

Phonetic Correlates of Second Occurrence Focus

In this talk, we investigate the question of whether and how ‘second occurrence focus’ (SOF) is realized phonetically in German. We point out that preceding studies overlooked various phonetic effects that are independently motivated in the SOF sentences, hence failing to have a complete explanation of the SOF phenomenon. We present convincing evidence for the phonetic marking of SOF, and propose a more accurate and complete account for the SOF phenomenon.

The apparent lack of phonetic marking on SOF in sentences like (1b) has raised much discussion on the semantic theory of focus (Partee, 1991; Rooth, 1992), and has become one of the decisive factors for choosing between the ‘strong’ and the ‘weak’ theory of focus. Some researchers have reported the existence of phonetic marking of SOF (Rooth, 1996; Beaver et al., 2004), claiming that SOF is not marked by pitch, but by duration instead, although it is very subtle at best (SOF is on the average 6ms longer than Non-Focus, according to Beaver et al. (2004)). All the studies on SOF, however, overlook certain aspects of the examples they have been investigating. In their examples, SOF always appears at a postnuclear position, i.e., where no pitch accent can appear for an independent reason. That is, the lack of pitch accent on SOF is not due to the lack of F-marking, but due to the phonological condition where SOF appears.

In our experimental study with German sentences, we examined sentences with prenuclear SOF (2b), and those with postnuclear SOF (2c), comparing with their Non-Focus counterparts in (3). We also compared SOF and Non-Focus with first occurrence focus (FOF) in two different locations: sentence-initial (prenuclear) FOF (4) and sentence-medial (nuclear) FOF (2a).

We examined F0 height and duration, the results of which are shown in Fig. 1 and 2, respectively. As for pitch, we found that prenuclearly (Fig. 1, dark bars), a hierarchy in terms of focus types (FOF > SOF > Non-Focus) is observed. That is, FOF is higher than SOF, which itself is higher than Non-Focus. Postnuclearly (Fig. 1, light bars), on the other hand, SOF shows no significant difference from Non-Focus. This means that SOF is in fact phonetically marked by a pitch accent, but only when it is in a position where it can receive one. As for duration, both pre- and postnuclear SOF, as well as FOF, exhibit significant difference from Non-Focus, as in Fig. 2. No significant differences are found between FOF and SOF.

Based on these findings, we propose an analysis of SOF phenomena. We list the relevant factors affecting the phonetic output of SOF sentences, and explain how they interact. First, we propose that focus affects pitch contour with the effects listed in (5). In addition, there are independently motivated phonological effects, as in (6).

The combination of (5a) and (5b) will explain the F0 hierarchy among FOF, SOF, and Non-Focus in the prenuclear environment. FOF is subject to F0-raising (5a), while SOF receives both (5a) and (5b), because SOF is a focus and discourse-given. This combinatory effect of focus and givenness results in a weakly raised pitch accent. Non-Focus is subject to neither of them, hence remaining the lowest. Postnuclearly, deaccenting (6b) bans pitch accentuation on SOF, hence there is no SOF/Non-Focus contrast. FOF is immune from postnuclear deaccenting, since the sentence-medial FOF ((2a); Fig. 1, FOF, light bar) is not a postnuclear element, but a nuclear one. Furthermore, the prenuclear/nuclear contrasts in FOF can be explained by downstep (6a).

As for duration, both FOF and SOF are lengthened by focus (5c). The pre-/postnuclear contrasts observed for FOF and SOF can be attributed to the difference in prosodic phrasing. Sentence-initial (=prenuclear) FOF/SOF tend to form a phonological phrase by themselves, and hence are subject to an additional final lengthening effect (6c). Sentence-medial, (post)nuclear FOF/SOF, on the other hand, are incorporated in a larger phonological phrase. Therefore they only receive focus-driven lengthening. Non-Focus is irrelevant for these lengthening effects, since they are not focused and do not form a phonological phrase themselves.

As shown above, some focus-driven phonetic effects are masked or enhanced by additional phonologically-driven effects. As a result we observe more varieties in the output than we would expect if we only assumed focus-driven effects. Only by taking these effects into consideration, can we comprehend the phenomena.

- (1)
 - a. Eva only gave xerox copies to the [GRADUATE]_F students.
 - b. No, PETR_F only gave xerox copies to the [GRADUATE]_{SOF} student. (Partee, 1991)
- (2)
 - a. Viele Frauen haben mehrere Verwandte zum Dorffest eingeladen.
‘Many women have invited several relatives to the village fair.’
Aber Eva hat nur [ihren Bruder]_{FOF} eingeladen. ‘But Eva only invited [her brother]_{FOF}.’
 - b. Nur [ihren Bruder]_{SOF} hat auch [Maria]_F eingeladen.
‘Only [her brother]_{SOF}, also [Maria]_F invited.’
 - c. Auch [Maria]_F hat nur [ihren Bruder]_{SOF} eingeladen.
‘Also [Maria]_F only invited [her brother]_{SOF}.’
- (3) Wer hat ihren Bruder eingeladen? ‘Who invited her brother?’
 - a. [Ihren Bruder]_{NonF} hat [Eva]_F eingeladen. ‘[Her brother]_{NonF}, [Eva]_F invited.’
 - b. [Eva]_F hat [ihren Bruder]_{NonF} eingeladen. ‘[Eva]_F invited [her brother]_{NonF}.’
- (4) Die meisten unserer Kollegen waren beim Betriebsausflug lässig angezogen.
‘Most of our colleagues were dressed casually at the staff outing.’
Nur [Peter]_{FOF} hat eine Krawatte getragen. ‘Only [Peter]_{FOF} wore a tie.’
- (5) Focus-driven effects
 - a. F0-raising by focus
 - b. F0-lowering by givenness
 - c. Duration-lengthening by focus
- (6) Phonologically-driven effects
 - a. Downstep of non-initial accents
 - b. Postnuclear deaccenting (no accent is realized postnuclearly)
 - c. Final lengthening in phonological phrases

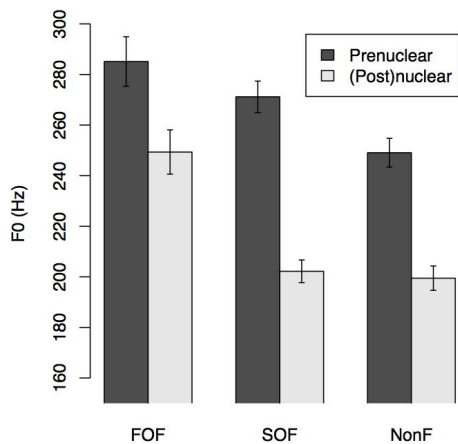


Figure 1: Mean F0 (with 95% CI)

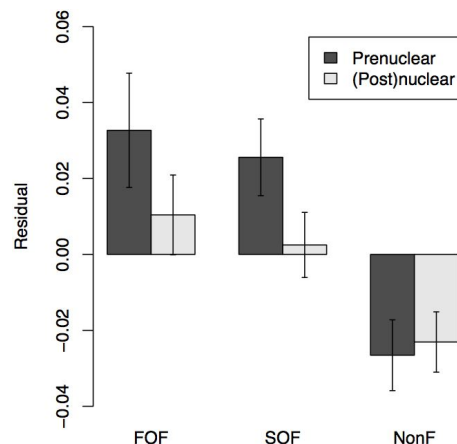


Figure 2: Mean residual duration (w/ 95% CI)

References

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