

INVESTIGATING SECOND LANGUAGE SPEECH: INTRODUCTION

Rosane Silveira*

Federal University of Santa Catarina, BRA

Walcir Cardoso**

Concordia University, CAN

Ocke-Schwen Bohn***

Aarhus University, DEN

Over the last 15 years, the field of second/foreign (L2) language pronunciation has witnessed an increase in research dedicated to its acquisition, particularly involving the perception and production of speech, and the effects of teaching on the development of these two important aspects of phonological knowledge. As a sign of the interest devoted to the field, the previous decade has seen a surge in related publications, including the organization of handbooks of pronunciation (e.g., Kang, Thomson, & Murphy, 2017; Reed & Levis, 2015), special journal issues (e.g., Cardoso & Trofimovich, 2015 – see also this collection), and the birth of a journal dedicated exclusively to L2 pronunciation (John Benjamin's *Journal of Second Language Pronunciation*, edited by John Levis). The current issue of *Ilha do Desterro* aims to contribute to the field by providing new empirical data and analyses involving a wide range of first and second languages, topics, research methods, and learning/teaching contexts. It includes topics involving speech perception and production (see forthcoming discussions), application and testing of theories and models of L2 speech development and phonological

representations (e.g., Vieira; John & Cardoso), acquisition of L2 phonology and phonotactics (e.g., John & Cardoso; Luchini), multilingualism (Preuss & Rodrigues; Rafat), pronunciation teaching and its effects on learning (including Voice-Onset Time – VOT, segments, syllable structures, stress and spoken lexis – e.g., Alves & Luchini; Kivistö-de Souza, Carlet, Jułkowska, & Rato), teacher cognition and training on pronunciation (e.g., Buss), and sociolinguistic and psycholinguistic aspects of L2 speech learning (these include the studies by Cornwell; Alvez & Luchini, respectively).

The conceptualization and planning of this issue coincided with the 2016 *International Symposium on the Acquisition of Second Language Speech (New Sounds)*; organized by Ocke-Schwen Bohn at Aarhus University in Denmark), an event founded by Allan James and Jonathan Leather, in 1990. Due to this coincidence and the shared interests and goals of *New Sounds*, a call for papers for this thematic issue on L2 speech was publicized after the event and shared across all *New Sounds* members from over 50 countries. This collection

* Faculty member of the Department of Foreign Language and Literature, and of the English Post-Graduation Program at the Federal University of Santa Catarina. She is a research fellow of the National Council for Scientific and Technological Development (CNPq). Her teaching and research interests involve the development and teaching of L2 speech. Currently she is also the coordinator of the *Letras* Undergraduate Program. E-mail: rosanesilveira@hotmail.com.

** Professor of Applied Linguistics at Concordia University (Montreal, Canada). He conducts research on the L2 acquisition of phonology, morphosyntax and vocabulary, and the effects of computer technology (i.e., clickers, text-to-speech synthesizers, automatic speech recognition, and personal assistants) on L2 learning. E-mail: walcir.cardoso@concordia.ca

*** Professor of English Linguistics at the Department of English, Aarhus University (Denmark). His teaching and research interests include infant and cross-language speech perception and L2 speech. E-mail: ocke.bohn@cc.au.dk.



thus constitutes a snapshot of recent developments in the field and research being conducted by L2 phonologists across the globe. The international scope of this issue is reflected in unique data collected and/or analyzed in eight different countries (Argentina, Brazil, Canada, Italy, Portugal, Spain, United Kingdom, and United States), from a variety of language perspectives: nine different first/native languages (Catalan, Dutch, English, Farsi, Haitian Creole, Brazilian/European Portuguese, Russian, Spanish and some language combinations in multilingual contexts such as Farsi-English, English-Portuguese and Portuguese-Spanish) and four target L2s (English, French, Portuguese, and Spanish). In addition, the selected articles comprise a wide variety of L2 learning settings, such as multilingual/bilingual (Preuss & Rodrigues; Rafat), heritage (Cornwell; Rafat; Zárata-Sández), technology-enhanced (John & Cardoso), naturalistic (Cornwell; Silva), teacher-training (Buss; Lima Jr.), immigration (Cornwell; Kupske; Preuss & Rodrigues; Silva), laboratory (Alves & Luchini; Vieira; Kivistö-de Souza, Carlet, Jułkowska, & Rato), and traditional classroom environments (Buss; Zárata-Sández).

