

CHAPTER 6

WORD STRESS IN ENGLISH AND UKRAINIAN

6.1. INTRODUCTION

Intensification of a syllable or syllables of a word by phonetic means is called word stress.

Word stress is one of the main distinctive features of a word. Word stress singles out the accentual centre of the word, organizing the word as a structural unit of speech.

Word stress is a constituent of the word, a part of the model, a mode of the phonetic organization of the word as a single unit (Багмут А.І., Покидько О.М., 2000).

As it has been pointed out in Chapter 5, each syllable, as an independent segmental unit, is characterised by some degree of acoustic energy, which appears as a result of intensification of speech organs muscles and their movements in the process of speech production.

In a word, consisting of two or three syllables, one of the syllables is characterised by a greater tension of the muscles or the organs participating in speech and consequently, by a stronger impulse of energy than other syllable or syllables of the word. Such syllables are said to be stressed. The syllables which are characterised by a weaker muscle tension and a weaker impulse of energy are said to be unstressed¹.

Word stress, as well as the syllable, is one of the most important and complicated phonetic phenomena. It is possible to give an accurate definition of the nature of word stress only on the condition of accounting the peculiarities of physiological, acoustic and perceptual problems of its production.

¹ The term “unstressed” syllable is inadequate. Actually there are no unstressed syllables in speech. Any syllable has some degree of acoustic energy and consequently some degree of stress. But we use the term “unstressed” in this work as it is traditional and widespread in phonetics.

In most cases word stress is defined by linguists from the physiological and perceptual points of view as a degree of force with which a syllable is pronounced; as a syllable which is perceived as more tense and louder than other syllables in the word.

A.I. Tomson pointed out that syllables are basically sonorous. In most languages force gradation produces an acoustic impression of strong or weak syllables (Томсон А.И., 1910).

G.P. Torsuyev wrote that one of the syllables of a word consisting of two or more syllables is more distinct than the others and is perceived as stressed. The effect of word, stress is achieved by strong tension of articulating organs.

A strong force of utterance means energetic articulation of speech organs, a strong force of exhalation, a strong push of the air from the lungs and gives the impression of loudness. Weak force of exhalation is the result of a weak force of utterance, of weak energetic action of the active speech organs, and gives on acoustic impression of softness.

Rather many scientists came to the conclusion that as a result of increased tension of articulating organs the stressed syllables acquire a higher pitch of voice or other frequency characteristics (Jones D., 1956; Торсуев Г.П., 1950; Васильев В.А., Буренкова О.В., Катанская А.Р., 1962; Mateescu D., 2003 and others).

Stressed syllables pronounced as phonetic words or read as dictionary units are deprived of frequency characteristics, except the inherited frequency characteristics of speech sounds and belong to the segmental level of speech.

Therefore, investigating the nature of word stress, phonetic words or words read as dictionary units are to be taken as the experimental material because in these cases the characteristics of word stress are clearly displayed and it is possible to extract characteristics belonging to word stress.

In all the other cases when a word is pronounced isolatedly it becomes a phrase with a definite intonation structure of a statement, request, question etc., with the corresponding frequency characteristics of the phrase.

Having agreed that word stress is connected with a greater degree of tension and intensity of speech organs, some linguists noted that at the same time stress may be defined as a greater degree of prominence (Торсуев Г.П., 1950; Васильев В.А., Буренкова О.В., Катанская А.Р. и другие, 1962), that stressed syllables are perceived as having a high degree of prominence (Mateescu D., 2003).

Criticizing this point of view it was noted in literature that word stress must not be confused with prominence. Prominence is the degree of general distinctness of speech – the combined effort of timbre, duration, intensified stress and pitch. It may be achieved by means of intensified sentence stress – logic or emotional stress, by means of components of intonation (Jones D., 1956).

The problem what characteristics of a syllable cause the impression of word stress is important. It has been proved in Chapter 5 of the present book that the main characteristic feature of a syllable is total acoustic energy. Stressed syllables are characterised by a bigger degree of total acoustic energy than the corresponding unstressed syllables.

Word stress is perceived by a human ear and consequently, the listener perceives word stress not as increased tension of the muscles of speech organs but as the result of this tension. The increased acoustic energy of a sentence the listener receives by the ear as strength.

On the level of perception a stressed syllable is heard by the listener as louder, more distinct and more “weighty” than the corresponding unstressed syllable.

Total acoustic energy is a complex physical characteristic of a syllable, consisting of two components – intensity and duration.

It was observed during the experimental study of word stress that acoustic characteristics of intensity and duration do not act independently of each other in the process of producing the main parameter of word stress – total acoustic energy.

Only the result of the joint coordinate action of intensity and duration – total acoustic energy, i.e. intensity over time – the main characteristic feature of word stress is perceived as word stress by the listener.

Stressed and unstressed syllables are homogeneous in their nature. The difference between stressed and unstressed syllables is purely quantitative – a stressed syllable differs from the unstressed syllables of the same word by a bigger degree of total acoustic energy.

A bigger degree of total acoustic energy may be achieved by the increase of two of its components or one of them, but the share of the components depends upon the phonemic structure of the language.

Thus, in English, intensity is more important than duration, as duration is already “engaged”, being a phonemic feature of English vowels. In Ukrainian, where the duration of vowels is not phonemically relevant, duration is a more important component of total acoustic energy than intensity in producing the effect of word stress.

To make the process of a stressed syllable production easier to comprehend let's compare the formation of an unstressed and a stressed syllable with the building of two houses: a smaller one and a bigger one.

To produce a syllable an impulse of total acoustic energy, i.e. intensity for some period of time is required. A stressed syllable requires a bigger degree of energy, than the unstressed one, which may be achieved by a bigger intensity or longer duration. To build a house some work is required – an effort of the builders during some period of time. A bigger house requires a bigger amount of work, i.e. a bigger effort and a larger number of builders or a longer period of time.

For example, a stressed syllable in comparison with the unstressed syllable in a word is characterised by twice as big total acoustic energy achieved by a bigger intensity or by a longer duration. In the same way a two-floor house, in comparison with a one-floor house may be achieved by a larger number of builders (10 builders instead of 5), by a longer period of time (12 months instead of 6, than a one-flat house).

The main purposes of word stress are:

1. Word stress, just as a phoneme, is the inevitable element of the sounding word. This function of word stress may be called word identifying function (Zinder L.R., 1979). It ensures the existence of a phonetic word as a segmental unit of speech.

The preservation of the stressed pattern of the word by emphasizing one or more of its syllables and maintaining definite relationship of the amounts of total acoustic energy of syllables within the word in dependence with the position of the syllables in it, ensures the existence of a phonetic word as a segmental unit of speech.

2. The discrimination between free-word combinations and compound words is an important function of word stress. Word stress is the main distinctive feature of an independent word (Аванесов Р.И., 1956).

3. Plenty of examples underline the decisive role of word stress in the process of conversion – differentiating parts of speech in English, for example:

'present *n* – pre'sent *v*
'object *n* – ob'ject *v*, etc.

4. On the higher suprasegmental level syllables serve as the structural material for creating all the suprasegmental units of speech. Stressed syllables get additional independent characteristics of intensity, duration, frequency, etc., which makes it possible to achieve semantic variations, expressiveness, modal and emotional shades of meaning in the utterance, preserving the main acoustic quality of word stress – total acoustic energy on the suprasegmental level under various conditions of proof pronunciation as well.