TUTORIAL
5.3

Phonetics 1

This is the first of a series of tutorials on the area of phonetics - speech sounds. It outlines our purpose in studying phonetics, what phonetics is, and introduces the International Phonetic Alphabet.

Introduction

Over the next five tutorials we're going to focus on *speech sounds* - the branch of linguistics that studies these is called *phonetics*. There are several branches of phonetics, including:

- *Articulatory phonetics* - the study of how speech sounds are made,
- *Acoustic phonetics* - the study of the physical properties of speech sounds (e.g. the frequency of the waves going through the air),
- *Auditory phonetics* - the study of speech sounds from the point of view of the hearer.

We'll focus on articulatory phonetics here, because it is the most foundational and the most useful for our purpose. Acoustic and auditory phonetics are important in other fields such as speech pathology.

The study of speech sounds (which are also called *phones*) was first motivated (in the late 19th century) by the need to create orthographies (writing systems) for unwritten languages and to reform spelling in existing orthographies. Because phonetics begins with the actual speech sounds of language and attempts to write them in such a way that they can be accurately reproduced, it is an essential foundation for producing an adequate alphabet or orthography. The English phonetician, Henry Sweet (1845 -1912) is credited with founding the modern science of phonetics during his own work of reforming the English alphabet. His *Handbook of Phonetics* begins:

The importance of phonetics as the indispensable foundation of all study of language - whether that study be purely theoretical, or practical as well - is now generally admitted. (Sweet 1877)

Our goals in studying phonetics

Phonetics is an area where it is easy to start feeling overwhelmed – by the sheer number of sounds in language that you might need to learn to write down, by the subtle differences that are difficult to hear at first, or by the unfamiliar writing system used to write those sounds.

For most of us, phonetics takes a lot of practice and repeated listening before it sinks in. The tutorials in this course will introduce the *concepts* and some *resources* to you, so you will have opportunity to practice as much as you need to. Like all practice, you'll find you learn more effectively if you do 10 minutes every day than if you try and cram in a couple of long sessions.
The object of this course is to prepare you for a real situation where you will be working with a real language (or several) - possibly one of which has not been written down before. Remember the particular language you work with will contain a *limited* number of sounds, and you will have time to learn those as you interact with speakers of that language, and to refresh yourself on the particular phonetic sounds in that language at that time. So, the goal for this course is not for you to have memorised every possible sound that can be made by a human being and to know how to write each one. So what are our goals?

By the end of these phonetics tutorials we expect that you will know that there is an IPA (International Phonetic Alphabet) character that can represent every sound in English (or in any language). We also hope that you will understand how sounds are made, and describe how particular sounds are made using a range of criteria, such as lip position and tongue height in the mouth. We will also focus on examples from Australian English, to give you a feel for phonetics in your own dialect. Also, you will have an idea of the resources that are available to help you later on.

Remember as you go through these tutorials, your goal is not to have memorised every IPA character or the description of how every sound is articulated.

Why we don't use English spelling to represent speech sounds

In order to identify different speech sounds, we need a way of referring to them - this means we need symbols for them. A set of symbols *has* been developed - called the International Phonetic Alphabet (IPA) - which we will look at in more detail later. But first, let's see why we can't simply use the letters of the English alphabet to represent speech sounds.

The main reason is that the system of symbols needed to identify speech sounds must have a *one-to-one relation* between the symbols and the sounds they represent. This means that every symbol stands for exactly one sound, and every sound is represented by exactly one symbol. Then when we see a symbol we know immediately exactly what sound it stands for, or if we hear a sound we know which symbol to use to record that sound.

You probably already have some idea that English spelling fails dismally in having a one-to-one relation to the sounds it represents, because one letter of the English alphabet can stand for different sounds in different words. Sometimes, as speakers of English, we might not even realise that we're saying completely different sounds, because they're spelled with the same letter!

For example, take the English letter <*a*>. The sound spelled by <*a*> in *f**a**t* is different from the sound spelled by it in *f**a**ther*, and both are different from the sound in ***a**bout*. Say the three sounds out loud one after the other ... they are completely different sounds, but are spelled using the same letter in English. So, if we just used the English letter <*a*> as the symbol for a sound in a foreign word, people would not know whether we meant the sound in *fat*, in *father*, or in *about* (or some other sound). This is an example in English spelling of one symbol representing many sounds.

English spelling also has another problem - one sound can be represented by several different symbols. The sound below is exactly the same sound in all these words, but is represented many different ways in English spelling:
<*ea*> as in *br**ea**k*,
<*ay*> as in *b**ay***,
<*ai*> as in *b**ai**t*,
<*a*> with a "silent e" at the end of the word as in *b**a**ke*,
<*ey*> as in *th**ey***, and
<*eigh*> as in *w**eigh***.

The problem here is that English spelling is not a correct representation of the *pronunciation* of English. By reading the spelling, you do not know how to correctly pronounce the word. There are many other examples of this weakness in English spelling:

- Sometimes two letters stand for a single sound, such as <th> and <sh>. A sequence of two symbols should stand for a sequence of two sounds.
- Not only that, but there are actually two <th> sounds: the sound beginning the word ***th**is* is not the same as the sound beginning the word ***th**ing* (a fact many native speakers of English might have no conscious awareness of, although they say the right sound at the right time).

