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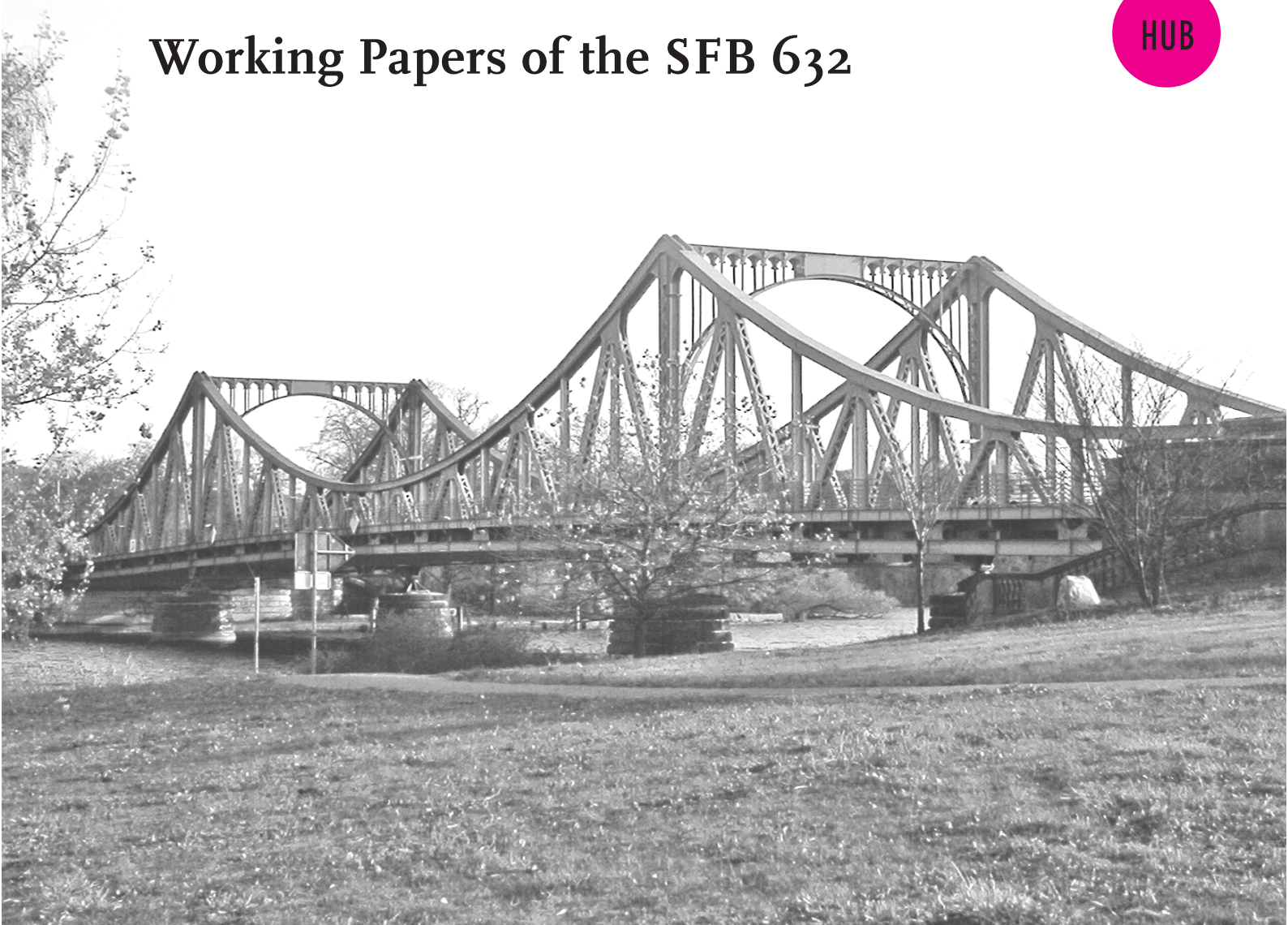
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Shinichiro Ishihara, Anne Schwarz (eds.)

Interdisciplinary Studies on Information Structure

Preface

The 10th volume of the working paper series *Interdisciplinary Studies on Information Structure* (ISIS) of the SFB 632 contains two papers contributed by SFB-members. The issue offers insights into current work conducted at the SFB 632, comprising empirical and theoretical aspects of Information Structure.

