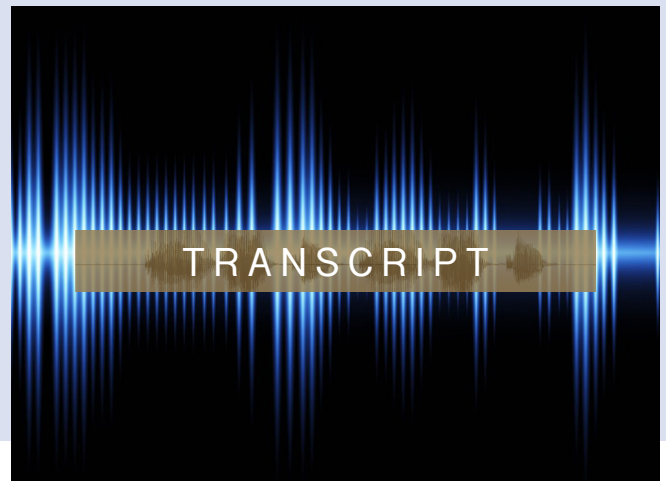


Allophonic Variations in English

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- 1** 00:00 —
00:35

Dr. Victoria McKenna, Ph.D., CCC-SLP: Welcome to Culturally Inclusive Education for the Speech Sciences. My name is Dr. Victoria McKenna, and I am a speech-language pathologist and assistant professor in the Department of Communication Sciences and Disorders at the University of Cincinnati. This presentation was created in collaboration with Amber Meadows-Yusko, a speech-language pathologist and associate professor in the same department at UC. Today, I am going to be discussing allophonic variations in English and clinical considerations during treatment of individuals seeking accent modification.
- 2** 00:36 —
00:51

This module series is funded by the Advancing Academic-Research Careers award from the American Speech-Language-Hearing Association, or ASHA, as well as the College of Allied Health Sciences at the University of Cincinnati.
- 3** 00:37 —
01:25

“Here is a brief outline of this presentation. First, I am going to introduce allophones and provide some examples in American English. Then I will discuss some cross-language considerations. Next, with the collaboration of Amber Meadows-Yusko, I will provide information on accent modification, a treatment provided by speech-language pathologists. I will describe how we use our knowledge of allophones and phonemic inventories to improve speech intelligibility and quality of life for non-native English speakers.”
- 4** 01:26 —
01:51

This module series assumes that you have some pre-requisite knowledge. First, we expect that you are knowledgeable about speech articulators and the vocal tract. Second, we expect you to understand the place of articulation for different speech sounds. And third, we expect a basic knowledge of phonemes, the International Phonetic Alphabet, also referred to as IPA, and diacritics.
- 5** 01:52 —
01:56

So to begin: what is an allophone?
- 6** 01:57 —
03:10

Dr. Victoria McKenna, Ph.D., CCC-SLP: Allophones are variations in the production of a single phoneme that do not create a contrast. That is, variations in productions do not result in the listener perceiving the sound as two separate phonemes. Rather, the listener perceives two different productions in the same phonemic category. It is important to note that allophonic variations for a phoneme are often missed during broad transcription. Broad transcription, often referred to as phonemic transcription, includes that target phonemes placed between two slash marks. Conversely, narrow transcription, placed between two brackets, often includes more information about the pronunciation of how the sound was said. Narrow transcription often includes diacritics, or additional markers, to help us to describe the sound in more detail. Here is an example on the right with the word “cool.” The broad transcription on the top includes just three phonemes. The narrow transcription on the bottom includes the same three phonemes but also includes a diacritic after the “k” or /k/ sound. The diacritic tells us that the /k/ was produced with aspiration noise.
- 7** 03:11 —
03:56

Why do allophones exist? That is, why is there variation within our language? We know that phonemes are not produced in isolation, but rather, that they are strung together to create linguistic meaning. When produced in a sequence, phonemes are influenced by the sounds around them. For example, vowels produced near nasal sounds often also have a nasal quality. This can be referred to as coarticulation and is very common. Another reason for variation, is because English is a rule-based language in which phonemes vary based on where they are placed within a word. For example, a “t” or /t/ sound at the beginning of a word can have qualitative differences than the /t/ sound at the end of a word.
- 8** 03:57 —
04:30

Here we have the example of the /t/ phoneme, which we can see in our broad transcription slashes. The /t/ phoneme is a voiceless, stop consonant produced at the alveolar ridge with the tip of the tongue. The /t/ sound in “tip” vs. “hut” vs. “little” are produced in three different ways; however, they still fall into the phonemic category of “t” or /t/ for speakers of standard American English. So let’s take a look at each of these productions and discuss how they are different.

