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Unit 2: Sounds

Aim

The aim of this unit is to explore the relationship between sounds and texts, to introduce the concepts of phonetics and phonology, and to apply some skills in phonetics and phonology to a selection of texts.

Why learn about phonetics?

A text is a piece of language written down, so why in a book about texts, might we be interested in knowing about sound? Sounds, after all, form the basis of speech, but they do not form the basis of writing. However, there is a relationship between spoken and written language: writing can be seen as a representation of the spoken language. You might also encounter texts which use symbols designed specifically to represent the sounds of language, the symbols of the International Phonetic Alphabet (IPA).

So the spelling system that we use every day to read and write is a representation of the sounds that we use in language. However, there is not a one to one relationship between the letters that we use to write our language down and the sounds that we make. Although it is a bit of a simplification, there are 44 sounds in English and yet there are only 26 letters that we can use to represent them. It is immediately obvious that 26 letters can't individually represent 44 sounds – there simply are not enough letters in the alphabet for that. However, that's not to say that we can't use combinations of more than one letter to represent a particular sound. This happens in English (mostly!), but the reality is that the history of English means that we have ended up with a huge vocabulary containing words that come from lots of other languages. Without going into the history of spelling and all its complexities, here is a rather extreme example of the mismatch between sound and spelling in English:

A rough-coated, dough-faced, thoughtful ploughman strode through the streets of Scarborough; after falling into a slough, he coughed and hiccupped.

If we compare the pronunciation of all of the sounds that are represented by the string of letters 'ough' here, we find that they are not the same; they don't rhyme. Even if we just look at the first 4, they're all different.

rough
dough
thoughtful
ploughman

Activity

Look at the combinations of letters below and decide what sounds they represent. Are they consistent, or can you think of any examples where they represent another sound?

ch
th
ci

Commentary

Note: Angled brackets like this < > can be used around letters of the alphabet. This helps to distinguish the way words are spelled from the phonetic alphabet which will be introduced later.

<ch> can be pronounced as in 'cheap' and 'beach', but it is pronounced differently in 'machismo' and differently again in 'machine'. <th> can be pronounced as in 'the' and 'breathe', but also differently in 'teeth' and 'thimble'. <ci> can be pronounced as in pencil and cinema, but also differently in delicious.

As you can see, looking at spelling is not a reliable guide for pronunciation, and that is before we even begin to take into account the differences between speakers. It is also rather clumsy trying to describe these sound differences without using the special symbols that are used for representing the sounds of English, or the terminology that we use to describe sound. For example, it would be difficult to represent children's pronunciation or a regional pronunciation accurately on paper without using something other than conventional spelling.

Received Pronunciation

Received Pronunciation (R.P.) is the name of an accent that some speakers of English have. Unlike regional accents, which people speak as a result of what geographical area they are from, R.P. can be spoken by people from any area. Traditionally, R.P. was spoken by broadcasters, and as a result it is sometimes called 'BBC English', although nowadays television and radio broadcasters might speak with a regional accent. If someone is speaking R.P., it is more likely to tell you something about their education or social class rather than where they are from. People often say that someone speaking R.P. 'has no accent' meaning that they don't have a *regional* accent. Linguists would say that everyone speaks with an accent, but that some accents do not give clues about regional origin.

The sounds of R.P.

In the introduction it was mentioned that there are 44 sounds in English. More specifically this is the number of sounds that it is generally accepted are found in R.P.. Each of the words below has been chosen to illustrate one of the 44 sounds.

The function of the IPA symbols used is specifically to represent sound. You will probably have seen some of these symbols before in a dictionary, where they are used to show the standard pronunciation of entries.

The symbols used in the IPA have a much closer relationship to the sounds of speech than spelling does, but it is still important to remember that they are not the sounds themselves; they are a way of representing them. Each symbol has an arbitrary relationship with the sound that it represents. That means that there is no real connection between the sound and the symbol except that we all agree that the symbol *ʃ* represents the sound that we make at the beginning of the word 'ship' and so on.

In the words below, the symbol represents the sounds that has been underlined in the word next to it.