The first paper "Single prosodic phrase sentences" by **Caroline Féry (A1) & Heiner Drenhaus (C6, University of Potsdam)** investigates the prosody of Wide Focus Partial Fronting in a series of production and perception experiments.

The second paper "Focus Asymmetries in Bura" by **Katharina Hartmann, Peggy Jacob (B2, Humboldt University Berlin) & Malte Zimmermann (A5, University of Potsdam)** explores the strategies of marking focus in Bura (Chadic).

We thank all reviewers for fruitful comments and Anke Gehrlein, student assistant of B4, for her help during editing this issue.

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Shin Ishihara
Svetlana Petrova
Anne Schwarz

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Contents

Single prosodic phrase sentences [*]

Caroline Féry and Heiner Drenhaus

University of Potsdam

A series of production and perception experiments investigating the prosody and well-formedness of special sentences, called Wide Focus Partial Fronting (WFPF), which consist of only one prosodic phrase and a unique initial accented argument, are reported on here. The results help us to decide between different models of German prosody. The absence of pitch height difference on the accent of the sentence speaks in favor of a relative model of prosody, in which accents are scaled relative to each other, and against models in which pitch accents are scaled in an absolute way. The results also speak for a model in which syntax, but not information structure, influences the prosodic phrasing. Finally, perception experiments show that the prosodic structure of sentences with a marked word order needs to be presented for grammaticality judgments. Presentation of written material only is not enough, and falsifies the results.

Keywords: Prosody, experimental linguistics

1   Prosodic structure and narrow focus

The influence of information structure on the distribution and scaling of pitch accents in German has been shown experimentally a number of times in the literature: narrow focus triggers a new pitch accent or raises the height

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of an existing pitch accent, and givenness cancels an accent or lowers it (see for instance Katz & Selkirk 2006 for English and Féry & Kügler 2008 for German). But the issue of the best way to account prosodically for such manipulations of pitch is not settled.

It is sometimes assumed that the influence of narrow focus is felt directly on the focused constituent inside the limits of a certain domain (see Jackendoff 1972, Rooth 1985, 1992 and Féry & Samek-Lodovici 2006 for English). As a consequence of focus, a pitch accent is added on a relevant syllable (the focus exponent), or an existing pitch accent is rendered more prominent by raising its pitch or expanding its range. In some other accounts, this influence is indirect. Prominence is achieved by a change in the prosodic phrasing. In this latter case, a prosodic phrase boundary is inserted to the left or to the right of the focused constituent, see Gussenhoven (1983, 1992) and Truckenbrodt (1995, 2007). Beckman & Pierrehumbert (1986) show that regular downstep or catathesis is interrupted at a focused word. At this place, pitch reset occurs. To account for this property of focus, they propose that in English, as in Japanese, a focused word inserts an intermediate phrase boundary to its left. The higher pitch accompanying a narrow focus is then a consequence of the resetting of pitch at the beginning of a prosodic phrase. In the following example, the beginning of the sentence is an intermediate phrase, but when the focused constituent *eighty* is uttered, a prosodic boundary is inserted to its left, which has the effect of resetting the pitch range to its original level.

(1) [It's eleven and one and nine]$_{ip}$ [and EIGHTY $_F$]$_{ip}$

In such an approach, the scaling of the pitch accents is regulated entirely by the prosodic phrasing.[1] Focus creates new phrases, and accents and their height are a consequence of the phrasing.

In the same logic, givenness deletes phrases, and the absence of pitch accents on given material is a consequence of the absence of phrases (see for instance Büring 2001 for German and Sugahara 2003 for Japanese).

An alternative model in which prosodic phrases are responsible for the scaling of pitch accents is proposed by Selkirk (2006). In her model, contrastive focus and information focus project metrical heads at different levels of prosodic phrasing. A contrastive (or narrow) focus is the head of an intonation phrase (or i-phrase), and an information focus has no head on this higher prosodic level, but only at the lower level of Major Phrases (or p-phrases). Thus, in her approach, pitch accents, and their height, are directly dependent on the prosodic level of which they are heads. In (2a), there is a contrastive focus on *Modigliani* induced by the focus particle *only*. The word *Modigliani* projects a grid position at the level of the i-phrase. In (2b), the whole sentence is new, and no constituent is more focused than the other ones. The syntactic IP and the PP each have a head at the level of Major Phrase, which is equivalent to the intermediate phrase of Beckman & Pierrehumbert and is called p-phrase in the present paper. The i-phrase, even though present, has no metrical head.

