como*'), usually associated with an interrogative meaning too.

### 3. Conclusions

On the whole, the hesitation of the non-native in assigning meaning to the intonation patterns of L<sub>2</sub> was clear. Most patterns were either misunderstood through the assignment of a wrong meaning to them – or not understood at all – as proved by the large number of random replies. These results argue for the arbitrariness of certain intonational meanings. But the results also show that the non-natives do not always hesitate when the foreign pattern is non-existent or has no equivalent use in their mother tongue. They apparently do not have the exact native patterns in mind and, in some cases, seem to make use of some 'internalized' abstract functions of intonation. These results show that some features of intonation and associated intonational meanings seem to lie beyond particular uses in each language. It seems possible to set up some interpretive *strategies* that non-natives use in listening for intonational meaning in L<sub>2</sub>:

- *the transfer strategy*: where the same intonational difference operates on a familiar structure in L<sub>1</sub>, the meaning conveyed by intonation in L<sub>1</sub> is generalized to L<sub>2</sub> (see 1);
- *the pitch height strategy*: where the meaning contrast conveyed by intonation in L<sub>2</sub> can be associated with broadly similar uses of pitch contours or pitch height in L<sub>1</sub>, 'abstract' generalizations regarding meaning seem to be made, correlating higher overall pitch with 'openness' and lower pitch with 'finality' (see 2);
- *the lexico-syntactic strategy*: where certain lexical items or grammatical patterns of L<sub>2</sub> are most commonly associated with one particular meaning, this straightforward interpretation suggested by the words will tend to override alternative interpretations which are intonation-dependent

(see 4); if the patterns are perceived as the 'same' (viz. in the filler pairs), this strategy results in the assignment to both patterns of the meaning favouring a more straightforward interpretation of the words (see comment for the pair presenting the *any* pattern twice, in 3.1).

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