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05:38

Dr. Victoria McKenna, Ph.D., CCC-SLP (cont.): In the word “tip,” the /t/ sound is produced with aspiration because it is found at the beginning of the word. This means that extra turbulent air, or a hissing like sound, can be heard following the release of the tongue from the alveolar ridge. Like this: “thhhh.” The narrow transcription includes the /t/ phoneme along with the small “h” diacritic.

Conversely in the word “hut,” the /t/ sound is found in the final position. In American English, final plosives are usually unaspirated. That is, there is no release or burst of air. To indicate that this sound is unreleased, we use a different diacritic, which can be seen on the right.

Finally, the /t/ in the word little, becomes what we call an alveolar tap (sometimes called alveolar flap) because of its placement between two vowels. In this case, there is no build-up of air pressure because the tongue is only lightly tapping on the alveolar ridge. An alveolar tap has a completely different symbol in IPA and does not use a diacritic at all.

10 05:39 —
06:25

Let’s take a look at the acoustic signal and spectrogram for each word. On the left we have the word “tip.” Remember, this /t/ sound is created with aspiration and is seen highlighted in the pink here. The aspiration noise is characterized by a prolonged, aperiodic segment that corresponds to mid-to-high-range frequency noise in the spectrogram. In the middle example, we have the word “hut.” You will notice that the highlighted segment is much shorter than what we saw in “tip.” This segment is unreleased, and does not have a burst of aperiodic, hissing noise. Finally, we have the word “little.” The alveolar tap does not exhibit any aspiration noise because there is no build up or release of air in this case.

11 06:26 —
07:27

Other languages also have allophones that may not be allophones in English. For example, Spanish is a language that does not distinguish between the “b” or b/ and “v” v/ phonemes. Rather, these can be interchangeable in some cases. For American English speakers, this is not the case, as these two separate sounds change the meaning for the word. Like in the example of “vat” vs. “bat.”

On the other hand, some allophones that are found in American English are not allophones in other languages. We just discussed an example of how aspiration can vary for a phoneme based on its word placement in American English, but that sound is still perceived in the same phonemic category. This is not the case for some dialects of Hindi, in which aspiration actually changes the meaning of the word. Therefore, it is important to remember that allophones exist across languages, but are not always the same as American English.

12 07:28 —
08:04

We can use our knowledge of allophones and phonemic inventories specific to each language to assist individuals who want to learn the American English accent. Although English is the first language of many people in the United States, there are also many bilingual speakers and speakers who learned English as a second language. For second-language learners, there can be sound productions in their native language that we perceive as similar enough to the phonemes and allophones of American English. These can be acceptable substitutions for American English phonemes, and help to improve the speaker’s intelligibility.

13 08:05 —
09:20

One example of a sound substitution, or acceptable variation in a sound that would not change the meaning of the word, can be found in the different ways that individuals produce the “r” sound. Even within American English, the “r” sound is an allophone, in which there are a few ways to produce it. One way, is to bunch the tongue backwards while keeping the tongue tip low, and another way is to bunch the tongue backwards but to elevate the tongue tip. This second way is usually called retroflexion and is an acceptable variation of way to produce the “r” sound is produced.

In addition to these allophonic variants, there are similar “r” sounds in other languages that could be substituted for the American English “r,” such as the trilled “r.” Let’s listen to a speaker using the American English “r” and then a trilled “r” from Spanish.

Natie Spanish Speaker: “Red, red.”

Dr. Victoria McKenna Ph.D., CCC-SLP: As you can hear, the trilled “r” does not impact our ability to understand the word. As such, substitutions of similar sounds can be a strategy that second-language speakers use when learning a new language.

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09:36

Dr. Victoria McKenna, Ph.D., CCC-SLP (cont.): The next section of this presentation was created in collaboration with Amber Meadows-Yusko, clinical faculty at UC. It will delve deeper into accent modification for individuals who are non-native speakers of American English.

