

Statistical Speech Segmentation in Tone Languages: The Role of Lexical Tones

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LANGUAGE AND SPEECH

Volumen: 61

Número: 1

Páginas: 84-96

DOI: 10.1177/0023830917706529

Fecha de publicación: MAR 2018

Tipo de documento: Article

[Ver impacto de la revista](#)

Abstract

Research has demonstrated distinct roles for consonants and vowels in speech processing. For example, consonants have been shown to support lexical processes, such as the segmentation of speech based on transitional probabilities (TPs), more effectively than vowels. Theory and data so far, however, have considered only non-tone languages, that is to say, languages that lack contrastive lexical tones. In the present work, we provide a first investigation of the role of consonants and vowels in statistical speech segmentation by native speakers of Cantonese, as well as assessing how tones modulate the processing of vowels. Results show that Cantonese speakers are unable to use statistical cues carried by consonants for segmentation, but they can use cues carried by vowels. This difference becomes more evident when considering tone-bearing vowels. Additional data from speakers of Russian and Mandarin suggest that the ability of Cantonese speakers to segment streams with statistical cues carried by tone-bearing vowels extends to other tone languages, but is much reduced in speakers of non-tone languages.

Palabras clave

Palabras clave de autor: [Lexical tone](#); [tone language](#); [transitional probability](#); [speech segmentation](#); [consonants and vowels](#)

KeyWords Plus: [CONSONANTS](#); [VOWELS](#); [DEPENDENCIES](#); [CONSTRAINTS](#); [ADJACENT](#)

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Financiación

Entidad financiadora	Número de concesión
European Research Council under the European Union	269502
Chilean CONICYT program PIA/BASAL	FB0003
Alexander von Humboldt Foundation	
Basque Foundation for Science (Ikerbasque)	

[Ver texto de financiación](#)

Editorial

SAGE PUBLICATIONS LTD, 1 OLIVERS YARD, 55 CITY ROAD, LONDON EC1Y 1SP, ENGLAND

Información de la revista

- **Impact Factor:** [Journal Citation Reports](#)

Categorías / Clasificación

Áreas de investigación: Audiology & Speech-Language Pathology; Linguistics; Psychology

Categorías de Web of Science: Audiology & Speech-Language Pathology; Linguistics; Psychology, Experimental

Información del documento

Idioma: English

Número de acceso: **WOS:000429089400005**

ID de PubMed: 28486862

ISSN: 0023-8309

eISSN: 1756-6053