/ɪ/	as in K <u>I</u> T	/p/	as in <u>P</u> OT
/e/	as in D <u>R</u> ESS	/b/	as in <u>B</u> ED
/a/	as in TR <u>A</u> P	/t/	as in <u>T</u> IP
/ɒ/	as in L <u>O</u> T	/d/	as in <u>D</u> ID
/ʌ/	as in STR <u>U</u> T	/k/	as in <u>C</u> OD
/ʊ/	as in F <u>O</u> OT	/g/	as in <u>G</u> AP
/ɑ/	as in P <u>A</u> LM	/m/	as in <u>M</u> AN
/ɜ/	as in N <u>U</u> RSE	/n/	as in <u>N</u> EAT
/i/	as in F <u>L</u> EE <u>C</u> E	/ŋ/	as in K <u>I</u> NG
/ɔ/	as in TH <u>O</u> UGHT	/l/	as in <u>L</u> OOP
/u/	as in G <u>O</u> OSE	/r/	as in <u>R</u> IP
/ə/	as in L <u>E</u> TT <u>E</u> R	/f/	as in <u>F</u> IT
/eɪ/	as in F <u>A</u> C <u>E</u>	/v/	as in <u>V</u> AT
/əʊ/	as in G <u>O</u> AT	/θ/	as in <u>T</u> H <u>A</u> NK
/aɪ/	as in P <u>R</u> I <u>C</u> E	/ð/	as in <u>T</u> H <u>I</u> S
/ɔɪ/	as in CH <u>O</u> I <u>C</u> E	/s/	as in <u>S</u> EA
/aʊ/	as in M <u>O</u> U <u>T</u> H	/z/	as in <u>Z</u> OO
/ɪə/	as in N <u>E</u> AR	/ʃ/	as in <u>S</u> H <u>E</u> E <u>P</u>
/ɛə/	as in SQU <u>A</u> R <u>E</u>	/ʒ/	as in B <u>E</u> I <u>G</u> E
/ʊə/	as in C <u>U</u> R <u>E</u>	/h/	as in <u>H</u> IP
		/tʃ/	as in <u>C</u> H <u>I</u> P
		/dʒ/	as in <u>G</u> IN
		/w/	as in <u>W</u> OOD
		/j/	as in <u>Y</u> ES

Standard lexical sets, Wells (1982)

IPA transcriptions appear in either slashed brackets / / or square brackets [].

The choice of brackets is significant, and will be explained later in the unit.

Activity

Answers and commentary at the back of the unit.

The following words (pronounced with an R.P. accent) have been transcribed using the IPA symbols listed above. Try to work out what the words are.

/θɪsl/ /bəʊt/ /kaʊtʃ/ /kjʊəriəs/ /reɪst/

Transcribe the following words using the IPA symbols (try to transcribe the words as they would sound in R.P.).

Rhubarb

Three

Sugar

Sloping

Door

Custard

Yellow

Noisy

Extensive

The following text is a transcription of a speaker from Huddersfield telling a story about buying a television stand from a high street retailer. The transcription uses 3 types of transcription: conventional spellings; representations of the accent using the Roman alphabet, or 'eye dialect'; and some examples of IPA transcription.

Activity

Concentrating on the IPA transcriptions, try to pick out as many features of this accent that are different from R.P. as possible, and explain how they are different from R.P..

Text: 2:1

when we went for t' table you know .hh Currys and Dixons are t' same
firm aren't [ðe] .hh and we ad us Dixon [buk] with us (0.8) and we went
for t'table .hh an uh (2.0) we looked at it in t' Dixon [buk] (0.8)
and wo- worrit either ten or twenty pound cheaper in t'Dixon [buk]
than what it were in Currys uh they were chargin anyway we tell them
and we showed it 'em .hhh an he says oh we shall ave to match that
price then so we gorri- t at Dixon pri he ce eh heh .hh I says ooh I
don't know if that were cheekeh .hh cos I says look .hh I says lets
get- (.) lets geddit paid fer an never mi:nd she says we're not payin
more when we can geddit cheaper at Dixons (0.5) an uh (0.5) so: (.) e
says o:h we shall ave to match it then I don't know what- what
t'difference is and e [tuk] us [buk] with im went somewhere to

[lʊk] .hh whether we went on t'website to look or what (0.8) o:h do they o:h well this were us table (1.0) an uh (0.3) anyway we goddit cheaper (.) well d-Dixons' price (1.0) we were avin black [glas] at first and then s- (.) it'll show all t' [dʌst ʌp] (0.5) black [glas]

Commentary

The IPA transcriptions show vowel differences between this accent and R.P.. The first difference is in the word 'they' where this speaker pronounces /eɪ/ as [e] as in DRESS. There are no other examples of this in the transcription, so we assume that 'paying' is pronounced with the FACE vowel, /eɪ/. In 'book', the /ʊ/ as in FOOT is pronounced [u] as in GOOSE. The speaker does this each time she says 'book', so it appears to be a consistent feature in this word, but we can see that the speaker still pronounces the FOOT vowel in words like 'look' and 'took'. However, the speaker uses /ʊ/ as in FOOT in 'took' and 'look' as R.P. would.

