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Accent Management: Approaches, Evidence, and Outcomes

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Moderated by:
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Aceent Management
Approaches, Evidence, and Outcomes

Amy Neel, PhD, University of New Mexico
Alison Behrman, PhD, Lehman College/City University of New York

Course Objectives

After this course, participants will be able to:

- Describe major theories and evidence regarding accented speech and its management.
- Explain the relationship between intelligibility, ease of understanding, and accentedness.
- Describe appropriate diagnostic methods and treatment techniques to address the needs of clients with accented English.
Accentedness, Intelligibility, and Ease of Understanding, and Their Role in Treatment Planning

Amy Neel, PhD
University of New Mexico
What is accent?

- “…normal consequence of late second language acquisition.”
  - Flege, Munro, & McKay (1995)
- “… a set of dynamic segmental and suprasegmental habits that convey linguistic meaning along with social and situational affiliation.”
  - Moyer (2013)

Accented English arises from

- Differences in phonetic inventories
- Differences in phonotactic constraints
- Differences in phonological rules
- Differences in stress and rhythm
- Differences in intonation
Segmental differences

- Phonemes shared by English and Japanese
- Phonemes not present in Japanese

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Suprasegmental differences

Chinese tones

English intonation

Created in WASP (Mark Huckvale)

Perceptual measures (global)

- Accentedness
- Intelligibility
- Comprehensibility (ease of understanding)

Native/easy to comprehend = 0
Non-native/hard to comprehend = 100


Perceptual measures (specific)

- Rate
- Stress
- Intonation
- Articulation
Perceptual profile (48 speakers)

Individual profiles
Therapeutic Approaches to Accent Management
Alison Behrman, PhD, CCC-SLP
Lehman College/City University of New York

Segmental and Prosodic Targets
Accent Management
Contrastive analysis of L1 and L2

the speech accent archive


Phonemic Inventories Across Languages
http://www.asha.org/practice/multicultural/Phono/

Segmental Level - Consonants

Approaches to training segmental targets

- Articulation
- Phonological
  - Final consonant deletion
  - Cluster reduction
  - Epenthesis
- Diagnostically, what segmental level errors contribute the most to impaired communication?

Franklin and McDaniel (2016)
Segmental Level – Vowels

Acoustic cues of vowels:
- Formant frequencies
- Duration

Cue Weighting: relative importance of specific acoustic cues in phoneme perception

Kondaurova and Francis, 2008; Wang and Munro (1999); Williams and Escudero (2014)

Selecting segmental targets
- What impacts intelligibility the most?
- What bothers the client the most?
- Common nonnative errors may not impact listener understanding significantly
  - /ʊ/ /ɹ/
Prosodic Level

Three *main perceptual features* (and their acoustic correlates)

- Intonation (F0 variation)
- Timing (duration and pause)
- Loudness (intensity variation)

- Syllabic Stress
- Phrase Prominence
- Rhythm

Capitalize on the aspect of prosody that the client can most easily alter.
Prosodic targets must be contextually appropriate.

- Assign intent to the statement
  - Emotion
    - Say it with surprise, doubt, etc.
  - Emphasis
    - “I hear it’s pretty there.” “Yes, it’s really beautiful.”
  - Clarification
    - “The seminar is on Thursday, right?”
- Conversational practice

Session structure for segmental and prosodic targets

- Short explanation of each target
- Focused auditory stimulation
  - Auditory discrimination training
  - Production training
Perception–Production Controversy

1. Is perceptual knowledge a prerequisite for production?
2. To what extent does perceptual training carry over to production training?
3. To what extent is it possible for L2 speakers to learn new perceptual distinctions?

The Segmental Prosodic Divide

- Increased aspiration on release of plosive in stressed syllable
- Changes in VOT as a function of stress and intonational phrase location
What is the EVIDENCE FOR TREATMENT OUTCOMES?

Accent Management

Most evidence is based upon classroom ESL studies

- Barb (2005) 15 students
- Derwing and Rossiter (2003) 48 students
- Derwing et al. (1998) 3 classes of 16 students each
Comparative study of segmental and prosodic approaches

- Purpose: determine the effect of segmental and prosodic training
- Single case experimental design
- 4 adult L2 English/L1 Hindi talkers
- Remote delivery


Findings

- Both segmental and prosodic training resulted in decreased accentedness and increased ease of understanding.
- Segmental training did not appear to influence prosody, and vice versa.
- One type of training did not appear to have a stronger effect than the other.
Clear Speech

Accent Management

Clear Speech (Hyperarticulation)

Clear speech is a speaking style used to enhance intelligibility in adverse listening conditions.

