

The Acoustical Realization of Narrow Focus and Second Occurrence Focus in Taiwan Mandarin

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According to discourse analysis, given information is not supposed to be a focus, while from the perspective of semantic theory sensitive operators, such as *only*, *are*. For example, in sentence (1) a, adapted from Partee (1999: 215), the word “vegetable” is the item which receives new focus (NF). Therefore, the potential for conflict exists between discourse analysis and semantic theory: the given information is not meant to be a focus according to the former, but it is under a sensitive operator and, therefore, a focus for the latter. A Second Occurrence of Focus (SOF), in which a sensitive operator within semantic theory and carries given information, addresses this conflict. For example, in sentence (1) b, the word “Paul” is the new information with NF, but the given information “vegetable” placed within the domain of focus sensitive operator is proposed to receive SOF. (Fery and Ishihara, 2005)

(1) a. Everyone already knew that Mary only eats [vegetables]F

b. If even [Paul]F knew that Mary only eats [vegetables]SOF, then he should have suggested a different restaurant

According to Beaver, Clark, Flemming, Kaeger, and Wolters (2002), focus in English is marked by a nuclear pitch accent, while SOF is marked by other prosodic cues, such as increased duration and intensity. In addition, Fery and Ishihara (2005) have reported that, in German, the phonetic marking of SOF in duration is revealed postnuclearly, and in contrast to First Occurrence of Focus (FOF), it is realized in different ways. The convention FOF and NF mentioned above have the same definition in this paper. Finally, the term FOF is used hereafter to make a clear and simple comparison with SOF.

Xu (1999) found that the duration of the target syllable under focus increased and the F0 range expanded under different focus condition. Under one condition the F0 high points were

found to be higher while the F0 low points were lower in non-final focused words. However, Hsiung (2002) has reported that duration, which increased under narrow focus, is the most salient acoustic parameter for sentence focus in Taiwan Mandarin. Moreover, Hsiung also found that speakers of Taiwan Mandarin do not always expand the F0 range significantly under narrow focus, unlike Mandarin speakers on Mainland China in the research conducted by Xu (1999). Huang (2004) found that durations of target items under narrow focus are extremely longer than their counterparts. Moreover, Huang has suggested that the F0 range might be a salient acoustic cue but not as prominent as duration.

Existing research has not investigated the phenomenon in tone-based languages, such as

Mandarin. Therefore, this study attempts to explore how FOF and SOF are realized respectively and investigate the difference between them by comparing the acoustical realization of lexical items of FOF and of SOF on Object (O) and Verb (V) to their defocused counterparts respectively in Taiwan Mandarin.

Two female native Taiwan Mandarin speakers who speak neither Taiwan Min nor Hakka, two dominant dialects spoken in Taiwan, participated in this experiment. Both of them were undergraduates in National Chao Tung University at the time of the recording.

The sentence structure of the target sentence was “Subject Verb Object” (SVO hereafter). S and O consisted of the same four lexical items carrying four lexical tones, while the other four lexical items with four lexical tones composed V. The lexical tones of the four lexical items were /55+55/, /35+35/, [35+315], and /51+51/. It should be noted that tone

sandhi phenomenon took place in /315+315/. The sensitive operator “only” was placed before either V or O.

There are two SOF conditions, namely (1) “only” placed before V to govern the verb, and (2) “only” placed before O to govern the object. By matching the four lexical items for S, V and O, there were 64 sentences (4 S x 4V x 4O): after excluding the sentences with the same S and O, 48 sentences were left. Again, by matching the two focus conditions with the 48 sentences, then by repeating each sentence six times, there were 576 sentences elicited (48 target sentences x 2 focus locations x 6 repetitions). The same focus conditions could also be found in FOF; therefore, the total number of elicited target sentences was 1152 (576 x 2).

Spontaneous speech was elicited through dialogues describing pictures displayed on a computer screen. In order to elicit interactive conversation from the subjects, this experiment included a program which was designed to simultaneously display five pictures on the computer screen at a time. The experimenter then asked the first question to elicit FOF on the target lexical items. After the subject explicated the first answer, the experimenter proceeded to ask the next question to elicit the second answer with SOF. The following section provides some examples of the sentence structure for the two focus locations:

(1) SOF on V

Question 1. Experimenter: “Among the five pictures, what did the general do to the nerdy today?”

Answer 1. Subject: “The general [followed and arrested]FOF the nerdy today.”

Question 2. Experimenter: “In the other three pictures, the nerdy investigated and released the coach, what did the beauty do?”

Answer 2. Subject: “The beauty only [arrested]SOF the general.”

(2) SOF on O

Question 1. Experimenter: “Among the five pictures, who did the general arrest today?”

Answer 1. Subject: “The general arrested [the nerdy and the beauty]FOF today.”