- The opposite situation also occurs: where one letter of English stands for a sequence of sounds, such as the letter <x>, which often stands for a *k* sound followed by an *s* sound. One symbol should stand for a single sound, not a sequence.
- English spelling also often has “silent letters” - there is the silent <e> which occurs at the end of a lot of words, the <s> in *i**s**land*, the <b> in *de**b**t* and in *lam**b***, and a lot of the letters in ***k**ni**gh**t*.

Sometimes native speakers of English might even think that they do say a sound that’s not part of the normal pronunciation of the word, because it’s in the spelling, or if they realise they don’t, they might think that they should say it. Think about the word *few* - if you listen to it you’ll hear that there’s a *y* sound after the *f* sound, but where is it in the spelling? And for speakers of Australian English - say the word *car*. Did you hear the *r* sound at all? (That’s because you didn’t say it.)

Not surprisingly, English spelling is difficult to learn, both for native and non-native speakers, but it does follow a system. One reason for its inconsistency it is that the sounds of English have changed over time (this is true of all languages), but English spelling has not changed as much. This means that English spelling is actually quite a good representation of how English used to be pronounced a long time ago, but it’s not such a good representation of how it’s pronounced today.

Sounds in other languages

So, the English alphabet is not a good way to represent the sounds of English, and it’s even worse for representing the sounds of many other languages. This is because English only uses a few of all the possible speech sounds that are used by languages around the world. Even languages like French, German, and Swedish use sounds that are not found in English. Most of the world’s languages don’t have a traditional writing system, and many of them have sounds that are not found in English. How could we represent these so that we would know what the sounds were if we used the English writing system?

Introducing the International Phonetic Alphabet (IPA)

On the website you will find a PDF of the IPA Chart. Download it and print it out so you have it available to look at, now and for the following tutorials.

Because the English spelling system is not a good way to represent the sounds of the world's languages, we use a system that is just for making an accurate on-to-one representation of the speech sounds of a language. The system we use to represent the sounds and pronunciation of English and all the world's languages is the *International Phonetic Alphabet* (usually called the IPA for short).

The IPA gives us a one-to-one relation between sounds and symbols - each symbol stands for one and only one sound (phone), and each sound is represented by one and only one symbol.

Everyone, even if they have the same accent, pronounces sounds slightly differently (everyone has slightly different anatomy) and even the same person doesn't pronounce sounds identically all the time. These very minor differences are of no linguistic significance, and are not represented in the IPA.

We have a choice when we're writing sounds out in IPA (technically called *transcribing*) about how detailed we want to make our transcription. Sometimes we don't represent every aspect of pronunciation (especially those that are completely predictable) depending on why we're making the transcription. We can do *narrow transcription* which is more specific, and *broad transcription* which is less specific.

The IPA was created more than a century ago, and has undergone many changes over the years - the most recent version is corrected to 2005.

The IPA is the most widely used phonetic alphabet, but not everyone uses the IPA: there's another system, called the (North) American system (sometimes called the APA) and sometimes the authors of books also introduce their own symbols.

To make it clear in the examples that we will use that we're transcribing a word using IPA, rather than spelling it using the English spelling system, we will always enclose IPA symbols and transcriptions in square brackets. E.g. [i] means the IPA symbol for a specific vowel, not the letter of the English alphabet. If we are meaning the English letter, we will use angle brackets for that purpose, e.g. the English letter <i>.

Some IPA symbols look quite similar to each other, so it's very important to take care if you are writing phonetic symbols, since if you're not careful, people might think you're writing a different symbol than the one you mean. Fonts for phonetic symbols are available free from the website of the Summer Institute of Linguistics. The preferred font is Doulos SIL.

DISCUSSION POINTS
Phonetics 1

1. Have you ever thought much about different 'accents' of English and what people are actually doing with their mouths to produce different accents?
2. How do you feel about beginning to explore phonetics (e.g., fascinating, difficult)?
3. How would you describe the general differences between Australian English and other varieties of English?

ACTIVITIES
Phonetics 1

1. Search for an interactive IPA chart online. Listen to all the different sounds. Notice how each sound is different - each symbol represents a separate sound.

2. Search for and watch a video online introducing the International Phonetic Alphabet. We have covered some of the concepts already in this tutorial, and some things will be new to you. Don't panic, we will be covering them in the next and later tutorials - but this is a good introduction to the concepts and will help to give you a framework for learning.

3. The poem below illustrates the lack of consistency in English spelling and the reason we need a phonetic alphabet. Many words with similar pronunciation in English are spelled differently (called homophones). Rewrite the poem using correct English spelling.

   Eye halve a spelling chequer
   It came with my pea sea
   It plainly marques four my revue
   Miss steaks eye kin knot sea.

   Eye strike a quay and type a word
   And weight four it two say
   Weather eye am wrong oar write
   It shows me strait a weigh.

As soon as a mist ache is maid
It nose bee fore two long
And eye can put the error rite
Its really ever wrong.

Eye have run this poem threw it
I am shore your pleased two no
Its letter perfect in it's weigh
My chequer tolled me sew.

(Sauce unknown)