(2)   a. (x   ) intonational phrase

      (x   ) (x   ) major phrase

      He will only offer that [Modigliáni]$_F$ to MóMA.

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[1]   Beckman & Pierrehumbert (1986) also acknowledge the existence of what they call 'extralinguistic' downstep, which is regulated by pragmatic needs.

    b. (   )   intonational phrase

      (x   ) (x   )   major phrase

          He will probably offer that Modigliáni   to MóMA.

In Selkirk's proposal, givenness has a more radical effect on phrasing, since it not only deletes heads of Major Phrases, but also changes the phrasing. In (3), if the PP *over to Anscombe* is given (because previously mentioned in the discourse), it no longer forms a major phrase, as it would in an all-new context, and has either the structure shown in (3a) or the one in (3b).[2]

(3)   {A: Ánscombe has been féuding with her cólleagues.}
        B: Wittgenstein brought

               ((x   )   )   major phrase
    a.   …. [… [a glass of wine] [over to [Anscombe]$_G$]]

     b.   (x   )   major phrase
        …. [… [a glass of wine] [over to [Anscombe]$_G$]]

An alternative model of interaction between prosody, syntax and information structure is defended in this paper, and proposes that prosodic phrasing is not affected by focus, but only by syntax. The proposal is an extension of Féry & Ishihara (2005, to appear). The object of investigation is the raised or lowered pitch scaling as a consequence of narrow focus and givenness by unchanged prosodic structure.[3]

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[2]   Selkirk considers both structures to be equally likely.
[3]   Obviously, marked information structure, like narrow focus, may affect word order. This is when a narrow focus triggers a marked syntactic structure, as for instance in extraposition, cleft-constructions, scrambling, wh-constructions, etc. In such

The model proposed assumes that prosodic structure is a mapping from the syntactic structure, and this at different levels. How the prosodic structure arises from the syntactic one is not the subject of this paper. The interested reader is referred to Kratzer & Selkirk (2007) and the references therein for a proposal in minimalist terms. Here we are only interested in pitch accents and their scaling. The model is shown schematically in Figure 1 (from Féry & Ishihara 2005). The prosodic domains are organized in a downstep relationship: this is best conceived as downstep of the top lines of the smaller prosodic domains inside of a larger prosodic domain (Figure 1a). In the case concerning us here, the p-phrases of an i-phrase are downstepped relative to each other. The highest tones of each p-phrase are adjusted to these top lines, and cannot reach higher levels than the restricting top lines at the time of utterance.

The primary influence of information structure is that it changes the relationship between top lines: the top line of the domain containing a focus is raised (Figure 1b). Those of prenuclear given material are lowered (Figure 1c). Postnuclearly, we find deaccenting and compression of the register. The top lines are near the bottom of the speaker's voice.

a.

b.
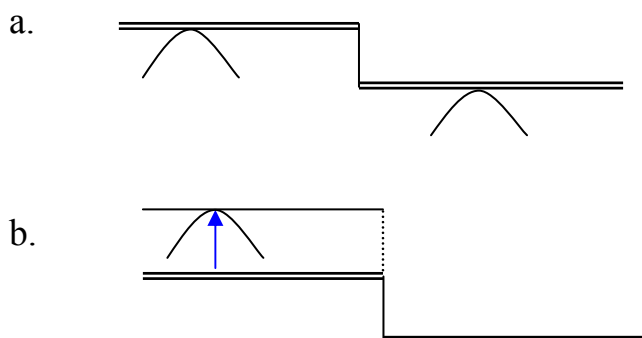
constructions, new phrases are created and/or deleted or the order of the prosodic phrases is changed. We are not interested in such reorderings in the present paper.

c.
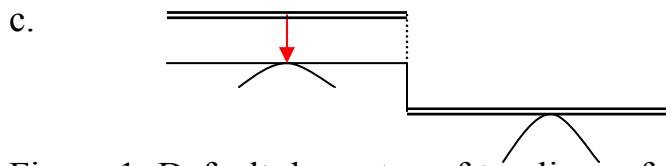
Figure 1. Default downstep of top lines of p-phrases (a). Raising of top line as a consequence of narrow focus (b). Lowering of top line as a consequence of givenness (c).