15 09:37 —
10:06

ASHA defines accent modification as *“An elective service that is sought out by individuals who want to change or modify their speech”* or the way that they sound. These individuals *“represent various unique cultural and linguistic backgrounds and experiences.”* These cultural and linguistic backgrounds and differences are something that we need to consider throughout the entire course of therapy, from the start of the evaluation all the way to discharge.

16 10:07 —
11:56

There are many reasons why someone may want accent modification therapy. First, individuals may want to improve personal relationships. These could be romantic, platonic, family, or something else like making friends or communicating with colleagues at work. Many people spend the majority of their time at work or at school, and if they aren't comfortable with communication, it may impact their willingness to go out and seek these relationships and these connections. One therapy technique is called scripting where we would work through the speech and communication needed when meeting people for the first time. This can be helpful to many clients.

A second reason someone may request therapy is due to acquisition of a new job or promotion to a new position. One individual who pursued services at UC started coming to therapy due to her communication at work. She was going up for promotion and she said she wanted, quote, *“the best opportunity to get the promotion over somebody else,”* end quote.

A third reason is social. Sometimes, people may not feel comfortable or do not have the confidence to communicate in different settings, which could lead to them feeling socially isolated. Being socially connected is a huge part of our lives.

Together, personal, work, and social areas all impact quality of life. A client's quality of life should be at the forefront of our plan of care for them. You should ask the question: *“How do you perceive your accent is affecting your life?”* Or you may ask, *“In what settings is your life being affected?”* The answers to questions will help your therapy plan to be patient driven. Remember, receiving feedback and input throughout the entire therapy process is important to achieving your client's goals.

So, the big question is, should someone be required to modify their accent? Accent modification has been criticized because it perpetuates the idea that some accents are wrong, and that the person needs to assimilate into mainstream speaking. As a future clinician, or someone involved in this field, how can you help overcome this problem and stigma?

Well, one way you can help is through education and counseling. When you first meet your client, you should conduct interviewing to find out why they are pursuing accent modification services. Clients should be there because they want to modify their speech, not because it is being forced upon them. You can use the interview as an opportunity to educate on speech differences and that just because it may be different, does not mean that it is disordered or that it is wrong in any way. Ask questions like: *“Why are you coming in for this evaluation?”* Or, *“How can I help you in this specific setting or way?”* It should be made clear that accent modification is considered an elective intervention and thus, should not be considered mandatory for anyone.

Once you have established rapport and understanding with your client, you can delve deeper into their needs. Perhaps they would like to improve the use of jargon at their job, or maybe they want to improve their intelligibility when speaking on the telephone. You can write goals that specifically target these areas.

Finally, you may want to consider group therapy as an option. This can be especially helpful for clients seeking to improve relationships because they can converse with multiple people and increase confidence.

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18 13:36 —
14:42

Dr. Victoria McKenna, Ph.D., CCC-SLP (cont.): Accent modification therapy can also directly address allophones to increase speech intelligibility. It is important to research your clients first, or native language, and what phonemes may be different from American English.

We have one example here, which is Farsi. Farsi does not have the same contrasts for voiced and voiceless plosives as speakers of American English. Let's listen to some examples of minimal pairs on the left side of the slide. Try to listen to how similar or different the words sound. Do you think there is enough contrast? Might you confuse these words?

Multilingual Farsi Speaker: Pat, bat, tan, dan, coat, goat.

Dr. Victoria McKenna Ph.D., CCC-SLP: In this example, the speaker does not include aspiration noise during the initial plosive. This can make "p, t, and k" or /p, t and k/ phonemes sound more like "b, d, and g" or /b, d, and g/. You may target initial plosive aspiration as one way to modify her accent.

19 14:43 —
15:48

Here we have an example of an evaluation completed by Amber Meadows-Yusko that documents different consonant sounds across different speech positions. The numbers you see here are their accuracy in being produced as compared to a native American English speaker. As you can see, some columns have 100% proficiency, whereas others are as low as 0%. In this particular case, this client was a native Turkish speaker, who has speech characteristics like a trilled "r" production and differences in vowel sounds.

In addition to documenting differences in speech production, it is also critical to assess their ability to perceive phonemes in American English. You should assess whether they can hear differences in the sounds that are in error, or differences in allophones, or distinguish between a trilled "r" and a non-trilled "r" sound. Testing auditory perception is important because hearing the difference is important to being able to produce the difference.

