

[ə] and Contracted Forms*

A description of [ə] in the entire English vowel system and
about the role of [ə] for making contracted forms stable

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Part I : A description of [ə] in the entire English vowel system

(1) [ə] is the key element for describing the entire vowel system of English.

Though [ə] is shown by one phonetic symbol, it is difficult to understand [ə] on the same level as other phonemes. It is organically connected with English rhythm, stress, etc. It can be the key to solve various problems concerning vowel structure and sound system of English. Further consideration of [ə] may lead to a reconsideration of the entire vowel system of English.

One of the reasons we cannot teach English pronunciation well in Japanese schools would be that the physical characteristics of [ə] are very difficult to understand and to explain. Also, it has not been well analysed phonetically and phonologically. One of the future tasks for phoneticians and English teachers will be how to describe [ə] in the entire English vowel system.

(2) [ə] does not fit in the vowel category defined by general phonetics.

In general phonetics, each vowel is described and categorized by the position of the tongue in a two-dimensional space (front & back/high & low), and the shape of the lips. By using this two-dimensional category, they succeeded in presenting vowels in different languages of the world in the same category. They also succeeded in working out the *International Phonetic Alphabet*, which is indispensable for the study of foreign languages.

However, each language has its own vowel system, and sometimes it has vowels which are difficult to define in the vowel category called for in general phonetics. And [ə] is one such vowel.

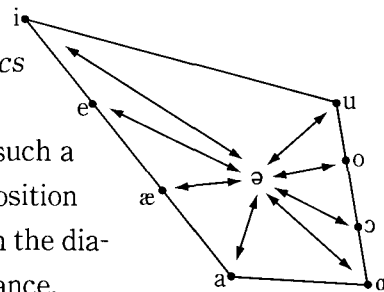
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In English, strength of stress would be one of the most important elements for defining its vowel system. In general phonetics, [ə] is defined in the same way as other vowels, without taking the idea of stress into consideration. We had better define [ə] on a different level from other vowels.

(3) [ə] and peripheral (surrounding) vowels

The idea of *peripheral vowels* is taken from the idea of *cardinal vowels* by Daniel Jones. He defines cardinal vowels as follows : “The cardinal vowels have by definition tongue-positions as remote as possible from ‘neutral’ position.” (Daniel Jones, *An Outline of English Phonetics* [9th edition] p.37)

From the definition above, it is possible to describe such a diagram as shown on the right, in which [ə] has its position in the center being surrounded by peripheral vowels. In the diagram, [ə] and peripheral vowels have a reciprocal balance.



Let's imagine something made of rubber. When the rubber is pulled from one direction, it will be twisted to that direction. When we put no power to it, it will retain its original shape. Peripheral vowels are as if they are in a state of rubber pulled from one direction ; and [ə], in a state of rubber when no power is put on it. It will be recognized by this imaginative description that the muscle of lips and tongue for pronouncing [ə] are without tension and relaxed ; and, from the aspect of dynamism, this state of the muscle is very natural and flexible.

By this model, we can explain many phenomena concerning [ə] : for example, the fact that [ə] appears most frequently among all kinds of vowels, and the fact that there are many diphthongs produced by the combination of [ə] and some peripheral vowel.

What we have to take notice here is that this is a successive phenomenon. There is theoretically a succession of an infinite number of intermediate vowels between [ə] and each peripheral vowel. There may be cases when it is difficult to decide which vowel is [ə] and which vowel is a peripheral one.

There are correlations between each phenomenon mentioned in Part I , which can be summed up as follows :

English rhythm

↔ stress (strength of sound)

↔ tension and relaxation [of muscles] of lips and tongue

↔ reciprocal balance between [ə] and each peripheral vowel

Part II : [ə] makes contracted forms stable by forming CV.

(4) [ə] forms CV structures in English.

According to the phonological analysis by structural linguists, the smallest unit of linguistic sound is a phoneme. But the ultimate sonority unit (the most prominently perceived linguistic sound unit) would be syllables.

Among various patterns of syllables, the most stable one is CV (one consonant + one vowel), which is the typical syllable pattern in Japanese. There is no succession of consonants and every consonant is supported by a vowel in Japanese (i.e. open syllable).