Since downstep is relative to preceding phrases, this model predicts a difference in pitch scaling only when pitch accents can be compared to each other. Two such situations may arise. First, within the limits of the same utterance, Féry & Kügler (2008) show that a narrow focus raises the pitch of the focus exponent (and givenness lowers it), to the effect that it is higher (or lower) than the same pitch accent in an all-new sentence. The second situation is pitch scaling across utterances. Again, a pitch accent can be higher or lower than a comparable pitch accent in a similar position, depending on its status as part of an all-new sentence, or as narrow focus or a given constituent. However, this raising or lowering happens only if there are other accents in the same utterance to which the affected accent is compared.

This paper investigates experimental results that bear on the question of prosodic phrasing representation. The experiments are described in section 2. Section 3 discusses the results and how they bear on the prosodic analysis. Section 4 concludes the paper.

2   Experiments

2.1   Wide Focus Partial Fronting: Utterances with one prosodic phrase

The model sketched in the preceding section predicts that if an utterance consists of only one prosodic phrase, there will be no difference between a

pitch accent as the focus exponent in an all-new (or wide) focus and the same one in a narrow focus context. In both cases, there is no other accent relative to which it can be scaled. To be more precise, the unique prosodic phrase has only one top line, and no downstep of top lines can take place.[4]

To test this central claim, sentences consisting of only one p-phrase have been studied experimentally. We call them Wide Focus Partial Fronting (WFPF) and illustrate them in (4). These sentences consist of a single i-phrase, and have a unique, early falling pitch accent on the fronted object. The remainder of the sentence is deaccented and pronounced very low in the speaker's register. Fanselow & Lenertová (2006) propose a purely syntactic account of a larger group of partial focus constructions in terms of A-bar movement attracting the first accent in the clause, and fulfilling in this way the Minimal Link Condition (see Chomsky 1995). This operation, called 'Partial Focus Fronting,' is triggered by a formal property, viz. accent, and is sensitive to island and pied-piping restrictions. But crucially, the sentences they examine may have more than one accent, which renders them a different group from the sentences examined in the present paper. In their account, a constituent, which may be larger than just a word and which carries an accent, is attracted by a special feature located in Spec,CP. In Partial Focus Fronting, the only constraint on movement is the presence of an intervening accented element, in violation of the Minimal Link Condition (see Chomsky 1995). In sum, in Partial Focus Fronting, a formal operation targets the closest accent, which is attracted to Spec,CP by a special feature, and leaves all other accents untouched; see also Krifka (1994), Jacobs (1996)

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[4] Obviously, emphasis has an effect on pitch height, as has been shown several times in the literature (see for instance Liberman & Pierrehumbert 1984 for English). It is always possible to raise the voice's overall register to express more excitement or involvement. This effect has to be kept apart from the grammatical pitch scaling considered here.

and Müller (2002) for different syntactic and/or semantic accounts of these or similar sentences.

The sentences examined below are thus a subgroup of the sentences examined syntactically by Fanselow & Lenertová (2006). Prosodically, our sentences always consist of a single phrase, and the accent of this p-phrase can be fronted. Fronting of the accent triggers a different prosodic pattern which corresponds to pragmatic needs (see section 3.1 for more on pragmatic use of this construction).

We provide a phonological account of these sentences by showing how their prosodic properties bear on the issue of the best prosodic analysis. Since there is no material preceding the accent, there is nothing relative to which the initial accent may be scaled. We thus hypothesize that the pitch accent will be identical in wide and narrow focus.

In all examples in this paper, an i-phrase is indicated with a subscript I, a focus with a subscript F and a topic with a subscript T. Small caps indicate pitch accents and unaccented words are written in lower case. The sentences in curly brackets in (4) preceding the target sentences show thinkable contexts for the occurrence of the sentences in their wide focus readings. The term 'wide focus' is used for sentences with at least VP-focus, with a given or inferable subject. The term 'all-new' denotes sentences which are entirely new, including the subject.

(4)   a. {What did you do after I left?}
         [$_I$ [Ein   BIER haben wir getrunken]$_F$]
            a-ACC beer   have   we drunk
         'We drank a beer.'

b. {How was your evening?}
[I [FERNSEHEN habe ich geguckt]F]
television   have I   looked
'I watched television.'

c. {Why was she away so long?}
[I [Das   KIND hat sie ins   Bett gebracht]F]
the-ACC child has she in-the bed brought
'She brought the child to bed.'

d. {Why was the class cancelled?}
[I [Den   EINGANGSSCHLÜSSEL haben sie   verloren]F]
the-ACC front door key   have   they lost
'They lost the front door key.'