On this slide we have some examples of four different goals you may see in accent modification therapy. These are not from the same clients, nor are they from speakers of the same language, but are just here as examples for you to consider when thinking about targeted treatment. The first goal is specific to multisyllabic word production and uses all levels of production, from words to sentences to conversational speech. This type of goal would be for a very advanced client. The second goal focuses on speech sounds that may have lower accuracy in the initial evaluation of the client's phonemic inventory. The third goal focuses on intonation and stress, which are prosodic elements of speech and language and improve the naturalness of the speaker. And finally, the fourth goal is written for epenthesis. This is when an extra sound or syllable is added to a word. For example, the word "blue" may be said as "buh-lue" or "spoon" may be pronounced as "eh-spoon," depending on the speaker. Epenthesis happens because of the phonotactic rules governing their native languages and can be worked on in therapy.

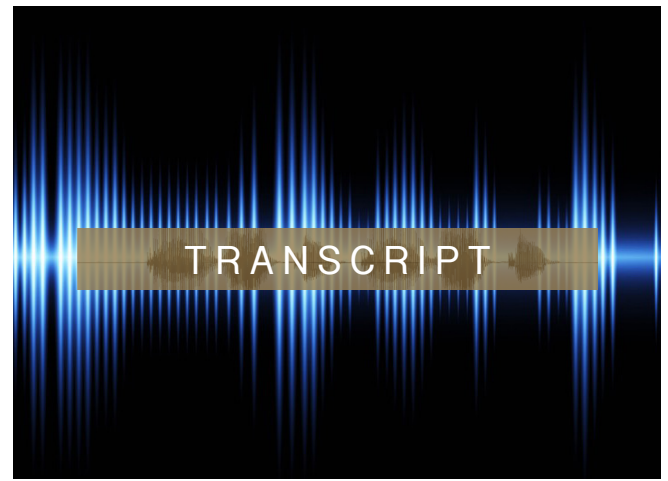
20 15:49 —
17:03

Here are a couple resources Amber Meadows-Yusko uses and recommends as part of the SLP toolkit. Mastering the American Accent helps to break down phonemic inventories of different languages. Pronouncing American English delves into intonation and stress patterns, as well as different phonemic sounds with an emphasis on articulatory movements. This may be especially helpful to new clinicians. And then, Mastering the Vowel System of American English is a helpful tool because it focuses in on vowel sounds which can vary across languages.

21 17:04 —
17:40

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18:18

Dr. Victoria McKenna, Ph.D., CCC-SLP (cont.): In the next few slides, we have examples and quotes from clients of Amber Meadows-Yusko. In this example, this person was a native speaker of Turkish and had accent modification therapy. As you can read here, the client lacked the ability to communicate effectively. They worked on slowing down and speaking clearly, which resulted in the client saying they are now not asked to repeat themselves as often. Importantly, they saw improvement in their quality of life when they say: *“I don’t hear anyone saying ‘excuse me’ which is a huge relief and boosts my self-confidence.”*

23 18:19 —
18:46

This client describes the reason they pursued accent modification, stating that it was rooted in their profession as a teacher. The client received course evaluation feedback that they were very knowledgeable in the subject area and good at teaching course content, but were receiving feedback that their accent was impacting the students’ understanding during class. The client felt that this was impacting her career and took it upon herself to modify her accent.

24 18:47 —
19:30

In this last example, the client was being approached to take a leadership position and were looking to improve their communication effectiveness and boost self-confidence. They reported that they increased their confidence, improved communication and intelligibility, and felt more comfortable being spontaneous in their communication with others.

This client also enjoyed sharing information about their culture and the clinician was able to incorporate those topics into their therapy activities. That way, they were able to practice communicating about a topic that was important to them. Further, the client also learned more about American cultures throughout therapy, and reported that it helped them to relate to others in casual conversation.

25 19:31 —
20:07

In summary, accent modification is an elective speech therapy service that can help clients improve quality of life. Often, people want therapy to improve their personal lives, professional lives, and social relationships. As a speech-language pathologist, having knowledge of phonemic inventories and allophonic variants across different languages can help you target sounds to improve intelligibility. However, no one should feel forced to modify their accent. Speakers of any language or dialect have an accent, and no language or accent should be considered superior to another.

26 20:08 —
20:16

Please find a list of references used in today’s presentation.