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## **Words in Connected Speech**

**By**

**Asst.Prof. Hadeel Kamil Ali**

**[hadelkamel@tu.edu.iq](mailto:hadelkamel@tu.edu.iq)**

This is a good way of starting to look at the gestures that make up the words of English (or, indeed, of any language, as we will see later). But speech is not really composed of a series of distinct gestures, and, anyway, we don't usually speak using isolated words. When looking at the short movie clip of on top of his deck, all the actions run together, making it very hard to see separate gestures. It's useful to look at short, specially constructed phrases to be able to see the main aspects of individual vowels and consonants. But now we must look at how pronunciations of individual words compare with what happens in more normal, connected speech. The form of a word that occurs when you say it by itself is called the citation form. At least one syllable is fully stressed and there is no reduction of the vowel quality. But in connected speech, many changes may take place. Consider, for example, the

spectrogram in Figure 5.1. This is our first spectrogram of speech, so you shouldn't expect to get much out of it at first, but even with only a little explanation of how to "read" a spectrogram, you should be able to tell that the word *opposite* was said in two different ways in this utterance. The speaker was being interviewed, and the topic of life choices came up. He was talking about choosing between a life of crime or a life in a religious discipline, and he said, "or I was going to go in the opposite direction, and I went in the opposite direction." Before reading on, listen to this utterance at the website. Can you hear any differences in the word *opposite* between the first time he says it and the second? They both seem to be perfectly acceptable (American) pronunciations of the word, but the spectrogram shows some differences. The second *opposite* is phonetically reduced. There are arrows under the portions of the spectrogram that correspond to vowel sounds. The first *opposite* has three arrows corresponding to the three vowels that we expect in the citation form of the word, while in the second production we can only identify two vowel segments.

In reading spectrograms, the first and most basic observation to make is that there are three basic types of sounds. A stop appears as a white gap (silence) followed by a very thin vertical stripe (the release burst). You can see this pattern in the [p] of both productions of *opposite* in Figure 5.1. Fricatives appear as dark patches near the top of the spectrogram. The [s] of *opposite* is visible in both productions, as is the [ʃ] of *direction* ["dɪrɪkʃən]. The third basic type of sound includes vowels, approximants, and nasals and has anywhere from two to five roughly parallel horizontal bands, generally with one band below a thousand Hertz (Hz on the vertical scale), one between one thousand and two thousand Hz, and another between two thousand and three thousand Hz. You can see that the unstressed vowels of the first *opposite* are quite short in duration—less than 0.05 seconds on the horizontal scale—

and one of the two has completely vanished in the second opposite so that it is now pronounced [ "apsIt ]. There are other indications of reduced pronunciation in the second production of this word—all of the segments are shorter, the first vowel has no steady-state portion (see how the second highest dark band goes down in frequency throughout the vowel, where in the first production there was a plateau), and the [s] is lighter at the top of the spectrogram. When words are said in connected speech, they may be pronounced with varying degrees of emphasis, and this results in varying degrees of deviation from the citation form (which can be taken as the most emphatic, phonetically full form of the word). In Chapters 3 and 4, we discussed consonant and vowel allophones that help us describe the patterns of pronunciation found in citation forms. The range of phonetic variability found in connected speech is a good deal greater and more subtle than the variability found in citation forms, and this makes it difficult to describe the sound patterns of conversational speech as alternations among phonetic symbols; quantitative measurement of duration, amplitude, and frequency is often a more insightful way to proceed. Nevertheless, some useful observations about phonetic reduction in conversational speech can be based on careful phonetic transcription. The key difference between citation speech and connected speech is the variable degree of emphasis placed on words in connected speech. This “degree of emphasis” is probably related to the amount of information that a word conveys in a particular utterance in conversation. For example, repetitions such as the second opposite in Figure 5.1 are almost always reduced compared to the first mention of the word—but here we will focus on the phonetics of reduction, not its semantics. The citation speech/conversational speech difference is particularly noticeable for one class of words. Closed-class words such as determiners (a, an, the), conjunctions (and, or), and prepositions (of, in, with)—the grammatical words—are very rarely emphasized in connected speech, and thus their normal pronunciation in connected speech is

quite different from their citation speech forms. As with other words, closed-class words show a strong form, which occurs when the word is emphasized, as in sentences such as He wanted pie and ice cream, not pie or ice cream. There is also a weak form, which occurs when the word is in an unstressed position. Table 5.1 lists strong and weak forms of a number of common English words

Several of the words in Table 5.1 have more than one weak form. Sometimes, as in the case of and, there are no clear rules as to when one as opposed to another of these forms is likely to occur. After a word ending with an alveolar consonant, most speakers of English have a tendency to drop the vowel and say [n`- ] or [n`d] in phrases such as cat and dog or his and hers. But this is far from invariable. For some words, however, there are rules that are nearly always applicable. The alternation between a [ E ] before a consonant and an [ En ] before a vowel

EXAMPLE 5.2  
Table 5.1 Strong and weak forms of some common English words. Over five times as many could easily have been listed.