e. {What did he do then?}
[I [Die   KÜCHE hat er gestrichen]F]
the-ACC   kitchen has he painted
'He painted the kitchen.' (Krifka 1994)

Even though the object is fronted in these sentences, resulting in a marked word order, they are perfect in a wide focused context, in contrast to other structures with marked word orders.[5]

In the wide focus reading of the sentences in (4), there is a single accent, as illustrated in (5) and in Figure 2. This unique accent is located very early in the sentence, on the fronted object, and the remainder of the sentence is unaccented. The nuclear accent on *die Miete* 'the rent' is a bitonal falling tone H*L. A boundary tone L_I is aligned with the last syllable of the sentence. Between the postnuclear L tone and the low boundary tone, the melody of the phrase is low throughout, which can be analyzed as alignment of the low boundary tone to both the end of the i-phrase and the position

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[5] See for instance Lenerz (1977), who shows that marked word orders are paired with marked discourse contexts.

immediately following the pitch accent (see Gussenhoven 2004 for a proposal along these lines). The result is a low contour throughout.

(5)   H* L L_I

(5)   [I [Die MIETE haben sie   wieder   mal   erhöht]F]
        the   rent   have   they   again   once raised
    'They have raised the rent again.'
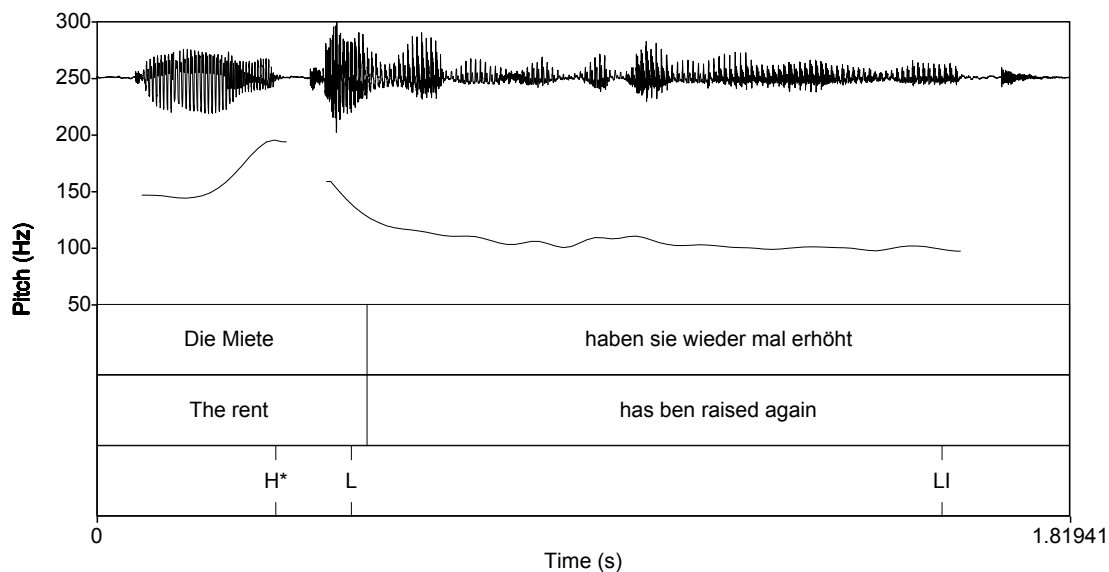
Figure 2. Pitch track of *Die MIETE haben sie wieder mal erhöht*

An important property of sentences with object fronting like those in (4) is that they are not only optimal in a wide focus context (WFPF), but also in a context inducing an initial narrow focus, thus Narrow Focus Partial Fronting (NFPF). The same sentences, with exactly the same prosodic pattern, are also answers to questions asking only for the object, as shown in (6).

(6) a. {What did you drink?}
        [I [Ein BIER]F haben wir getrunken]

    b. {What did you do?}
        [I [FERNSEHEN]F habe ich geguckt]

    c. {Who did she bring to bed?}

[I [Das KIND]F hat sie ins Bett gebracht]

d. {What did they lose?}
[I Den [EINGANGSSCHLÜSSEL]F haben sie verloren]

e. {What did the police do?}
[I [Eine ALKOHOLKONTROLLE]F hat die Polizei gemacht]

In the examples in (6), accent, prosodic phrasing and tonal structure are identical to those shown in (4). There is only one initial accent and the remainder of the sentence is unaccented. In these cases, too, only one i-phrase (and one p-phrase) is formed. The narrow focus on the fronted element is clearly enhanced by its initial position, not only because of the pitch accent on the narrowly accented word, but also because of the deaccenting of the remainder of the sentence.