Notice that the speaker also uses the FOOT vowel [ʊ] where R.P. would have the STRUT vowel, /ʌ/ in 'dust'. Northern English accents are well known to not use the STRUT vowel, and stereotypical representations of them often rely on this to characterise them. Finally, where R.P. would use the PALM vowel /ɑ/ in 'glass', the transcript indicates the use of the TRAP vowel, [a].

Eye dialect

In the previous activity, the transcription contained some representations of speech using unconventional spellings. This technique is called 'eye dialect'.

Activity

Below, is a different representation of the Huddersfield text you looked at before. This time eye-dialect only is used to represent regional speech. Try to identify aspects of speech that are being represented using the unconventional spellings and explain what features you think they are intended to represent.

Text: 2:2

when we went for t' table you know .hh Currys and Dixons are t' same firm aren't they .hh and we ad us Dixon book with us (0.8) and we went for t'table .hh an uh (2.0) we looked at it in t' Dixon book (0.8) and wo- worrit either ten or twenty pound cheaper in t'Dixon

book than what it were in Currys uh they were chargin anyway we tell them and we showed it 'em .hhh an he says oh we shall ave to match that price then so we gorri- t at Dixon pri he ce eh heh .hh I says ooh I don't know if that were cheekeh .hh cos I says look .hh I says lets get- (.) lets geddit paid fer an never mi:nd she says we're not payin more when we can geddit cheaper at Dixons (0.5) an uh (0.5) so: (.) e says o:h we shall ave to match it then I don't know what- what t'difference is and e took us book with im went somewhere to look .hh whether we went on t'website to look or what (0.8) o:h do they o:h well this were us table (1.0) an uh (0.3) anyway we goddit cheaper (.) well d-Dixons' price (1.0) we were avin black glass at first and then s- (.) it'll show all t' doost oop (0.5) black glass

Commentary

t'table

t'same firm

show all t'doost oop

These examples all represent the use of a **glottal stop** as a pronunciation of the word 'the' (a definite determiner) by using the letter <t> with an apostrophe. Conventional punctuation uses an apostrophe to indicate that a letter or string of letters is missing – for example, the way that 'telephone' is sometimes written as 'phone, or 'refrigerator' as 'fridge. Do writers use this convention because they see the northern pronunciation of 'the' as missing some sounds? This is interesting because if we revert to IPA representations, we can see that the R.P. pronunciation /ðə/ and the Huddersfield speaker's pronunciation [ʔ] are completely different. It is not that one sound has been missed and another retained, but we have no clear way of representing this accurately without using the IPA. A further interesting issue is the way that this eye-dialect representation of northern speech seems to have had the effect of making some people doing impressions of a stereotypical Yorkshire accent use a [t] sound to represent 'the' rather than [ʔ].

ad us Dixon book

we shall ave to match it

e took us book with im

The examples above are quite straightforward in that they imply that initial /h/ sounds have been elided, as the <h> has been missed off the spelling. This representation is easily achieved as the /h/ sound is consistently represented as <h> in English spelling.

Other examples of eye dialect in the text include:

worrit either ten or twenty pound cheaper

cheekeh

geddit cheaper

we goddit cheaper

they were chargin

we're not payin more

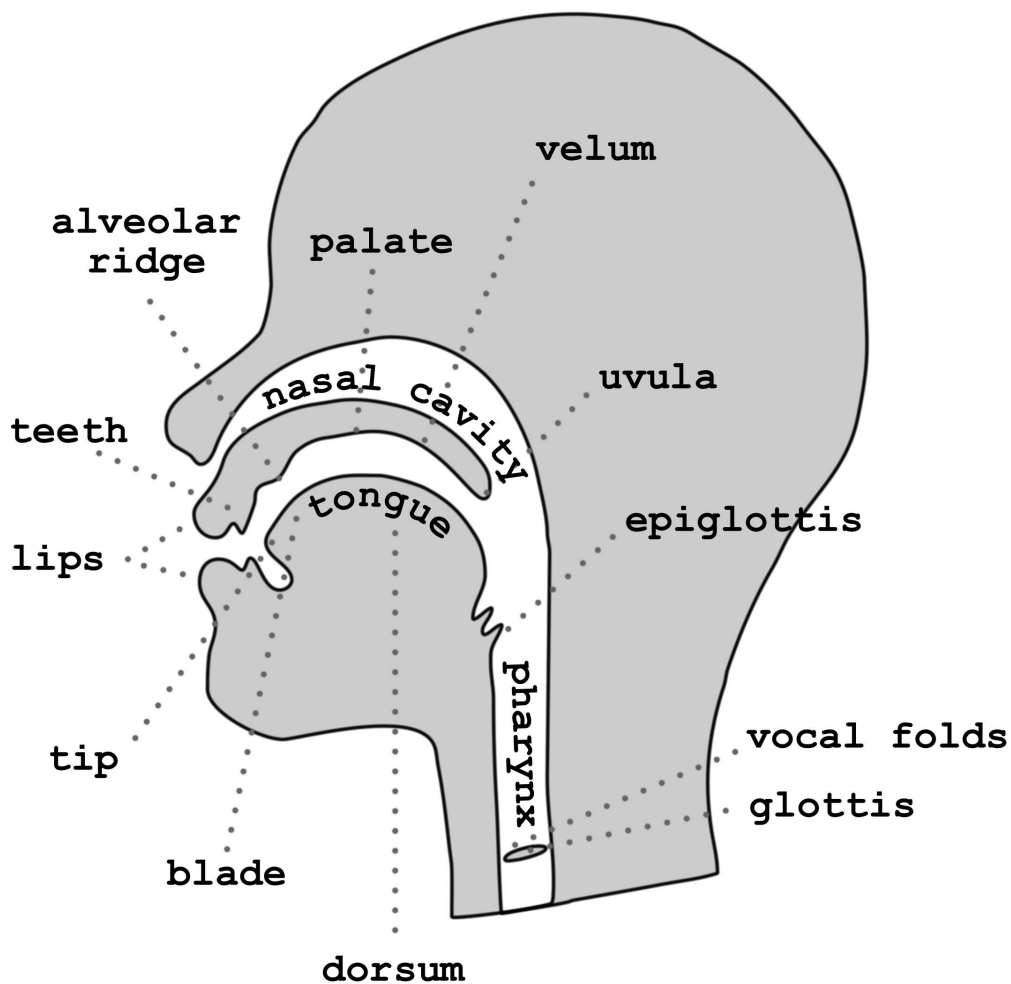
show all t'doost oop

Eye dialect is a useful technique in literature, in that it can express features of spoken language on the page, to some extent. Most readers of fiction don't need any more than an indication of pronunciation. However, the IPA offers a more reliable and accurate way of representing speech in writing appropriate for language analysis.

The vocal tract

Speech sounds are produced in the vocal tract, using air pushed out from the lungs. Different speech sounds are made by changing the shape of the vocal tract. This can be done by moving the lips and tongue to touch different parts of the vocal tract (place of articulation). Sounds can be further modified by placing the articulators different distances from one another (manner of articulation). We can make an even wider variety of sounds in our vocal tracts by vibrating the vocal folds (voiced sounds) or not vibrating them (voiceless sounds).

The Vocal Tract



The articulators are the parts of the vocal tract that are important for speech. Some of the articulators can move (active articulators), such as the tongue and the lips, while others remain still (passive articulators), such as the roof of the mouth. The place of articulation is named after the articulators involved in making the sound. Where one of the articulators is passive, the place of articulation is named after the passive articulator. For example, sounds that are made using the back of the tongue and the velum (for example, [k] and [g]) are called velar sounds.

The following table organises the R.P. consonants by place and manner of articulation.

Manner of articulation	Place of articulation							
	Bilabial	Labio-dental	Dental	Alveolar	Post-alveolar	Palatal	Velar	Glottal
	Plosive	p b		t d			k g	
	Nasal	m		n			ŋ	
	Fricative		f v	θ ð	s z	ʃ ʒ		h
	Affricate				tʃ dʒ			
	Approximant	w			r	j		
	Lateral approximant			l				

*The voiced sounds are on the right and the voiceless ones are on the left.

Manner of articulation (how close are the articulators?)

Plosives: /p, b, t, d, k, g/

These sounds are characterised by having the two articulators touching one another – for example the lips touch one another in the sounds /p/ and /b/. Air builds up behind the closed articulators and comes out in a burst.

Nasals: /m, n, ŋ/

These are very similar to plosives in that the articulators are touching, but the air is allowed to escape through the nose.

Fricatives: /f, v, θ, ð, s, z, ʃ, ʒ, h/

These sounds have the articulators almost touching but not quite. The air is allowed to squeeze out of a little space, becoming turbulent, which causes it to make a hissing or buzzing noise .

Affricates: /tʃ, dʒ/

This is an articulation that starts as a plosive and ends as a fricative.

/tʃ/ and /dʒ/ are the only affricates in English.

Approximants: /w, r, j/

These sounds are not quite so easy to describe. The feature that ties these sounds together is that the air is allowed to flow past the articulators without becoming turbulent. The articulators are usually wider apart than for a fricative.

Lateral approximants: /l/

Lateral sounds are characterised by having the air flow down one or both sides of the tongue. In English we have only one of these.

Place of articulation (where are the articulators touching / close to touching?)