is even recognized in the spelling. Similar alternations occur with the words the and to, which are [ DE, tE ] before consonants and are often [ Di, tu ] or [ D^, tÁ ] before vowels. Listen to your own pronunciation of these words in the sentence The [DE] man and the [D^] old woman went to [tE] Britain and to [tÁ] America. The two examples of the will often be pronounced differently. It should be noted, however, that there is a growing tendency for younger American English speakers to use the form [ DE ] in all circumstances, even before a vowel. If a glottal stop is inserted before words beginning with a vowel (another growing tendency in American English), then the form [DE] is even more likely to be used. Some of the words in Table 5.1 are confusing in that the same spelling represents two words with different meanings (two homonyms). Thus, the spelling that represents a demonstrative pronoun in a phrase such as “that boy and the man,” but it represents a subordinate

conjunction in he said that women were better. The conjunction is much more likely to have a weak form. The demonstrative that is always pronounced [ ðæt ]. Similarly, when has is an auxiliary verb, it may be [ z ], as in she's gone, but it is [ hEz ] or [ Ez ] when it indicates possession, as in she has nice eyes. At this point, we should note a weakness in the above discussion and in Table 5.1. We have been using phonetic transcription to note changes that occur. But although transcription is a wonderful tool for phoneticians to use (please go on practicing it), it is not a perfect one. All transcriptions use a limited set of symbols, giving the impression that a sound is one thing or another. The word has, for example, has been transcribed as [ hæz ] or [ Ez ] or [ z ], but there are really lots of intermediate gestures. The word to has more possibilities than [ tu, tÁ, tE ]. Similarly, in the previous chapter, we discussed the first syllable in words such as potato, noting that the vowel can be there or not. But it's really not as absolute as that. There may be anything from just the [ pÓ ], through a single glottal pulse of a vowel, to (rather unusually) a full vowel [ oÁ ]. Speech is a continuum of gestures that may be produced fully or in a reduced form, or may be virtually not present at all.

These considerations also apply to another way in which words can be affected when they occur in connected speech. As you already know, sounds are often affected by adjacent sounds—for example, the [ n ] in tenth is articulated on the teeth (or nearer to them) because of the following dental fricative [ T ]. Similar effects commonly occur across word boundaries, so that in phrases such as in the and on the, the [ n ] is realized as a dental [ n1 ] because of the following [ D ]. But it isn't a simple choice of the nasal being either dental or alveolar. Using phonetic transcription, we have only those two possibilities. Transcription puts things in one category or another, but in fact there is a continuum of possibilities between the two possible transcriptions. Finally, in this discussion of the limitations of transcription, think how you say

phrases such as fact finding. Do you pronounce the [t] at the end of fact? Most people don't say [ˈfæktfaɪndɪŋ] with no [t] gesture, nor do they say [ˈfæktfaɪndɪŋ] with a complete [t] gesture. Instead, there is probably a small [t]

gesture in which the tip of the tongue moves up slightly. A similar partial gesture probably occurs in phrases like apt motto and wrapped parcel. You cannot say that there is or is not a [t]. When one sound is changed into another because of the influence of a neighboring sound, there is said to be a process of assimilation. There is an assimilation of [n] to [n̩] because of the [D] in the phrase in the. The assimilation may be complete if the nasal becomes absolutely dental, or partial if it is somewhere between dental and alveolar, a form we cannot symbolize in transcription. Anticipatory coarticulation is by far the most common cause of assimilations in English. In this process, the gesture for one sound is affected by anticipating the gesture for the next sound. But there are also perseverative assimilations in which the gesture for one sound perseveres into the gesture for the next sound. The pronunciation of the phrase it is [ɪt ɪz] as it's [ɪts] is a result of the perseveration of the voicelessness of [t]. There is, of course, nothing slovenly or lazy about using weak forms and assimilations. Only people with artificial notions about what constitutes so-called good speech could use adjectives such as these to label the kind of speech we have been describing. Rather than being labeled lazy, it could be described as being more efficient, in that it conveys the same meaning with less effort. Weak forms and assimilations are common in the speech of every sort of speaker in both Britain and America. Foreigners who make insufficient use of them sound stilted

**TABLE 5.1** Strong and weak forms of some common English words. Over five times as many could easily have been listed.

Word	Strong form	Weak form	Example of a Weak Form
a	eɪ	ə	a cup [ ə 'kʌp ]
and	ænd	ənd, ɪd, ən, ɪ	you and me [ 'ju ən 'mi ]
as	æz	əz	as good as [ əz 'gʊd əz ]
at	æt	ət	at home [ ət 'həʊm ]
can	kæn	kən, kɪ	I can go [ aɪ kɪ 'ɡəʊ ]
has	hæz	həz, əz, z, s	He's left [ hɪz 'left ]
he	hi	i, hi, i	Will he go? [ wɪl ɪ 'ɡəʊ ]
must	mʌst	məst, məs, mɪ	I must sell [ aɪ mɪ 'sel ]
she	ʃi	ʃi	Did she go? [ 'dɪd ʃi 'ɡəʊ ]
that	ðæt	ðət	He said that it did [ hɪ 'sed ðət ɪt 'dɪd ]
to	tu	tu, tə	to Mexico [ t ə 'meksɪkəʊ ]
would	wʊd	wəd, əd, d	It would do [ ɪ t əd 'du ]

**TABLE 4.3** The distribution of tense and lax vowels in stressed syllables in American English.

Tense Vowels	Lax Vowels	Most Closed Syllables	Open Syllables	Syllables Closed By [r]	Syllables Closed By [ŋ]	Syllables Closed By [ʃ]
i	ɪ	beat	bee	beer		(leash)
eɪ	ɛ	bit			sing	wish
	ɛ	bait	bay			
	ɛ	bet		bare	length	fresh
ou	ʊ	boat	low	(boar)		
	ʊ	good				push
u	ə/ʌ	boot	boo	tour		
	ə/ʌ	but		burr	hung	crush
aɪ	ɔɪ	bite	buy	fire		
	ɔɪ	void	boy	(coir)		
ju		cute	cue	pure		