The fact that these constructions are possible in wide focus as well as in narrow focus make them excellent subjects of investigation for the following questions. What happens when the pitch height of a certain accent cannot be scaled relative to other accents? Does narrow focus affect phrasing in the absolute sense, by changing the phrasing of the sentence, or by being the head of a different prosodic phrase? If the relational view of pitch scaling proposed in section 1 is correct, we should not find any difference in the pitch height of the initial accented object in the sentences in a wide focus and in a narrow focus context.

Both production and grammaticality judgment experiments were performed to find an answer to these questions, the results of which are discussed in turn.

2.2 Production

Three production experiments were designed to investigate the prosodic pattern of WFPF sentences. The sentences used in the experiments differed

in length, in focus domain and in the kind of subject. First, some of the sentences had only a full object, while others had an additional argument. Second, the focus domain was wide or narrow, and third, the subject was pronominal or a full DP. In the production experiments, the number of accents produced by the participants was counted, and the height of the pitch accent on the fronted object was measured and compared in different conditions.

2.2.1 First production experiment

Goal: The first production experiment aimed at answering the following question: Is there a difference in the production of Partial Fronting sentences in a wide focus and in a narrow focus context? More specifically, is the accent higher in the narrow focus context than in the wide focus context?

Subjects: After giving informed consent, 30 students from the University of Potsdam participated in this study for course credit or 5 Euros. All participants were native speakers of German, had normal or corrected-to-normal vision and no hearing problems were reported.

Materials: Each participant read 12 experimental sentences aloud, as illustrated in (7), as answers to context questions. Additionally, subjects read 100 unrelated filler sentences. The material was presented in a pseudo-randomized order. Moreover the object was generic or specific, to check for possible effects of specificity. The sentences were recorded with two different syntactic structures: with a fronted object (7a) and with a canonical word order, SVO (7b).[6]

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[6] The complete list of examples used in the experiments is given in the appendix.

(7)   Wide focus: {Did you go out afterwards?}

        Narrow focus: {What did you drink?}

        a.   Ein Bier haben wir getrunken./ Ein Jever haben wir getrunken.

              a beer/a Jever have we drunk   'We drank a beer/a Jever.'

        b.   Wir haben ein Bier getrunken./ Wir haben ein Jever getrunken.

Method: The recordings took place in a soundproof box at the University of Potsdam with a DAT tape recorder. A set of instructions familiarized the subjects with the process and had them practice with four examples. After the instructional part, the subject went through the experiment in the form of a Powerpoint presentation in a self-paced manner. The speakers read the sentences on a screen as answers to questions which were presented both visually and acoustically over headphones: they heard a question and read it on a computer screen, pressed the return key, and read aloud a target sentence presented on the next slide.

Results: In all sentences of type (7a) with a fronted object (altogether 360 realizations: 12 sentences x 30 subjects), a falling pitch accent was realized on the object and no other accent was present, showing the readiness of native speakers to realize these sentences in the contexts given.

In the sentences with a fronted object, there is no difference in pitch between the narrow and the wide focus realization. All instances of the sentences of type (7a) were realized with a single accent on the object. There were some differences in the average fundamental frequency (F_0) of the objects and the verbs (see Figure 3). In the wide focus condition, the specific objects always had a lower pitch than the generic ones, but the difference is not significant (t = -0.543, df = 54.379, *p* = 0.5893) and does not relate to the