Most places of articulation involve the tongue moving towards a static part of the vocal tract, e.g. the teeth or the alveolar ridge. The place of articulation takes its name from the articulator that stays still with the exception of the bilabial and glottal sounds. In these cases, both of the articulators are active – they move towards one another. Which part of the tongue makes contact or near contact with the place of articulation depends on how far back in the vocal tract it is. Places of articulation towards the front of the vocal tract, for example, dental (teeth) and alveolar, tend to involve the tip or blade of the tongue, while places of articulation further back (e.g. velar) involve the back of the tongue. Have a look at the vocal tract diagram to check the names of these different places of articulation.

Voicing (are the vocal folds vibrating?)

Languages have a tendency to have sounds in voiced and voiceless pairs to make most use of a particular articulation. If you have to learn to make an articulation, it seems sensible to make two distinct sounds using that articulation if possible, for example, /s/ and /z/ are identical except for the fact that for /z/ the vocal folds are vibrating. Try making a /s/ and a /z/ out loud. Notice how your tongue stays in the same place (almost touching the alveolar ridge) but when you make a /z/ you can feel a buzzing in your throat? Gently rest the tips of your fingers on your larynx (commonly known as the 'Adam's Apple') and feel how the buzzing starts and stops as you switch from a /s/ sound to a /z/ sound. The larynx is made of bits of cartilage which protect your vibrating vocal folds. You use your muscles to open them up which gives a voiceless sound, or close them, which results in a voiced sound.

Activity

There is no commentary for this activity.

Each of the following groups of sounds have something in common. What is it? You'll need to look at the grid of symbols above to help you. The first one has been done for you.

/s, v, θ/ These sounds are all fricatives

/t, d, n/

/m, b, p/

/s, f, t, ʃ, h/

PHONOLOGY AND PHONETICS

Phonology

Phonology is the study of sounds within a particular language and how those sounds function within that language. So, for example, we have seen that English has 44 sounds. All English words consist of combinations of those 44 sounds. Hawaiian, on the other hand, has only 13, so all their words are made up of combinations of those 13 sounds. Further phonological observations might include how the 44 sounds of English can combine together to make words. How many consonants can we have at the start of a word? In English, there are a maximum of 3 consonant sounds together (two or more consonant sounds together are called a consonant cluster) before the vowel. How many consonants can we have at the end of a word? Are there certain consonants that can go at the beginnings of words but not at the ends and vice versa? These are all phonological issues.

Activity

Come up with 3 examples of English words that have:

1 consonant sound at the start of the word (e.g. pot)

2 consonant sounds at the start of the word (e.g. tread)

3 consonant sounds at the start of the word (e.g. spring)

Be careful to include words that have 3 consonants in the pronunciation rather than the spelling – e.g. ‘through’ has 3 consonant letters, <thr>, but only 2 consonant sounds before we get to the vowel, /θr/.

What do you notice about the words that have 3 consonant sounds at the start?

Commentary

A phonological constraint on English words is that when there are 3 consonants at the start, the first one is always /s/. In your list of words with three consonant sounds at the beginning, all of them will start with a /s/. There are other constraints on the way that words are formed in a language, such as how many consonants you can have at the end of a word. Four consonants at the end of a word is the maximum that you will find in English, for example, as in <twelfths> /twelfθs/. Notice that there are four sounds, or phonemes, but five letters in the spelling of the consonant cluster. The constraints on the way that a language pronounces its words are particularly interesting when you consider what happens to words when they are borrowed from another language. In Japan, the U.S. sport baseball is very popular and some of the words associated with the game have been adopted into Japanese. Most Japanese words have the structure of a consonant (C) followed by a vowel (V) – this structure of CV can be repeated, so words will be CVCV or CVCVCV and so on. Therefore the Japanese pronunciation of the English baseball related word <strike> is /suturaiku/. An /u/ vowel is inserted between the consonants /s,t/ and /r/ to make the word more like a Japanese one, and an /u/ vowel is added to the end, so the structure ends up as CVCVCVCV. This phonological process of inserting vowels to separate consonants is a type of phonological process called **epenthesis**.

Phonetics

Phonetics is useful for looking at the detail of how sounds are pronounced. For example, at a general level, what we might think of as the sound 't' can be produced in a number of ways. Perhaps the two most obvious ways are with what we think of as a normal 't' sound, [t], and a glottal stop, [ʔ]* (ignoring for the moment that these two pronunciations may be considered by some people to have different social status).