- Speak clearly
- Overenunciate
- Talk to someone with a hearing loss
Effects of **clear speech**

- Rate: Decreased rate of articulation, increased vowel duration, and longer and more frequent pauses
- Increased acoustic vowel space area, extent of formant movements
- Increased intensity and consonant power
- Kinematics: larger and longer movements

(Ferguson & Kewley-Port, 2002; 2007; Ferguson et al. 2010; Ferguson & Quené, 2014; Pichon et al., 1986; Matthies et al., 2001; Smiljanić & Bradlow, 2005; Tasko & Greilick, 2010; Uchanski, et al., 1996)

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In monolingual speakers:

Increased intelligibility was achieved with the use of clear speech, when compared to conversational speech

- Background noise
- Listeners with Hearing impairment
- Speakers with Dysarthria

(Ferguson, 2004; Ferguson & Kewley-Port, 2002; 2007; Ferguson & Quené, 2014; Payton et al., 1994; Park et al., 2016; Uchanski et al., 1996)
Study of Clear Speech in Accent Management

- Purpose: determine the benefit of training clear speech in nonnative speakers
- Single case experimental design (SCED)
- 6 adult L2 English/L1 Spanish talkers
- 30 monolingual (American English) listeners


Also see: Rogers et al., 2010; Smiljanić & Bradlow, 2005)

Results

Comparing clear speech findings of this study to addressing segmental and prosodic difference (Behrman, 2014):

- Ease of Understanding: larger effect size obtained for clear speech
- Accentedness: smaller effect size obtained for clear speech
Why use clear speech if it doesn’t result in more native-sounding speech?

- In the workplace and other contexts, ease of understanding may be more important than accentedness to many listeners.

- Accentedness does not always predict intelligibility or ease of understanding.

(Behrman, 2014; Derwing & Munro, 2009; Smiljanić and Bradlow, 2011)

Using clear speech in accent management

- Clear speech may provide L2 speakers with the ability to code switch to achieve increased understanding.
- To obtain benefits, may require multiple session training in clear speech
- Outcome goals should be discussed carefully with accent management clients.
Clear Speech protocol overview

- Review home practice material
- Speech production practice
- Assign new home practice material

Clear speech protocol

- First session: gain buy-in on clear speech
- Initial elicitation with rote phrases
- SLP uses continual modeling
- Prompts
  - Regular = 100  Clear = 200
  - Use more effort to be clear / be more intentional with your speech/ work harder to be clear
Clear speech protocol

Sessions two through five:

- Decrease use of clear speech model
- Minimize reading
- Address prosody

Most common client errors

- Insufficient effort
- Rapid fall off at phrase endings
- Flattened prosodic contour
- Forgetting to use clear speech intermittently
Home practice of clear speech

- Twice each day, use high effort clear speech for 2 minutes while:
  - Reading aloud
  - Speaking aloud
- Use clear speech in actual conversation for 25% of total daily talking time
- Keep a daily log of experiences with clear speech

Take-home message

For increased communicative competence

- Focus upon accent reduction may not be the only or even the optimal approach
- Code-switching to clear speech may be appropriate
A few other helpful hints . . .

Accent Management

Increase client awareness of the communicative environment

Accented speech is more difficult to understand for listeners

• in noise
• with hearing loss
• who are older
• unfamiliar with the accent
• unfamiliar with the specific speaker
Uhm... decrease use of fillers

Replace fillers with a brief pause
- Pause at all punctuation
- Connect the pause to a quick catch-breath
- Exaggerate the pause at every period

Accent Management

*The long view*
Acoustic tools for biofeedback

- Non-invasive, inexpensive techniques for displaying speech behavior

Vowels

- Sonamatch (KayPentax)
- VowelViz
- Dr. Speech
Consonants

Amplitude spectrum for /r/ - low F3

Voice onset time differences for /t/ and /d/

Suprasegmentals

THIS tea is nice
Useful, free acoustic software

- WASP
- RTSpect
- AmPitch
- IMPROS

- Mark Huckvale, University College London

Q&A
References


References