difference in focus context of interest here.[7] Thus no comparison regarding wide or narrow focus was significant (t = -0.1571, df = 693.785, p = 0.8752).
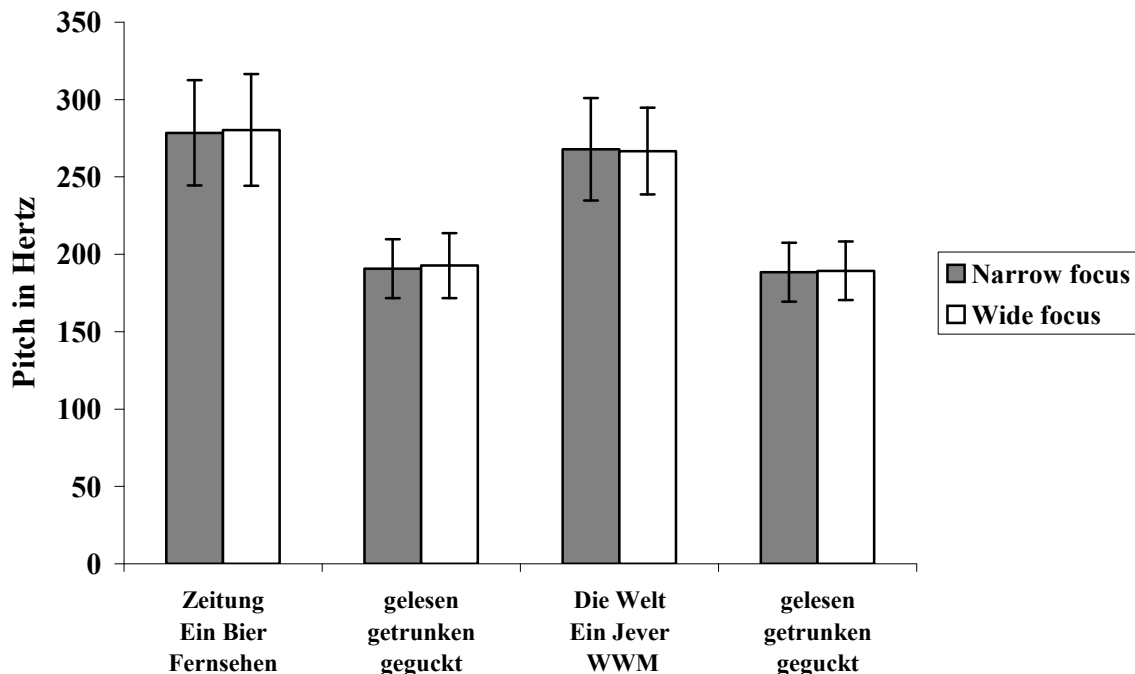
Figure 3. Averaged pitch accents in F_0 on the fronted objects of experiment 1

Discussion: The results of the first experiment led to a similar pattern in the tested wide and narrow contexts for the accented fronted object. At least in this experiment, no prosodic difference between an accent on the fronted object in a wide focus context and an accent on the same fronted object in a narrow focus context could be found. This result is compatible with the following view of prosodic structure: if there is only one p-phrase, the height of the top line of the p-phrase is scaled in an absolute way. There is no

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[7]   The remaining comparisons are not significant: Verbs in the wide focus condition (t = 1.0112, df = 170.951, p = 0.3134), objects in the narrow focus condition (t = 0.4405, df = 171.677, p = 0.6601), and verbs in the narrow focus condition (t = 0.9323, df = 171.772, p = 0.3525).

indication that the phrasing is changed in narrow focus as compared to wide focus.

2.2.2 Second production experiment

Goal: The second experiment investigates the readiness of German speakers to realize a WFPF prosodic pattern with longer sentences. More specifically, this experiment investigated the following question: Does an increase in the number of arguments in the (intended) deaccented part of the sentence impede the willingness of speakers to produce a prosodic pattern with only one early falling accent and the remainder of the sentence deaccented?

An answer to this question should help to understand whether WFPF is insensitive to prosody and length of sentences, or whether, alternatively, the occurrence of such sentences decreases when more p-phrases are to be realized. We hypothesize that this pattern is readily realized when there is only one prosodic phrase mapped to syntax, as the first experiment demonstrated, but that it is less frequent when more than one prosodic phrase is present, because in the default case, all prosodic phrases are preferably headed with a pitch accent. An unaccented argument is either the consequence of givenness, or it is due to special syntactic conditions. For instance, a directional or locational PP, as in (6c), is usually integrated into the p-phrase of the preceding object and following verb (Krifka 1984, Kratzer & Selkirk 2007), and is thus realized without a pitch accent. In all other cases, a maximal projection projects a p-phrase. As a result, the addition of a syntactic phrase should impede the formation of WFPF.

Subjects and method: A group of 30 students of the University of Potsdam performed this study for course credit or 5 Euros. Participants of this

experiment did not participate in the first experiment. All subjects were native speakers of German, had normal or corrected-to-normal vision and no hearing problems were reported. The method was identical to the first study.