The glottal stop is not listed as one of the English sounds above, because it is an alternative pronunciation of the sound /t/ rather than a phoneme in its own right. What we have so far been calling a 'sound' must be able to bring about a change of meaning in a word. If we look at the two alternative pronunciations of 'bitter', we have [bɪtə] and [bɪʔə]. We have, it might at first seem, replaced one of the sounds /t/ with another, [ʔ], but yet we still understand the word to mean the same thing (sour tasting), whether the word is pronounced with [t] or [ʔ]. Therefore [ʔ] is considered to be an alternative pronunciation of the sound /t/ rather than a sound in its own right. In the same way, [t] is considered to be a pronunciation of the sound /t/ as well.

However, if we replace the /t/ with a /g/ as in 'bigger' /bɪgə/, we recognise that the meaning of the word has changed.

Two words which are different by only one sound are called a **minimal pair**. So [bɪgə] and [bɪtə] are a minimal pair.

What we have so far been calling 'sounds' are known as 'phonemes' and what we have called 'pronunciations' are known as 'allophones'. Phonemes are transcribed using slashed brackets, / / and allophones are transcribed using square ones [].

* A glottal stop, [ʔ], is often represented as an apostrophe in literature, e.g. bu'er for 'butter'.

Activity

The commentary for this activity can be found at the back of the unit.

Transcribe the following pairs of words using the IPA symbols and decide which ones are minimal pairs, that is, which only differ by one sound (they will have the same number of sounds, too).

cub, cup

cup, pup

pup, pop

pop, pot

pot, spot

spot, spit

spit, spill

spill, spilt

Uses of phonetics and phonology

An understanding of phonemes and their allophones can be very useful if you are looking at the ways that people from different regions or social groups pronounce their words. In the same way that we can say that R.P. has a set of sounds that make up its sound system (the list of English sounds on page ?), we can say that each variety of English has a sound system. It might have more phonemes, or fewer phonemes than R.P.. The same can even be said of different social groups within a particular region. Each might have a slightly different sound system.

You can also use this way of looking at sound to analyse children's speech.

Child speech

Babies aren't able to pronounce any speech sounds when they are first born, but they gradually begin to make speech sounds and put consonants together with vowels during the babbling phase, progressing to more complex combinations of vowels and consonants as they grow. You can use your understanding of phonetics and phonology to investigate which sounds they start producing first and how they are able to use them. Can the child make all the sounds that an adult makes for speech or only a subset of those sounds? If only subset, which sounds are being produced? Do the consonant sounds they can make have anything in common? Are they only making plosives or can they make fricatives too? Do they pronounce their sounds like adults do, or does the sound that they are attempting sound different in any way?

Activity

Hedy was 1 year 11 months old at the time she was recorded. Look at the transcriptions of her speech and compare them to the transcriptions provided of how you might expect an adult to pronounce the same word. Square brackets have been used for Hedy's pronunciations of the adult sounds.

Word	Hedy	Adult pronunciation
sun	[dʌn]	/sʌn/
circle	[dʒkʊ]	/sɜːkl/
stripey	[daɪpɪ]	/straɪpɪ/
sky	[gaɪ]	/skaɪ/
drums	[dʌms]	/drʌmz/
green	[ɡɪn]	/ɡrɪn/
fish	[bəs]	/fɪʃ/
phone	[bəʊn]	/fəʊn/

flower	[baʊə]	/flaʊə/
brush	[bəs]	/brʌʃ/
yellow	[jejəʊ]	/jeləʊ/
red	[wed]	/red/

- Does Hedy always pronounce /s/ the same way?
- What are the variants?
- Does there seem to be any pattern which governs when she uses one pronunciation rather than another?
- If you look at the place and manner of articulation can you notice what the similarities and differences are between Hedy's pronunciations of /s/ and the adult pronunciation?

Now have a look at the words that begin with a consonant cluster.

- Does Hedy pronounce both sounds where a word begins with two consonants together in the adult pronunciation?
- Which of the two consonants tends to be pronounced?
- Are there any exceptions to this, and if so, why do you think that is?

Commentary

If you look for the words that the adult pronounces beginning with a /s/, like <sun> and <circle>, you can see that Hedy pronounces these with a [d]. However it seems that she can pronounce [s] at the end of a word. In these cases though, [s] is not the target pronunciation. She pronounces <fish> with the [s] at the end rather than /ʃ/. If we rely on the data provided here as a representative sample of Hedy's speech, she only pronounces /s/ one way – as [d]. Why does Hedy choose [d] as her pronunciation of /s/? If we compare the features of the two sounds we can see that although [d] is a plosive and the target pronunciation [s] is a fricative, they are both made at the same place of articulation, the alveolar ridge. Perhaps then, the child is nearly getting the target pronunciation right. The choice of [d] seems not to be random.

If we compare how Hedy pronounces consonant clusters in comparison to the adult speech, we find that she pronounces only one of the two sounds. In most cases it is the first consonant that is retained, and the second one is elided (missed out). So, in <drums>, the /r/ is not pronounced and it becomes [dʌms]. <Green> is the same. However, in <sky>, neither of the target consonants is pronounced as in the adult speech. Instead, Hedy produces [gaɪ].