In English, more than one consonant appears in succession and there are more and various syllable patterns than found in Japanese. Even in English, it seems, the most stable syllable pattern is CV, and sometimes a [ə] is added after a consonant to make that consonant more stable, as shown in the following examples below.

Ex. dwarf [dwɔ:f] → [dəwɔ:f] twice [twais] → [təwais] small [smɔ:l]
→ [səmə:l] Here, [ə] has the function of avoiding unstable succession of consonants.

(5) [ə] and contractions

English sound, when pronounced quickly, may sometimes change its form according to certain patterns. The focus is on function words. This phenomenon is called contraction.

In the case of dwarf [dwɔ:f] → [dəwɔ:f] etc., the pronunciation is slow. In contraction, the pronunciation is quick. One of the purposes of constructing contracted forms is to save time and energy.

What is noteworthy is that contracted forms are supported by grammatical structures. In ultimate contracted forms (there are sometimes several different stages of contracted forms for the same original form), the minimum essential is left. At times, this minimum essential is formed by [ə]. In this sense, [ə] has a lot to do with the formation of contracted forms. Let's see how original forms can be traced back, by taking notice of [ə]s in contracted forms.

Ex. You should have come to the party.

[ju: ʃudə]

In the above example, "should have" will be pronounced:

[ʃud həv] → [ʃu'dəv] → [ʃu də]

We can consider that “have” became ultimately to be pronounced by the sound [ə]. In this case, [ə] will not be deleted (i.e. [ʃudə] will not become [ʃud]) no matter how fast the sentence is pronounced. This is because [ə] is the ultimate element to distinguish “You should have come.” (past event) from “You should come.” (present event).

Ex. It's kind of windy today.

[kaɪndə]

In this example, [ə] represents “of”.

Ex. What <u>do you</u> do ?	→	Wha'cha do ?
What <u>are you</u> doing.	→	Wha'cha doing ?
What <u>have you</u> been doing ?	→	Wha'cha been doing ?

	↗	[t] + do you
[tʃə] → [t] + [jə]	→	[t] + are you
	↘	[t] + have you

In those contractions above, “do you”/“are you”/“have you” are all pronounced by the same sound. What distinguishes those three sentences is the succeeding parts of each sentence (do ?/doing ?/been doing ?), rather than [tʃə] itself.

We have seen that the minimum essential in a contracted form is made by the help of [ə]. [ə] represents “have” on one occasion, “of” on another occasion. However, it is not that we hear [ə] itself for many different meanings, but that we decide the meaning of [ə] by hearing sounds other than [ə], recognizing the total structure of the utterance, greatly assisted by grammatical structures.

(6) [ə] is 「間 (ma)」.

“Ma” is a Japanese word meaning a short time span. The English translation will be: interval, pause, timing, etc. What is important about “Ma” is that it is meaningful because it is vacant.

In the traditional Japanese room, we have 「床の間 (Tokonoma)」. It is “an alcove in a Japanese house for the display of a flower arrangement or a hanging scroll of calligraphy or painting” (*Kenkyusha's LIGHTHOUSE Japanese-English Dictionary*). “Ma” is a vacant space or time, which is significant because of its vacancy.

We should recognize [ə] in a quite different way from other vowels. It would be difficult to define [ə] by the phonemic analysis by structural linguists, based on minimal pair and complementary distribution. If [ə] was to be admitted as a phoneme, it would have too many different meanings for one phoneme and that is theoretically impossible.

[ə] should not be recognized as one of the phonemes defined by structural linguists but rather as “Ma”. On one occasion, it is a “Ma” for supporting a consonant for better sonority. On another occasion, it is a “Ma” to prove that there was a certain function word there. We have seen, in section (5), [ə] represents “have” and “of”. In “going to” [gənə] and “want to” [wənə], which are very popular contracted forms, [ə] represents “to”.

[ə] is often used for making weak forms (of function words).

Ex. am [æm → əm], them [ðem → ðm → əm], from [fram → frəm], my [mai → mæi → mə], should [ʃud → ʃəd], do [du: → du → də], and [ænd → ən], you [ju: → jə], can [kæn → kən], at [æt → ət], was [waz → wəz], of [av → əv → ə]

There are even phoneticians who remark that almost all unstressed English vowels can be pronounced by [ə]. (cf. A.C.Gimson, *An Introduction to the Pronunciation of English*)

Japanese tend to try to hear every vowel equally. In other words, when we speak or hear Japanese, we tend to put equal semantic weight on each vowel. When we speak English, it is recommended that we pronounce stressed vowels more exactly and clearly than unstressed ones. English [ə] should be pronounced, I dare say, rather loosely and vaguely. When we listen to English, we should focus on stressed vowels, paying more attention to them. This is how we should manage the stress-timed rhythm of English when we speak and hear English.