The target learning features range from lower-level phonetic features, such as VOT (Alves & Luchini; Kupske), vowels (Correa & Ferreira-Gonçalves; Kivistö-de Souza; Lima Jr.; Souza), and consonants (Silva; Cornwell; Rafat), and higher-level suprasegmental features including syllables (John & Cardoso), nuclear stress (Luchini), and the spoken lexis (Vieira). Some articles, however, extrapolate the confines of specificity and examine the personality or identity traits that affect the acquisition of L2 speech (Cornwell; Zárata-Sández). Finally, many articles emphasize the pedagogical implications and applications of research in L2 speech perception and/or production (Alves & Luchini; Buss; Luchini; Vieira).

This volume can roughly be divided into three main sections based on their general focus. While most articles focus exclusively on speech production (Correa & Ferreira-Gonçalves; Cornwell; Lima Jr.; Luchini; John & Cardoso; Kupske; Preuss & Rodrigues; Rafat; Zárata-Sández), a handful of articles examine L2 phenomena from the perspective of perception (Kivistö-de Souza;

Silva), or both perception and production (Alves & Luchini). This general distributional pattern dictated the main organization of the articles in this thematic issue. We summarize below the articles included in this collection of studies examining L2 speech, organized in order of appearance, according to the criteria described:

1. *Effects of Perceptual Training on the Identification and Production of Word-initial Voiceless Stops by Argentinean Learners of English*; by Ubiratã Kickhöfel Alves & Pedro Luis Luchini. In this study, Alves and Luchini investigate the effectiveness of perceptual training on the perception and production of VOT in word-initial voiceless stops in English. Their study gathered data from 24 Argentinean, Spanish-speaking participants, who were stratified among two experimental groups and a control. They were asked to engage in perception training via the manipulation of two variables: perceptual training alone, perceptual training plus explicit instruction. They were then tested using a consonant identification task (for perception) and a read-aloud activity (for production). Their results show a significant increase in perception by the two experimental groups that received perceptual training on VOT, while for production, only the group that received explicit instruction improved over the treatment period and posttests.

2. *Vowel inventory size matters Assessing cue-weighting in L2 vowel perception*; by Hanna Kivistö-de Souza, Angélica Carlet, Izabela Anna Jułkowska, and Anabela Rato. In this experimental study, Kivistö-de Souza et al. examine whether the inventory size of vowels in the L1 can contribute to the use of temporal cues in L2 vowel perception. They assessed the perception of English vowels /i-ɪ/ by L1 speakers of Danish, Portuguese, Catalan, and Russian performing a forced-choice identification task containing natural and duration-manipulated stimuli. Their results show that the participants' over-reliance on duration cues partially relate to their L1 vowel inventory size. In other words, the participants with the largest L1 vowel inventory (Danish) demonstrate the most native-like vowel perception while those with the smallest L1 vowel

inventory (Russian) over-rely on duration cues more than the other learners. Interestingly, the participants with somewhat comparable L1 vowel inventories (Portuguese and Catalan) perform similarly.

3. *Portuguese language learning by Haitian immigrants: The perception of the liquid consonants /l/ and /r/*; by Susiele Machry da Silva. This article by Silva investigates the perceptual development of /l/ and /r/ in intervocalic contexts by a group of Haitians who have recently immigrated to Brazil. Following insights from Flege (1995) and Best and Tyler (2007), the author hypothesizes that these segments would be relatively difficult to acquire because they would be categorized as a single unit by their Haitian Creole speaking participants, due to the phonotactics of their L1 and to how these segments are transferred into the L2. Findings confirm the author's prediction and, in addition, they reveal that exposure to the target Brazilian Portuguese (measured in terms of length of residence and class attendance) had positive effects on their perception of non-native /l/ and /r/ in L2 Portuguese.

4. *Bilingual speech production: evaluating linguistic similarity, language switching costs and attentional system*; by Elena Ortiz Preuss and Taiany Braz Rodrigues. Turning now to studies targeting speech production, the research conducted by Preuss and Rodrigues analyzed similarity and switching cost effects on two experimental tasks (attentional network and picture-naming) by a group of Portuguese-English and Portuguese-Spanish bilinguals, within the language-switching paradigm. The results reveal that, in within-subjects comparisons, the significant differences observed signal an asymmetrical cost of language switch. These findings corroborate the authors' hypothesis that linguistic similarity effects could influence learners' production in attentional network and picture-naming tasks.

