

OJAD: a Free Online Accent and Intonation Dictionary for Teachers and Learners of Japanese.

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Abstract

We developed the very first online and free framework for teaching and learning Japanese prosody including word accent and phrase intonation. This framework is called OJAD (Online Japanese Accent Dictionary) [1], which provides three functions. Subjective assessment by teachers shows very high pedagogical effectiveness of the framework.

Index Terms: language education, Japanese prosody, accent sandhi, OJAD, TTS synthesizer, assessment experiment

1. The three functions of OJAD

1.1. Comprehensive illustration of accent changes

Japanese is a pitch accent language and along with the conjugation of verbs and adjectives, their accent patterns also change regularly and systematically. If a learner desires to speak sounding not foreign accented, he or she will need to follow the accent rules. However, as existing word dictionaries merely list Dictionary Form before conjugation of a verb/adjective, and even accent dictionaries just describe the accent rules of conjugation with a few samples at the end, learners don't have accessible resource at present. Therefore, we realized a system that can show the accent changes due to conjugation of these words. Users type verbs and/or adjectives of interest to know their accent changes. Here, twelve kinds of fundamental conjugation were adopted and their accents are displayed in a table. Fig. 1 shows an example. Seven widely-used textbooks were selected and all the verbs and adjectives found in them were manually extracted.

Figure 1: Illustration of the accent patterns of conjugated forms

1.2. Illustration of the accent of long verbal expressions

The first function only shows the accent patterns of the twelve fundamental conjugated forms of verbs and adjectives. Since Japanese is an agglutinative language, a verb can be combined with multiple postpositional and auxiliary words.

So, we developed another system as a second function to show the accent pattern of a given long verbal expression. Fig. 2 shows examples of two accent groups found in Japanese verbs and the accent of the user's input in the right red rectangle.

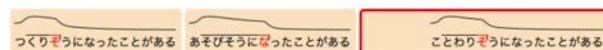


Figure 2: Illustration of the accent patterns of long expressions

1.3. Illustration of the pitch pattern of any input sentence

The first and second functions only focus upon verbs and adjectives. Word accent changes are not only found in these words but also in other words such as nouns. So, as a third function, we developed a prosodic reading tutor to support learners by presenting the pitch pattern of an any given sentence.

This function is realized easily by using several internal modules developed for TTS synthesizers. Three analyses of morphological analysis, accent phrase boundary detection, and accent nucleus location are run for each phrase. An example is shown in Fig. 3.

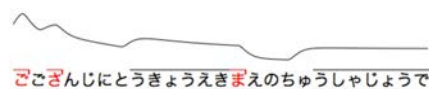


Figure 3: Illustration of the pitch pattern of the part of a sentence

2. Subjective assessment

We asked teachers of Japanese to join a subjective assessment test after learning how to use OJAD. Eighty teachers joined the test, two thirds of whom were teaching Japanese outside Japan. Although the subjective assessment was composed of a series of questionnaire items, we show in Tab. 1 the results of only two fundamental questions: a) How useful do you think the system is for learners? and b) Do you want to use the system in your class? Considering that teaching Japanese prosody is just only one aspect of Japanese language education, we consider that the eighty teachers of Japanese recognize very high pedagogical effectiveness of the proposed framework.

Table 1: Assessment of the three proposed systems (%)

a) How useful do you think the system is for learners?			
	1st system	2nd system	3rd system
Very useful	71.0	54.8	62.7
Rather useful	29.0	45.2	28.8
Not so useful	0.0	0.0	8.5
Not useful at all	0.0	0.0	0.0

b) Do you want to use the system in your class?			
	1st system	2nd system	3rd system
Yes, definitely	38.7	29.0	42.6
Yes, if needed	59.7	64.5	50.0
No	1.6	6.5	7.4

3. References

- [1] OJAD: <http://www.gavo.t.u-tokyo.ac.jp/ojad/>