Question 2. Experimenter: “In the other three pictures, the nerdy arrested the général and the coach, who did the beauty arrest?”

Answer 2. Subject: “The beauty arrested only [the nerdy]SOF.”

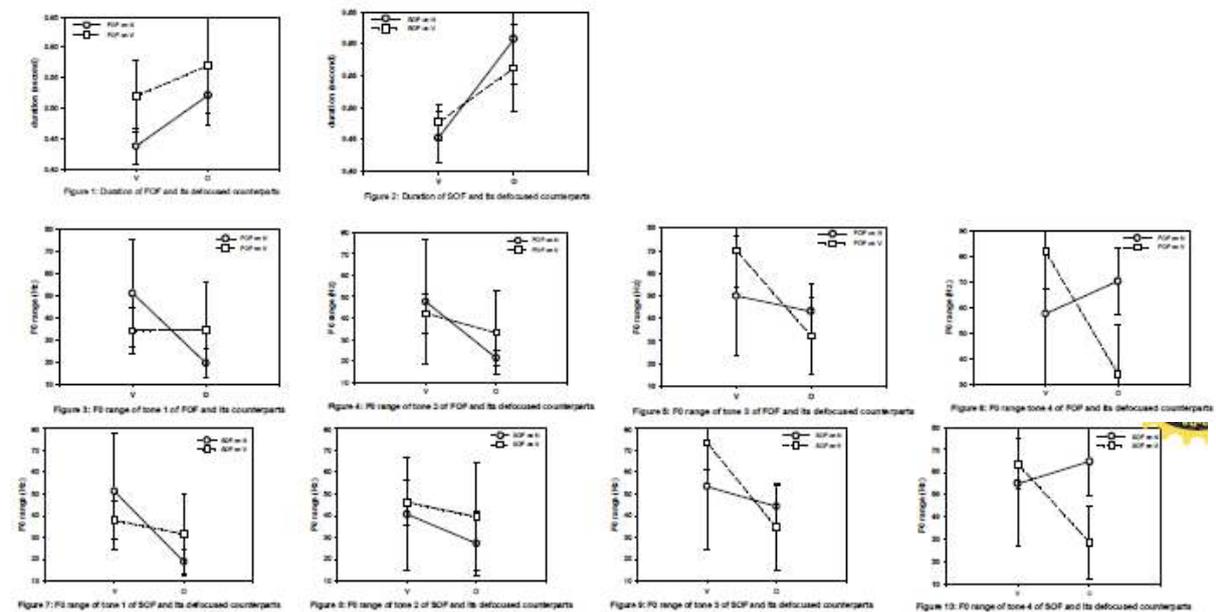
Duration and F0 range data were taken at the points of onsets and offsets of the lexical items for V and O during the target V and O, as were the F0 peaks and F0 valleys. Finally the F0 ranges were derived by subtracting the minimum F0 from the maximum F0 values.

Figure 1 compared the durations of V and O under FOF. The target lexical items under FOF did not bear longer durations than their defocused counterparts, and this result contradicted the reported findings of Xu’s (1999), Hsiung’s (2002) and Huang’s (2004), in which reported that the focused items experienced longer duration than the defocused ones. However, with reference to the F0 range, Figures 3, Figure 4, Figure 5, and Figure 6 all showed that the value of the F0 range of the target lexical items under FOF was larger than their defocused counterparts, and these findings do correspond to those of Xu (1999), Hsiung (2002) and Huang (2004).

As shown in Figure 2, the durations of the target lexical items with SOF on O, and V were longer than those without SOF in the same focus positions. Figures 7, Figure 9, and Figure 10 all showed that the F0 range expanded in the target lexical items of tones 1, tone 3 and tone 4 under SOF. Figure 8, which compared F0 range of tone 2 under SOF, did not show any expansion of the target lexical items.

Preliminary results provided no evidence could be found to support the idea that the lexical items carrying FOF would bear longer duration than their defocused counterparts. This result was surprisingly different from previous expectations. By contrast, the target

lexical items under focus did carry an expanded F0 range. As for the lexical items with SOF, the lengthened duration of the focused lexical items was the most prominent acoustical cue compared to that of their defocused counterparts. The expanded F0 range was also found in target items of tones 1, tone 3 and tone 4 (Figures 7, 9 and 10). In other words, lexical items with given information were indeed “highlighted,” in duration and F0 range, by SOF under the scope of the F-marking operator “only.” As for FOF, the performance of the F0 range for all the lexical items in the same position, without “only,” was quite similar to that of those with SOF. In conclusion, the F0 ranges of FOF and SOF in Taiwan Mandarin perform quite similarly while the duration is quite another story. This result arouses the interest and highlights the need for more data from other subjects to explore how FOF and SOF are realized respectively and to investigate the differences between them. With this mind, more attention should also be given to the work of Vallduvi and Ron Zacharski (1994) in future studies.



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