5. *A complex approach on integrated late bilinguals' English VOT production: a study on south Brazilian immigrants in London*; by Felipe Flores Kupske. Another study that focuses exclusively on learners'

production is that by Kupske, who investigates the correlation between length of residence (LOR) of a group of Brazilian immigrants in London and their production of VOT in L2 English. Adopting a complex perspective to language analysis, and via comparisons of the acoustic nature of native versus non-native VOT patterns, the findings indicate that the participants' VOT values for English are positively correlated with their LOR, suggesting that the neuroplasticity and the cognitive mechanisms for language development remain intact during the lifespan of immigrants who do not speak the language of the host country.

6. *Interdental fricative production in Dutch heritage language speakers in Canada*; by Sarah Cornwell and Yasaman Rafat. Cornwell and Rafat's study also examines a group of immigrants (Dutch) and how their willingness to display their L1 identity is reflected in their oral production of the interdentals in L2 English in Canada. Adopting a mix of naturalistic and reading tasks, the results confirm the authors' hypothesis that the Dutch participants would manipulate their production of interdentals to sound L1-like so that they could, subconsciously, express their Dutch cultural identity.

7. *The influence of metalinguistic knowledge of segmental phonology on the production of English vowels by Brazilian undergraduate students*; by Ronaldo Manguera Lima Jr. The study by Lima Jr. examines the effects of explicit metalinguistic instruction of segmental phonology on the production of three pairs of vowels that are highly confusing for Brazilians: /i ~ ɪ/, /ε ~ æ/ and /u ~ ʊ/, which tend to be produced as their prototypical L1 counterparts /i/, /ε/, and /u/ respectively. This time, the focus is on in-training EFL teachers who significantly improved in their ability to produce these vowels after instruction that emphasized the development of metalinguistic awareness for vowels. The discussion of the results of this longitudinal study, based on spectral quality analyses of speech samples, highlights the importance of providing future language teachers with metalinguistic information on the production of vowels.

8. *Acquisition of French nasal vowels [ɛ̃], [ã] and [õ] by Brazilian learners: articulatory aspects*; by Bruna Teixeira Correa, Giovana Ferreira-Gonçalves, and Mirian Rose Brum-de-Paula. This study focuses on the articulation of French vowels that pose difficulties to Brazilian learners of French. The study compares articulatory data of vowels produced by two Brazilian learners of French from different proficiency levels, a native speaker of French, and a native speaker of Brazilian Portuguese. Ultrasonographic images were used to describe the tongue movements of each group when producing nasal and oral vowels; the results show that target-like tongue gestures for producing the French vowels were observed for the more proficient Brazilian learner of French.

9. *Geminate attrition across three generations of Farsi-English bilinguals living in Canada: An acoustic Study*, by Yasaman Rafat, Mercedeh Mohaghegh, and Ryan Stevenson. The production of geminate-singleton consonants is investigated in this article, which is concerned with language attrition in the speech of Farsi-English speaking bilinguals residing in Canada. Three generations of Farsi immigrants provided data for the study. Important independent variables in the study were bilinguals' age of arrival in Canada, and the effects of manner of articulation and voicing. The data were collected with a word-naming task and the target consonants were acoustically analyzed. The study found evidence of geminate-singleton attrition across the three generations of bilinguals, and attributes this attrition to universal phonetic principles.

10. *On syllable structure and phonological variation: The case of i-epenthesis, by Brazilian Portuguese learners of English*, by Walcir Cardoso and Paul John. The authors investigate oral production data by relying on nonword-learning tasks completed by Brazilian learners of English. Their goal is twofold: to discuss syllabification in word-medial and final positions, and to investigate the source of L2 phonological variation. The study focuses on /p/ and /k/ codas to test the hypothesis that L2 variation in coda production is lexical rather than derivational, given that L2 lexical

items may have dual underlying representations and either of them may be retrieved for speech production. The results corroborate this hypothesis and the authors make a case for the existence of dual representations for single lexical items in L2 speech.

