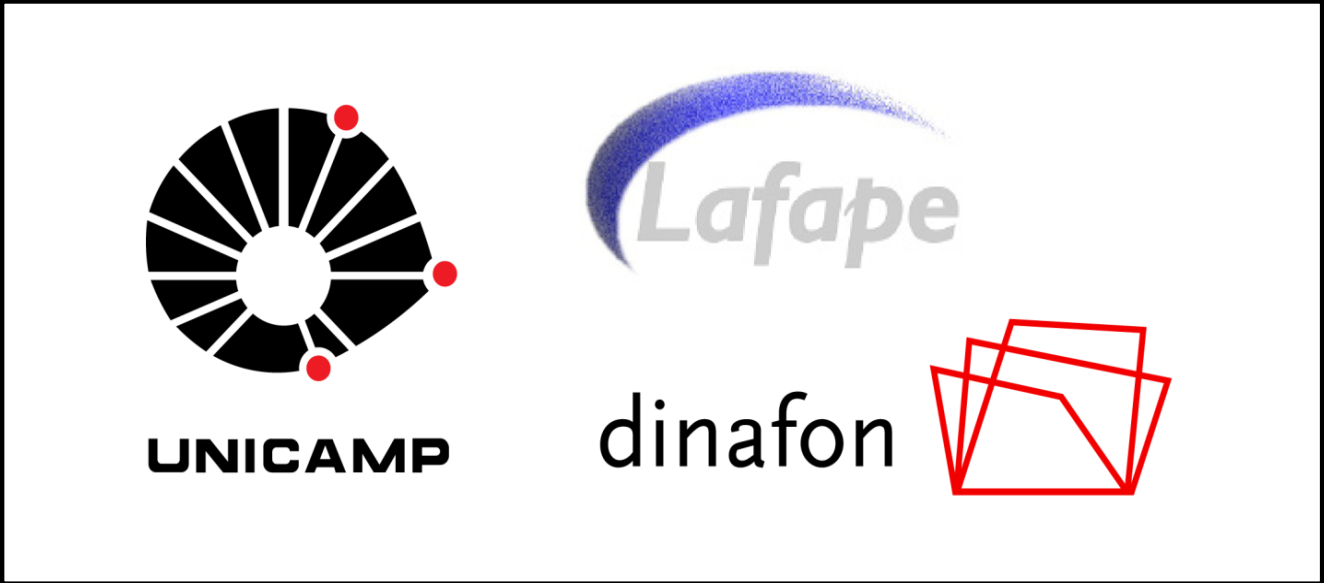# The relationship between speech and singing in Bossa Nova

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INTRODUCTION

♪ Singing is a possibility of historical accomplishment of the language. Is special because it combines the continuous linearity of melody, articulated linearity of text and musical parameters (Tatit, 1995).

♪ A Brazilian guitar player, Joao Gilberto, summed up Bossa Nova's (BN) beat and developed a way of singing that was close to speech (Garcia, 1999).

AIMS

♪ The aim of this study is to investigate influences of musical and linguistic aspects in 'Chega de Saudade' and 'Wave' songs;

♪ Compare musical scores with sung and recited interpretations of three Brazilian Popular Music singers, based in Acoustics Phonetic, Prosodic Phonology (Nespor & Vogel, 1985) and Traditional Metrics.

HYPOTHESES

♪ There are relationships between prosodic and musical structure in BN;

♪ Linguistic structure influences lyrics prosody.

METHODS

SUBJECTS:

♪ Three Brazilian Popular Music singers (JV, LN and MP), age between 20 and 30 years.

PARAMETERS:

♪ **First derivative:** applied in pitch curve was used to analyze tone;

♪ **Observed/expected (O/E) ratios:** were applied in pauses;

♪ **Prosodic Phonology and Traditional Metrics:** applied in songs' text for segmentation;

♪ *Tempo* **(weak or strong)**: were tested for association with syllable stress;

♪ **Z-scores:** applied in syllable duration;

♪ **Non-parametric statistics:** to compare the variables: 'position of *caesura*', 'end of verse position', 'phonological phrase position', 'intonation phrase position', 'pause prominence', 'tone prominence', 'duration prominence' and '*tempo* prominence*';

♪ $p < 0,05$;

♪ Cramer's V are in the expected range values.

ABSTRACT

This study investigates the relationship between speech and song based on the study of 'Chega de Saudade' and 'Wave' musical score, and interpretation of three popular singers. Prosodic units and measures of tone, duration and pause were analysed. Non-parametric statistics revealed that singing Bossa Nova is not always influenced by the speech, it is the singing that influence the speech. The results suggest mutual influences between linguistic and songs studied.

DESIGN

TABLE 1 Musical Scores and Singers' Production Design	Musical Scores	A capella Singing	Singing with musical accompaniment	Recitation	Reading of newspaper articles and some songs
Chega de Saudade	Score	JV, LN, MP	JV, LN, MP	JV, LN, MP	JV, LN, MP
Wave	Score	JV, LN, MP	JV, LN, MP	JV, LN, MP	JV, LN, MP

Condition 1: Musical scores of 'Chega de Saudade' and 'Wave' were investigated;

Condition 2: Singers sang 'Chega de Saudade' and 'Wave' *a capella* (without musical accompaniment);

Condition 3: Singers sang 'Chega de Saudade' and 'Wave' with musical accompaniment;

Condition 4: Singers recited 'Chega de Saudade' and 'Wave';

Condition 5: Singers read newspaper articles and lyrics of several songs.

RESULTS AND DISCUSSION

MUSICAL SCORE		
	Beat Prominence	Pause Prominence
Caesure, Verse Boundaries	CS W	CS W

A CAPELLA, WITH MUSICAL ACCOMPANIMENT SINGING AND RECITATION		
	Pause Prominence	Duration Prominence
Phonological, Intonational Phrase Boundaries	JV-CS JV-W LN-CS LN-W MP-CS MP-W	LN-CS MP-W

♪ Caesura, verse, phonological and intonation phrase boundaries are preserved by pause and duration prominence;

♪ These results reveal influences of linguistic structure on music aspects.

MUSICAL SCORES, A CAPELLA SINGING, WITH ACCOMPANIMENT AND RECITATION	
	Pause Prominence
Duration Prominence	CS W JV-CS JV-W LN-CS LN-W MP-CS MP-W

♪ Pause tends to coincide with duration prominence in musical scores and singers' productions;

♪ These results suggest influences of linguistic structure about music aspects.

MUSICAL SCORES			
	Stress Prominence	Pause Prominence	Duration Prominence
Beat Prominence	CS W	CS W	CS W

SINGING WITH MUSICAL ACCOMPANIMENT			
	Stress Prominence	With Pause	With Duration Prominence
Beat Prominence	JV-CS JV-W LN-CS LN-W MP-CS MP-W	JV-CS JV-W LN-CS LN-W MP-CS MP-W	JV-CS JV-W LN-W MP-CS MP-W

♪ Strong beat tends to coincide with stressed syllables, pauses, and duration prominence;

♪ The results suggest that the typical BN beat is given by its rhythmic structure, which is implemented without distorting the lyrics.

♪ These finding reveal influences of music aspects on linguistic structure.

CONCLUSION

♪ This study revealed that singing BN in not always influenced by the speech. At some moments, it is the singing that affects speech;

♪ These results suggest mutual influences between linguistic and musical aspects in songs studied.

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