

1 Introduction

This paper is based on research dedicated to the improvement of teaching and learning English intonation for Japanese EFL learners. Through experiments of fundamental frequencies (henceforth Fx) using the Laryngograph Processor, a computer-operated machine for extracting Fx, which enables us to see the physical counterpart of our own pitch contours, that is, interactive visual feedback of our own intonation, in real time. This paper outlines three of the weak points Japanese EFL learners have in English intonation.

2 Subjects, material and method

In this experiment, 200 college EFL learners, who have taken a course of English Phonetics, have been used as subjects. They were asked to read aloud ten conversations that are shown below, and their utterances were analysed by the Laryngograph Processor. The ten conversations (with the correct nucleus in the final line of each conversation italicised) are as follows:

- (1) A: Is this your first visit to Japan?
B: No, this is my *second* visit here.
- (2) A: I am eighteen.
B: I thought you were *nineteen*.
- (3) A: Shall we meet at 3:30?
B: Let's make it *4:30*.
- (4) A: He came to Japan in 1989.
B: Then he came again in *1999*.
- (5) A: She is a very good actress?
B: She is an *excellent* actress.
- (6) A: Did she win the Silver Medal?
B: She won the *Gold* Medal.
- (7) A: Did it rain this morning?
B: Yes, it did.
A: I *thought* it would.

3.1 Narrow pitch range

The first and foremost weak point of Japanese learners in English intonation is the narrow pitch range. The Fx range used by the majority of the subjects was from about 200Hz to about 250Hz. The range of some was even narrower. Although some subjects ranged from about 200Hz to 300Hz, very few used a pitch range wider than that. The use of narrow pitch ranges is not too serious a problem, because more important aspects of intonation are tone, tonicity and tonality.

3.2 Accenting old information

The second weak point that has been observed in the experiments conducted with the Laryngograph Processor is that Japanese learners tend to accent old information. In other words, they often fail to de-accent old information. In this experiment, the last line of each conversation was analysed in order to examine how the subjects would take the previous context into consideration. The syllables where the majority of the subjects placed the nucleus are underlined in the following script:

- (1) A: Is this your first visit to Japan?
B: No, this is my second visit here.
- (2) A: I am eighteen.
B: I thought you were nineteen.
- (3) A: Shall we meet at 3:30?
B: Let's make it four thirty.
- (4) A: He came to Japan in 1989.
B: Then he came again in nineteen
ninety-nine.
- (5) A: She is a very good actress?
B: She is an excellent actress.
- (6) A: Did she win the Silver Medal?
B: She won the Gold Medal.
- (7) A: Did it rain this morning?

As shown in the Table in 4, the results show the tendency of Japanese learners to put the nucleus on the final word in each utterance or word group. This may suggest that either the majority of the subjects do not take the previous context into consideration or even if they do take the previous context into consideration, they do not de-accent the old information, probably because old information is not always de-accented in Japanese. For (8), the final word happens to be the correct place of nucleus, and therefore, a majority of the subjects succeeded in correct nucleus placement here, but it may not mean that they knew with confidence it should be there. It can be said because a majority of the subjects placed the nucleus on the final word in (7) as well, which happens to be incorrect nucleus placement. Most students seemed to place the nucleus on the final word whatever the context.

3.3 Interference from Japanese intonation

Even when Japanese EFL learners do take the previous context into consideration, it may not always lead to correct nucleus placement in their English intonation. This may be caused by the differences in the way of accentuation between English and Japanese. In the underlined syllables in the above conversations, a majority of the subjects seemed to use either a high fall or low fall nucleus, but most of them also used a *high level pitch* on the words that would normally contain the nucleus if uttered by a native speaker, as shown in the Table in 4. This *high level pitch* may be the way the Japanese learners were trying to highlight the new information. Therefore, their nucleus placement on the wrong syllable may have been due to the interference from the Japanese way of highlighting new information and their inability to change the Japanese way to the English way. A majority of the subjects used a *high level pitch* on each of the italicised syllables as shown in the following script:

- (1) A: Is this your first visit to Japan?
B: No, this is my *second* visit here.