11. *Measurement for Accentedness, Pause Frequency/Duration and Nuclear Stress Placement in the EFL Classroom*, by Pedro Luis Luchini. The goal of this study is to examine the effects of different types of pronunciation teaching on a number of phonological features by Argentinean learners of English. The author compares the production of two groups who received different types of pronunciation instruction: controlled exercises and awareness-raising about phonological forms. Raters analyzed the data and attributed rates for four dependent variables: accentedness, frequency and duration of pauses, and nuclear stress placement. The results suggest that, for all measures of pronunciation knowledge included in the study, awareness-raising instruction is more effective than the controlled exercises.

12. *The Role of Training in Shaping Pre-Service Teacher Cognition Related to L2 Pronunciation*, by Larissa Buss. This classroom-based study investigates teachers' cognition regarding L2 pronunciation teaching. The author uses questionnaires and interviews to gather information from undergraduate students enrolled in two different Teaching English as a Second Language programs in Canada. Her results show that the group of students who attended a course focusing on phonology and pronunciation teaching developed a positive view of pronunciation teaching, improved their level of confidence for the teaching of pronunciation, and sharpened their awareness about their own pronunciation.

13. *Reexamining L2 Accent: How Much Can Personality Explain*, by Germán Zárate-Sández. This study investigates the role a non-linguistic variable, personality, in L2 accent. The talkers were English-speaking learners of Spanish who provided Spanish production data while completing an image description

task. The productions were rated for degree of L2 accent by three expert raters. Five dimensions of personality were measured: openness to experience, conscientiousness, extroversion, agreeableness, and neuroticism. The results indicate a significant negative correlation between neuroticism (i.e., anxiety) and L2 accent, and a positive significant correlation between extroversion and L2 accent.

14. *Lexical Access in L2 Speech Production: A controlled Serial Search Task*, by Gicele Vergine Vieira. Based on a correlational analysis, the author uses measures of working memory capacity and L2 proficiency to predict bilingual lexical access by a group of Brazilian learners of English from varied proficiency levels. The lexical access measure consists of a picture-naming task. The author observed better performance on the picture-naming task by learners with higher working memory. She explains this behavior by alleging that more proficient learners possess more automatized L2 knowledge, and thus have sufficient attentional resources to retrieve lexical items.

Finally, the issue brings a review of the book *Second Language Acquisition* (Slabakova, 2016), written by Alessandra Anastasi.

A bit of history and dedication

In the context of this thematic issue, we would like to recognize the importance of a Brazilian research group to the dissemination of studies related to L2 speech: The *Núcleo de Fonética e Fonologia Aplicada à Língua Estrangeira* (NUPFFALE). Since its inception in 1999, first under the guidance of Professor Barbara Oughton Baptista, and currently under the coordination of Dr. Rosane Silveira, this group has produced many relevant publications in the field (e.g., Baptista, Koerich, & Rauber, 2006; Baptista, Koerich, & Silveira, 2008; Zimmer, Alves, & Silveira, 2009; Rauber, Watkins, Silveira, & Koerich, 2010). This group is associated with the Graduate English Program of the Federal University of Santa Catarina (Brazil), which hosts the prestigious *Ilha do Desterro*,

a *Journal of English Language, Literatures in English and Cultural Studies*.

NUPFFALE was responsible for the revival of *New Sounds*, which had remained dormant from 2000 through 2007 due to the retirement of its creators, Allan James and Jonathan Leather. Thanks to this initiative, L2 speech researchers continue to have the opportunity to share their work in a major international event entirely devoted to the field. This thematic issue is dedicated to the institutions, organizers, researchers and personnel who have made the eight editions of *New Sounds* possible:

1. *New Sounds* 1990 – University of Amsterdam, Netherlands (Allan James & Jonathan Leather)
2. *New Sounds* 1992 – University of Amsterdam, Netherlands (Allan James & Jonathan Leather)
3. *New Sounds* 1997 – University of Klagenfurt, Austria (Allan James & Jonathan Leather)
4. *New Sounds* 2000 – University of Amsterdam, Austria (Allan James & Jonathan Leather)
5. *New Sounds* 2007 – Federal University of Santa Catarina, Brazil (Barbara Baptista, Michael Watkins, & Andréia Rauber)
6. *New Sounds* 2010 – Adam Mickiewicz University, Poland (Katarzyna Dziubalska-Kołaczyk, Magdalena Wrembel, & Małgorzata Kul)
7. *New Sounds* 2013 – University of Montreal, Canada (Walcir Cardoso & Pavel Trofimovich)
8. *New Sounds* 2016 – Aarhus University, Denmark (Ocke-Schwen Bohn)

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