## Discourse Context, Semantic Markers, and Prosodic Cues of Taiwan Min Narrow Focus and Second Occurrence Focus

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Discourse context and semantic marking are two major factors determining the presence and domain of focus. Within a discourse perspective, the focus condition was determined by comparing the information structures of consecutive utterances within the same discourse context. For example, in the following dialogue (1) Q1: "What is in this picture?" A1: "This is a picture of [forest]NF." Q2: "What is at the left side of the forest picture?" A2: "It is [a bee] NF at the left side of the forest picture." Q3: "Are there bees next to other pictures?" A3: "No, ONLY [at the forest picture's left side]soF was there a bee." The phrase "forest" in A1, with new information under narrow focus (NF) was compared to the phrase "forest picture" in A2 with old information and without narrow focus. In A3, "a bee" carried new information and is under narrow focus. The phrase "forest picture" in A3 carried old information and is not under narrow focus from a discourse perspective. However, this phrase was within the domain of the semantic F-marking operator "ONLY", and thus was viewed as focused from a semantic perspective. Phrases with discourse old information but within the domain of the focus sensitive operator were under Second Occurrence Focus (SOF) condition. Beaver, Clark, Flemming, Jaeger, Wolters (2007) investigated the prosodic cues of English SOF in post-nuclear positions and found that although there was no prosodic marking of pitch accent, SOF was marked with increased lengthening. Furthermore, in a prosodic study, Fery and Ishihara (2009) found that in German SOF was marked with both lengthening and pitch accent. English and German are both intonation languages, and the current study expanded the scope of SOF studies to a tone language, in this case Taiwan Min. According to Pan (2007), lengthening was the major cue to mark narrow focus in Taiwan Min. Because duration was the major cue used to mark narrow focus, it was a puzzle as to what kind of prosodic cue would be used to mark Taiwan Min SOF. If duration was used to mark both narrow focus and SOF, then there might be gradient differences in the degrees of lengthening used to mark narrow focus and SOF. Unlike Beaver et al. (2007), who used read speech, this study investigated Taiwan Min SOF with spontaneous utterances from dialogue elicited through games.

One female and three male native Taiwan Min speakers participated in the experiment. They were students at National Chiao Tung University at the time of the recording. They spoke Taiwan Min, Mandarin and English. The structure of target utterances was "At X picture's Y side, there is a Z object." There were five disyllabic lexical items for X pictures with five different tonal combinations; four lexical items, "top, bottom, left, right" for Y side, seven monosyllabic lexical items with seven Taiwan Min lexical tones for Z objects. Utterances with narrow focus and SOF on either X picture, Y side, or Z objects were elicited through a game in which the experimenter and speakers described pictures displayed at the center or four peripheral corners of the computer screen. The discourse structure of the dialogue was similar to (1). All together 3072 sentences were elicited from each speaker.

The duration of disyllabic lexical items from utterances with narrow focus on either X picture, Y side, and Z objects are shown in Figure 1. Generally speaking, within the same sentence, durations of the narrow focused X picture and Y side lexical items were longer than the nonfocused lexical items in the same sentence. However, such a trend was not as distinctive for narrow focused Z object lexical items. As shown in Figure 2, duration of the

second occurrence focused X picture and Y side lexical items were longer than the nonfocused lexical items in the same sentence. A paradigmatic comparison between the same lexical items under narrow focus and second occurrence focus revealed that generally the extent of lengthening was relatively the same. As shown in Figure 3, excluding the 55 + 55, 53 + 53 tones for X pictures, the lexical item for 'bottom', and the Z object lexical items; the extent of f0 range expansion was larger when the same lexical item was under narrow focus than when it was under second occurrence focus.

In sum, in a sentence, the duration of SOF non-final lexical items with discourse old information but following a focus sensitive operator are longer than nonfocused lexical items. The lengthening for SOF is similar to that of narrow focus. However, the f0 range expansion for non-final SOF is not as great as the duration lengthening for narrow focus. Though F0 range expansion is not a prosodic cue for SOF in post-narrow focus position, Taiwan Min SOF is marked with lengthening. These results agree with the prosodic study on English post-nuclear SOF. It is proposed that discourse context, semantic focus sensitive operator, and prosodic cues all contribute to the marking of second occurrence focus. For future study, Taiwan Min SOF in pre-narrow focus positions should be investigated.

## References

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Figure 1. Duration of nonfocused and narrow focus (filled legend) items.



Figure 2. Duration of nonfocused and second occurrence focused (filled legend) items



Figure 3. F0 range for narrow focused and second occurrence focused items