- (6) A: Did she win the Silver Medal?
B: She won the *Gold Medal*.
- (7) A: Did it rain this morning?
B: Yes, it did.
A: I thought it would.
- (8) A: Would you like some coffee?
B: No, thank you.
A: I thought you would.
- (9) A: Do you export beer?
B: No, we *import beer*.
- (10) A: Did she thank you?
B: I *thanked her*.

Those subjects who used a *high level pitch* on the italicised syllables may have been aware of the old and new information and trying to highlight the new information by using the *high level pitch*. This may be said about (1), (3), (5), (6) and (9).

For (1), the correct nucleus placement would be on the first syllable of “second,” but 78.5 % of the subjects used a *high level pitch* on “second.” For (3), the correct nucleus placement would be on the word “four,” but 77 % of the subjects used a *high level pitch* on “four.” For (5), the correct nucleus placement would be on the first syllable of “excellent,” but 63 % of the subjects used a *high level pitch* on “excellent.” For (6), the correct nucleus placement would be on the word “Gold,” but 78 % of the subjects used a *high level pitch* on “Gold.” For (9), the correct nucleus placement would be on the first syllable of “import,” but 11 % of the subjects used a *high level pitch* on the word “import” and 66 % of them on the second syllable of “import,” which may mean that few students knew that it was possible to change the place of lexical stress due to contrastive stress.

English intonation, focusing on compounds. The interference may be found not just in compounds but in any part of the utterance, especially where nucleus placement is relevant, due to the different ways of highlighting new information between English and Japanese.

4 Statistics

Table: Japanese EFL Learners' English Intonation (Real Number out of 200)									
(1) A: Is this your first visit to Japan?									
B:	No,	this	is	my	sec	ond	vis	it	here
Nucleus	2				23		2		178
High Level Pitch					157				
High Level Pitch					7				
(2) A: I am eighteen.									
B:	I	though	you	were	nine	teen.			
Nucleus	7	3	8		85	117			
High Level Pitch		1			2				
(3) A: Shall we meet at 3:30?									
B:	Let's	make	it	four	thir	y.			
Nucleus				26	169	4			
High Level				154					

actress?										
B:	She	is	an	exc	el	lent	ac	tress		
Nucleus				66			149			
High Level Pitch				126						
(6) Did she win the Silver Medal?										
B:	She	won	the	Gold	Med	al.				
Nucleus				37	164	2				
High Level Pitch				156						
(7) A: Did it rain this morning?										
B: Yes, it did.										
A:	I	though	it	would						
	t			.						
Nucleus	27	9		195						
High Level Pitch	13	67								
(8) A: Would you like some coffee?										
B: No, thank you.										
A:	I	though	you	would						
	t			.						
Nucleus	29	8	6	194						
High Level Pitch	10	66								
(9) A: Do you export beer?										

Nucleus	24	26	160							
High Level Pitch	3	141								

5 Conclusion

This paper examined three of the weak points Japanese EFL learners have in English intonation: narrow pitch range, accenting old information, and interference from Japanese intonation. Narrow pitch range is not a serious problem, because more important are tone, tonicity and tonality. Nonetheless Japanese learners may well be encouraged to speak English more confidently, using wider pitch ranges as well as clearer pronunciation segments.

Accenting old information, or failing to de-accent old information may be caused by the Japanese learners' tendency of accenting the primary lexical stress syllable in the last word in every utterance or word group they utter, thus failing to acknowledge any new information as such wherever they occur. When the new information happens to be the last word in an utterance, it bears the nucleus in a majority of Japanese learners' intonation, but it may not mean that they acknowledge the presence of the new information there.

Interference from Japanese intonation may have caused the subjects to use *high level pitch* on what they acknowledged as new information, and thus where they thought the nucleus should be placed. This *high level pitch* may be one of the ways of highlighting new information or emphasising the important part of the utterance in Japanese, and the subjects may have transferred that method to their English intonation. They were not aware of the different ways of highlighting the new and important part of the message between Japanese and English and just seemed to stick to the Japanese way.

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