(7) CV structures that are formed to make contractions stable

Following examples are shown to explain how CV structures are formed to make contractions stable. Pronunciation is shown in square brackets for each example and the one on the right side of each arrow shows that of the contracted forms. Syllable structures are analysed by using C and V as shown on the right in round brackets. As explained in section (4), CV structure is the most stable syllable pattern and it is very clear from the analysis in round brackets that, when contracted forms are made, the combination of C and V are changed to make more CV structures.

Ex. want to [want tə] → [wənə] ([CVCC+CV] → [CV+CV])

Ex. going to [gouɪŋ tə] → [ganə] ([CV+VC+CV] → [CV+CV])

Ex. should have [ʃʊd həv] → [ʃudə] ([CVC+CVC] → [CV+CV])

Ex. Let me [let mi] → [lemi] ([CVC+CV] → [CV+CV])

Ex. Well, I'd like to, but I'll be busy.

[bət aɪl bi bi:zi] → [bə dail bi bi:zi]

([CVC+VC+CV+CV+CV] → [CV+CVC+CV+CV+CV])

Ex. What time do you get out of school ?

[get áut əv sku:l] → [ge táu təv sku:l]

([CVC+VC+VC+CCVC] → [CV+CV+CVC+CCVC])

Ex. I'll be hére, but could you please call first ?

[bət kud ju:] → [bəkudʒu]

([CVC+CVC+CV] → [CV+CV+CV])

Ex. What tíme do you want me to be thére ?

[du: ju: want mi tə bi] → [jəwamidəbi]

([CV+CV+CVCC+CV+CV+CV] → [CV+CV+CV+CV+CV])

Ex. Why don't you come on óver ?

[dount ju: kəm ən óuvə] → [don tʃə kəmənóuvə]

([CVCC+CV+CVC+VC+V+CV] → [CVC+CV+CV+CV+CV+CV])

Ex. I am going to write a letter. → I ganna write a letter.

[ai əm gouɪŋ tə rait ə létər] → [ai ganə raitə létə]

([V+VC+CV+VC+CV+CVC+V+CV+CV] → [V+CV+CV+CV+CV+CV+CV])

N.B. [dail] (CVC) and [sku:l] (CCVC) end by the sound [l], and [təv] (CVC) ends by [v]. Though [l] and [v] are classified as consonants, they are of high sonority and are akin to vowels as far as sonority is concerned.

Conclusion

As often remarked, Japanese students generally do not have good command of English sound system. The sound system and rhythm of English is quite different from those of Japanese. One of what English teachers can do for improving students' ability for speaking (pronouncing) and hearing English will be, I think, to give them knowledge about [ə] in connection with English rhythm system.

There is a problem that [ə] has not been well analyzed in traditional general phonetics. It will be necessary to reform the traditional paradigm for the analysis of English vowel system defined by general phonetics. (Part I (2))

My suggestion is to present [ə] in reciprocal balance with peripheral vowels. By this consideration, we can recognize the characteristics of [ə] and its diverse roles in English vowel system. For better understanding and for giving students the more concrete image of [ə] and its relationship with peripheral vowels, an image of some stuff made of rubber is used. (Part I (3))

Another point to be emphasized about the role of [ə] is that it makes contracted forms stable by forming CV, which is considered to be a very stable syllable pattern. (Part II (7))

The characteristics and functions of [ə] are quite different from other vowels. Taking account of its close relationship with the stress-timed rhythm of English, its appearance more frequent than any other vowels, and its important role for producing weak forms and contracted forms, it will be reasonable, as suggested in Part II (6), to observe and comprehend [ə] in a different way from other vowels and even to take it out of the traditional category of phonemes. It might be too audacious to treat [ə] in a different dimension from other vowels. But I think this is a necessary reformation of paradigm for understanding the English sound system and recognizing the big discrepancy between English and Japanese sound system.

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