However, the data also reveal that it is well possible for a speaker not to apply duration as a prosodic device for marking corrective utterances. Notably, the same speaker (ZJ) also minimally narrows the pitch span under A-COR (besides HY; cf. Figure 7, Table 2 in the previous section). Thus, supposing that prosodic prominence is mainly achieved by means of expanding F0 range, increasing F0MAX, as well as lengthening of the temporal dimension of the marked element, it is apparently not compulsory for speakers to render A-COR prominent. Rather, there is a tendency to increase durational length, while F0 either stays unaffected or is adjusted to a lower level.

In the next section, we shall see that the durational adjustments as observed here, as well as F0 lowering is not limited to the A-COR focused item alone.

3.1.3 pre-NF vs. pre-A-COR

In section 3.2.1, we saw that F0 level has been lowered by the speakers in A-COR, while the F0 span has not undergone significant adjustments. At the same time, speakers tend to lengthen the focused lexemes under A-COR – however, this tendency is not as robust as the F0 lowering such that the effect on duration is slightly beyond statistical significance. Thus, speakers obviously do not necessarily highlight the A-COR focused item by means of consistent durational lengthening or pitch span modifications. Instead, they even lower the prosodic salience to a certain extent. This raises the question as to whether speakers really do not feel the need to highlight the A-COR focused lexeme, or whether the lowering is also a way to render the lexeme salient, in that a lower pitch sounds distinct from NF. Similarly, one might assume that the lowering is a somewhat indirect highlighting of the focused item in that the post- or pre-focal material is adjusted in F0. More specifically, one could imagine different degrees of PFC after the A-COR lexeme (post-A-COR) relative to the post-focal NF (post-NF). For instance, post-A-COR elements could be realized with even narrower F0 span or lower F0 level than post-NF items, thus rendering the A-COR more prominent in an indirect way. However, as we noticed in Figures 10 to 12, the post-focal pitch level seems to reach the same level in both conditions. Due to the heterogeneity of the data a measure of the post-focal pitch values would result in less accurate figures – there is some variation as to the exact wording following the unit *[TARGET NAME] you3* ('NAME have/exist'), as well as variation with regard to prosodic phrasing, among other things. Apart from that, it is generally problematical to obtain reliable F0 near the end of an utterance, since there is a great deal of creakiness on those lexemes – both on focused and post-focal syllables. For these reasons, it is little reliable to take data from utterance-final regions as a basis for statistical analyzes, regardless of the IS of these lexemes.

What we can do instead, is examining the pre-focal areas (hence, pre-A-COR vs. pre-NF) to find out, whether or not the pre-A-COR material differs in prosody from the pre-NF elements. Although, as outlined in section 1.2.2, there has not been found much meaningful variation on pre-focal material with respect to narrow Object-focus vs. broad or no-focus, there is yet some variation possible, as can be deduced from Jin´s (1996) data. Furthermore, as mentioned in section 1.2.1, Baumann et al. (2006) take into consideration that in German, pre-focal accents may render the following contrastive focus accent more prominent. Similar aspects hold for duration, although duration might be less meaningful here: similar to p-phrasing, there may be several reasons for lengthening a pre-focal element which are not directly related to focus such as planning the correct answer during speech.

By inspecting the pre-focal data I mainly want to get further insights as to whether the F0 lowering on the A-COR lexemes is a local phenomenon, or rather a global effect. That is, if, for instance, the pre-A-COR material is prosodically not distinct from pre-NF, the F0 lowering as found in section 3.1.1 could be assumed to be a local effect, and there would be good reason to assume that the F0 lowering is directly related to A-COR. One could, in turn, argue that speakers lower the F0 register presumably in order to render the A-COR prosodically distinct in terms of a lower pitch.

If, on the other hand, the pre-A-COR material is likewise lowered, the reasons for the lowering are less straightforward. On the one hand, this could be some indication that speakers try to render the A-COR material on the Object prominent in an indirect way, i. e., by means of adjusting the prosody of the pre-A-COR lexemes. On the other hand, such pre-focal lowering could be caused by co-articulation: Note, the A-COR sentences (as well as the P-COR, see section 3.2) are mostly preceded by a short expression of negation (cf. section 2.2). These expressions are usually *bu4* (NEG), *bu4 shi4* (NEG COP) or *mei2 you3* (NEG exist), respectively, all ending on L (including *mei2 you3*, since the final T3 has not been realized by the speakers with an additional rise; cf. section 1.2.2). Although the negations are usually separated from the following utterances by means of some sort of intonational boundary (ip or IP), there might be a lowering effect on the tones following the negation. Tao (1996) notices that even a new major IP may start on a slightly reduced pitch level than the foregoing IP. Such kind of downtrend is apparent between several IP´s as long as they are part of a single "declination unit" (DU; p. ...). That is, even a major IP boundary does not necessarily guarantee a restart of the F0 to an equally high pitch level as realized at the beginning of the preceding IP. Applied to our situation, it means that the target lexeme may start on a slightly reduced pitch level than the preceding IP, which is the negation. The lowering effect might then be further encouraged by the final L of the expression of the negation. Therefore, we are presumably not able to give a concluding answer about the exact reasons for the F0 lowering on A-COR or pre-COR lexemes, but we may gain some links as to the question whether or not the lowering is a direct and local manifestation of A-COR.

As already mentioned in section 2.2, the pre-focal material were the grammatical Subjects of the clauses preceding an Object-focus. In a repeated measures ANOVA with the factors FOCUS (two levels: pre-NF, pre-A-COR) and TONE (see above), and the same variables as in the previous sections, FOCUS yielded a (highly) significant lowering effect on both F0MIN and F0MAX, but no effect on SPAN (there is a slight lowering of SPAN but it is not significant). More specifically, the mean values were as follows: MIN: 227.68 Hz / 93.91 st (pre-NF) vs. 216.77 Hz / 93.06 st (pre-A-COR), p = .002/ .003[49]; MAX: 276.66 Hz / 97.25 st (pre-NF) vs. 262.7 Hz / 96.37 st (pre-A-COR), p = .002/ .002; SPAN: 48.98 Hz / 3.35 st (pre-NF) vs. 45.93 Hz / 3.31 st (pre-A-COR), for both $p > .05$. That is, similar to what could be observed for A-COR in section 3.1.1, we have a robust lowering of the F0 register on the pre-focal Subjects when the Objects are in A-COR focus (relative to NF). The F0 span, on the other hand, remains largely unaffected, the slight narrowing effect is clearly not significant. The following illustrations will demonstrate those tendencies. Figures 16 and 17 show the pitch span among all three tone constellations. Note, the scaling in Figure 16 is equal to Figures 4 and 5 where the focus conditions NF and A-COR have been demonstrated. Not surprisingly, it becomes obvious that the focused Subjects are realized in wider pitch spans than the pre-focal ones in Figure 16. In Figure 17, it becomes particularly apparent that the slight lowering of the F0 as indicated by the mean values (cf. above) is not at all a consistent phenomenon among the target tones. While T3.T2 (gray dotted line) shows a slight narrowing tendency, T4.T4 (light gray dashed) is narrowed considerably stronger, whereas, on the other hand, T2.T2 (black solid) undergoes span expansion. Speakers...

49 The notation may be henceforth limited to the p-values, see the Appendix for more details. Here, the first p-value refers to the differences measured in Hz, the second refers to the st-values.