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# PERCEPTION OF QUALITY AGAINST QUANTITY

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Which is more important, quality or quantity of sound? The perception of "long sounds" and "short sounds" will be easy to understand as they are common and practical. But, is the length of a sound absolute? No! For instance, the English dictionary reads "do" as [du:], "pass" as [pa:s], and "me" as [mi:]. They are all long vowels but in actual speech they are often pronounced as short or semi-short like [du] or [duː] [pas] or [paːs] [mi] or [miː]. It is proved by the oscillograph test that the physical absolute quantity of so-called vowels differs according to the occasion and situation. I wonder therefore if it is right or not that the quantity of sounds which is changeable is fixed in dictionaries, giving us the idea that the meaning of a word is not changeable, either. Conversely short vowels can be prolonged and changed to long vowels. For instance, "good" [gud] is often pronounced as [gu:d]. It is very common that "little" [lɪtl] and "very" [veri] are prolonged like [lɪ:tl] and [ve:ri]. The pronunciation of words is always influenced by *intonation* and *prominence* and it is very often changed in *length*.

From the above view point, I do not like to agree with the notations wherein quality may be underestimated because of the idea of the fixed quantity of sounds. In general, the teaching of languages must follow the auditory tracing of *Lautgefühl* and it is desired that the notations show the sensitive difference of the quality of sounds in an appropriate way. I believe that the *IPA-system* is extremely adequate in this point. I do hope that this system should be used in general English dictionaries and in English teaching of the world, drawing distinction particularly *ɪ* from *i*, *e* from *ɛ*, *ɔ* from *o*, and *ɚ* from *ə*, as they are luckily adopted by *Le maître phonétique*. I believe that this theory can be applied effectively to other languages than English and that it is an important factor to promote the study of Phonetic Sciences themselves.

As a proof of the above, I will explain the characteristics of the Japanese language and the important question of quality against quantity of sounds. It is commonly believed that the Japanese language has long and short consonants and vowels. It seems that the Japanese themselves have been brought up with this pre-conception.

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However, this is not correct from the current scientific standpoint and furthermore, it may be a wrong course which prevents the Japanese language from phonetic development. The alphabet peculiar to Japanese is the so-called "kana" a kind of syllabary. Each of the syllabaries has no rule or usage in record as to whether it is short or long. The rule has not been settled yet and the sound is changeable from "long" to "short" and vice versa. In short, Japanese syllabaries have no physical absoluteness but they are pronounced on the basis of psychological feeling. Strictly speaking from the acoustical standpoint,—setting mechanical sounds apart—any human voice, not limited to Japanese, which is based on breath movement will never have a pure long sound. Every sound changes its quality in accordance with the *duration of time*.

Particularly in Japanese,—which has the characteristics of a tone-language or musical accent language—when a sound which is considered "short" is prolonged, tonal transition takes place without exception. The Japanese language is generally called a musical accented language against stress accented languages such as English, French and German by conventional students of the Japanese accent including foreigners. It appears that this theory has developed into a kind of faith among the researchers of linguistics. In other words, they assume that a Japanese word composed of a certain number of syllables is pronounced so that a syllable (or syllables) of the word is (or are) pitched higher or lower than the other syllables. They try to summarize, patternize and stabilize the pitch form and make a perception out of it. On the other hand, however, all the Japanese people except a few scholars having interest in the discussion of accent—including, of course, teachers of primary schools—are almost ignorant of the word-tone of the words they speak. Some Japanese speak with a certain "namari" and some with another. "Namari" means a word-tone in a broad sense inclusive of the current intonation and local accents.

What I want to point out is that a tonal transition does not occur on the basis of the vague theory of "long" and "short," or the quantity of sounds, but is it a tonal-dissimilation based on the *quality of sounds*.

For instance, "Tokyo" is not composed of vowels of even pure long vowel sounds but it is a musical form by tonal transition. The accent form of "Tokyo" is usually considered a 'low-high-pattern' and the four syllables contained are in the form of  $o/\overline{o} \overline{o} \overline{o}$ . It is usually accented like [to $\overline{ok}j\overline{o}$ ]. The first syllable [to] is pronounced in a low-pitch and the other syllables starting with the next [o] are in a high-pitch and at the last have a little lower [o]. In short, the word-tone of "To-" changes as its quality of sound changes. To explain the theory conversely, the vowel sound is not prolonged to make the linguistic-meaning clear but the sound is syllabically dissimilated by transition. The pronunciation of "Osaka" [o $\overline{saka}$ ] and "Kyoto" [k $\overline{j\overline{o}to}$ ] comes under this category.

In conclusion, I should like to point out that the quantity of sounds, which ignores the *quality of sounds* or has nothing to do with the tone, is not realistic, and at the same time I do hope that we have courage enough to realize a new adequate system of notations.

## DISCUSSION

### *Carnochan:*

It is useful to distinguish at least two levels of statement here, one for the phenomena, where durations are measurable in centiseconds, and the other for the phonological abstractions. In calling out "Breakfast!" however long one holds on to the first vowel, it cannot be long in quantity. For English, it is the quality that is more important for such distinctions as  $i/I$ , while different durations for both vowels in different phonetic environments need to be systematized as well, e.g. for heed/heat and hid/hit.

### *Slis:*

The question whether duration is the most important cue in the distinction between so called long and short vowels will be dependent on the language studied. For Dutch for instance it is possible to prove, with synthetic steady state vowels, that a difference in duration only, can cause a change in vowel perception; e.g. a long stimulus with  $F_1 = \pm 400$  Hz and  $F_2 = \pm 2500$  Hz is perceived as [e]; a short one of the same spectral composition as [ɪ].

### *Onishi:*

a) *On the Duration of Time*, the definition of "Phone" viz. "unit of speech sound" is firstly important. Ordinary, phonetic symbols represent it. And, deliberate or exceptional physiological emitting of sounds has to be excluded.

b) *Long & Short Vowels*, found in for example Indian or Greek languages are the matter of the so-called Phonology, and not of modern scientific phonetics. Again, strictly speaking, there are no pure long vowels.