We could analyse this as the /s/ being elided, and the target /k/ being pronounced as the voiced equivalent [g]. The same thing seems to be occurring in <stripey>. Children are known to often produce voiced consonants in place of voiceless ones before a vowel, but it is possible that something more complex is happening in this case. Consider the pronunciation of the word <sky>: If you pronounce it normally as [skaɪ] and then try to pronounce it as Hedy does, but with the /s/ - [sgaɪ], you should notice that the two pronunciations sound the same. This is because in English, the difference between voiced and voiceless plosives is neutralised when they follow /s/. So the /p/ in <spot> sounds a bit like a [b] and so on. Is it possible that Hedy hears this slight pronunciation quirk and follows it even though she cannot yet produce /s/ in that environment?

We will now look at some further data from Hedy.

Activity

The following data was collected 3 months later, when Hedy was 2 years and 2 months old.

Word	Hedy	Adult pronunciation
a fish	[ə fɪs]	/ə fɪʃ/
over	[əʊvə]	/əʊvə/
veg	[bedʒ]	/vedʒ/
snail	[neɪʊ]	/sneɪl/
spider	[baɪdə]	/spaɪdə/
eyebrows	[aɪbaʊs]	/aɪbraʊz/
princess	[pɪnses]	/prɪnses/
three	[fi]	/θri/
glove	[glʌv]	/glʌv/
butterfly	[bʌtəbaɪ]	/bʌtəflaɪ/
butterfly	[bʌtəfaɪ]	/bʌtəflaɪ/
pussy cat	[pʊkɪ kat]	/pʊsɪ kat/
pussy cat	[pʊsɪ kat]	/pʊsɪ kat/
check	[tek]	/tʃek/

coming	[tʌmɪŋ]	/kʌmɪŋ/
another one	[ənʌðə]	/ənʌðə/
that's not right	[dats]	/ðats/

In those 3 months, some of her articulations have changed, in some cases, her articulation is closer to the adult form. Notice also that there are some variations in pronunciations, that is, some words are pronounced in more than one way.

Try to answer the following questions:

- Is there evidence that Hedy has acquired some consonants that she couldn't articulate in the first dataset?
- Are these articulations consistent?
- Which phonemes seem to have more than one pronunciation?
- Are there any other articulations that are interesting that we haven't mentioned so far?

Commentary

It is interesting to note that while Hedy has acquired some new sounds, she is not yet able to pronounce them consistently. /f/ was always [b] in the first dataset, but here it is realised as [f] or [b]. These articulations seem to occur even in the same context, for example, see the two pronunciations of <butterfly>. The voiced sound at the same place of articulation, /v/, is also present in between 2 vowels in <over> and at the end of a word in <glove>, but appears as [b] at the beginning of <veg> (Hedy has a book called 'Meg's Veg'). Although it's unusual for children to develop /v/ as early as Hedy has, there are still some variations in her pronunciation at this stage. Another sound which is realised on more than one way is the /s/ in <pussy cat>. This is articulated as [s] in one instance and as [k] in another.

Some sounds that are present in this data set which we didn't see earlier, are /ð/, which is pronounced as [d] in <another> and <that's>, and /tʃ/, which is pronounced as [t] in <check>. Both of Hedy's pronunciations are close to the adult sounds. While /ð/ is a voiced dental fricative, /d/ is also voiced, and while it's not a fricative, its place of articulation is close to dental - it's an alveolar sound. If you look at the vocal tract diagram on page ?, you will see that the alveolar ridge is the next place of articulation back from the teeth, where dental sounds are made. In <check>, Hedy's [t] pronunciation is close to the /tʃ/ it represents, as /t/ is a voiceless alveolar plosive, and the target sound, /tʃ/, is a voiceless post alveolar affricate.

An affricate is part plosive, part fricative. In this case it seems that Hedy has articulated the first part, the plosive, successfully.

Extension Exercises

Extension 1

Look at the words in 'a rough-coated dough-faced ploughman' and transcribe all of the sounds represented by the 'ough' spelling. How many different pronunciations of 'ough' do you end up with? Is this the sequence of letters with the most variety in pronunciation that we have in English?

Extension 2

In the first child speech dataset, Hedy pronounces 'fish' and 'brush' as homophones – they sound the same. Can you go any way towards explaining why this might be?

Extension 3

Make a list of the consonant articulations that Hedy uses in the two datasets and compare them to the full set of R.P. consonants. Which ones are missing from Hedy's list?

What consonant clusters are present in the Adult pronunciations, and how does Hedy pronounce each of them?

Extension 4

In the commentary on the first dataset, it was suggested that Hedy might be tuning in to some very slight pronunciation differences in the voiceless plosives /p,t/ and /k/ when they follow /s/. In adult speech they sound a bit like their voiced equivalents, /b,d/ and /g/. Hedy's sensitivity to this pronunciation difference was evident in her pronunciation of [gaɪ] for 'sky'. Although Hedy missed off /s/, because she's not yet articulating consonant clusters, she pronounced the /t/ and /k/ just as an adult would pronounce them after /s/. Is there any further evidence in Hedy's speech three months later, which would strengthen the hypothesis that Hedy hears and

reproduces the slight pronunciation difference of voiceless plosives after /s/ rather than pronouncing all voiceless plosives as voiced ones?

Further Commentaries

Commentary on Activity #?

Answers:

Thistle

Boat

Couch

Curious

Raced

/rubab/

/θri/

/fʊgə/

/sləʊpɪŋ/

/dɔ/

/kʌstəd/

/jeləʊ/

/nɔɪzɪ/

/ɪkstensɪv/

In R.P., /r/ is not pronounced unless it is before a vowel sound. In <rhubarb>, the <r> in the spelling is before /b/ sound, not a vowel, so it is not pronounced. So, while American accents and Scottish accents would pronounce <rhubarb> as /rubarb/, R.P. pronounces it as /rubab/. <door> is affected in the same way. The correct transcription is /dɔ/ rather than /dɔr/.

The difference between the vowels /ʌ/ and /ə/ are often a source of some confusion for learners of the IPA. The 'schwa' vowel is produced with the vocal tract in a very neutral position. If you open your mouth a small way and make a short vowel sound leaving your tongue relaxed, this is the /ə/ vowel. The /ʌ/ has a more open mouthed position and sounds a bit more like /a/.

In words like <noisy> which is pronounced /nɔɪzɪ/, learners often feel that there should be a /j/ sound at the end of the transcribed word. The same issue affects words like <yellow>, where learners often want to use a /w/ sound. Transcription of R.P. follows a convention which says that the use of the /j/ or /w/ is superfluous at the end of a word.

Speakers of some regional varieties of English have trouble distinguishing between the vowels /ʌ/ and /ʊ/ for very good reasons. Some Northern accents for example don't contain the /ʌ/ vowel, so speakers would pronounce both <tuck> and <took> as /tʊk/, in other words, these two words are homophones (they sound the same but have different meanings).

Commentary on activity #?

/s, v, θ, /	These sounds are all fricatives
/t, d, n/	These sounds are all made at the same place of articulation – the alveolar ridge
/m, b, p/	These sounds are all made at the same place of articulation, the lips. That is, they are bilabial sounds.
/s, f, t, ʃ, h/	Most of these sounds are fricatives, but not /t/, which is a plosive. The thing that they <i>all</i> have in common is that they are all voiceless.

Commentary for activity #?

/kʌb/ /kʌp/	These two are a minimal pair as they are different by only one sound. The /b/ is replaced with a /p/.
/kʌp/ /pʌp/	Again, these are a minimal pair. The /k/ changes to a /p/.
/pʌp/ /pɒp/	These are a minimal pair. This time, the vowel /ʌ/ changes to a /ɒ/.
/pɒp/ /pɒt/	Another minimal pair. The /p/ changes to a /t/.
/pɒt/ /spɒt/	These words are not a minimal pair. The second word has the same sounds as the first plus an additional sound.
/spɒt/ /spɪt/	These are a minimal pair. The /ɒ/ changes to a /ɪ/.
/spɪt/ /spɪl/	These are also a minimal pair. The /t/ changes to a /l/. The spelling <spill> has one more letter than <spit>, but if you did your transcription correctly then they have the same number of sounds.
/spɪl/ /spɪlt/	These are not a minimal pair. The second word has the same sounds as the first word plus an extra sound.

The following satellite titles in the Intertext Series are also relevant to this unit:

The Language of Comics, *The Language of Drama* and *The Language of Fiction* all show examples of how talk can be represented.

The Language of Children has further examples of how children talk.

The Language of Conversation looks at some social aspects of talk.

The Language of Speech and Writing considers several aspects of spoken language.

Language and Region looks at regional varieties of spoken English.

The Language of Politics looks at political speeches.

Swift, N., (2008) 'Unit 2: Sounds', in Beard, A. (ed.) *Working with Texts: A Core Introduction to Language Analysis*. London: Routledge.

<https://www.routledge.com/Working-with-Texts-A-Core-Introduction-to-Language-Analysis/Carter-Beard-Goddard-Reah-Sanger-Swift/p/book/9780415414241>