Material: The second series of sentences were realized in wide and narrow focus contexts. They were longer sentences with two non-subject arguments and a pronominal 1st pers. sg. subject. Examples are shown in (8) to (10) (see the appendix for the remaining sentences). In (8), three versions of the sentence as answers in a context asking for a wide focus sentence are listed: (8a) is the canonical word order, (8b) has a fronted object, and (8c) a fronted second argument — a prepositional phrase. (9) and (10) show the same sentences as possible answers to a question asking for a narrow focus. (9) asks for the object, and (10) for the prepositional phrase. Again the object came in two versions, a non-specific (*Wagen* 'car') and a specific noun (*Jaguar*).

(8)   {Why were you away so long?}
         a. Ich habe den   Wagen/den   Jaguar in die Garage gefahren.
             I   have the-ACC car/   the-ACC Jaguar into the garage driven
         'I drove the car/the Jaguar into the garage.'
         b. Den Wagen/Den Jaguar habe ich in die Garage gefahren.
         c. In die Garage habe ich den Wagen/den Jaguar gefahren.

(9)   {What did you drive into the garage?}
         a. Ich habe den Wagen/den Jaguar in die Garage gefahren.
         b. Den Wagen/Den Jaguar habe ich in die Garage gefahren.

(10)   {Where did you drive the car to?}
         a. Ich habe den Wagen/den Jaguar in die Garage gefahren.
         b. In die Garage habe ich den Wagen/den Jaguar gefahren.

Results: In this experiment, only the accent pattern, that is the number of realized accents, was examined. The answer (8a) to the question asking for a wide focus was usually realized with a neutral prosodic structure, thus a main accent on the preverbal argument and a secondary accent on the preceding argument, though there was a very small amount of variation in the accent pattern (some speakers added an accent on the verb): in the majority of the cases, both the object and the PP were accented. This is not discussed further and not illustrated in the figures below.

Figure 4 compares the accent patterns of sentences with a fronted object in a wide focus context (8b) with those in a narrow focus context (9b) in the form of percentages.[8] A fronted object as a narrow focus carries the unique accent in 93% of the cases, whereas the same accent pattern arises in only 44% of the cases in a wide focus context. The other realizations comprise those with additional accents on the PP, on the verb, or on both.
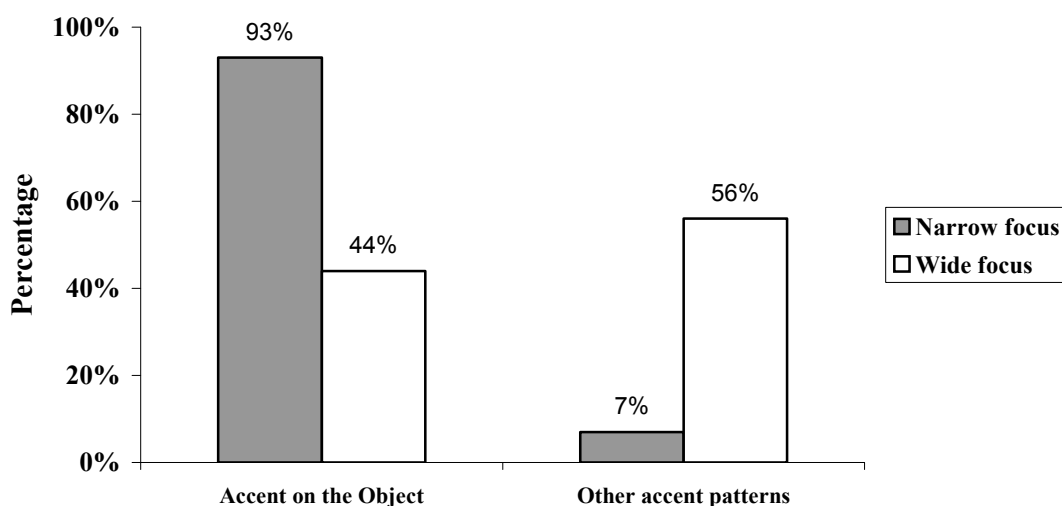
Figure 4. Percentages of accents on the fronted object in sentences with wide (8b) and narrow focus (9b)

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[8] (9a), a sentence in the canonical word order with a narrow focus on the object, was always realized with an accent on the object.

As for the fronted prepositional phrase, illustrated in Figure 5, the accent pattern is similar to that in Figure 4 for the narrow focus, with 94% of the realizations having a single accent on the narrowly focused PP. However this decreases to 6% in the wide focus condition.[9] This means that in 94% of the wide focus realizations, not only the fronted PP was accented, but also the object or the object and the verb.
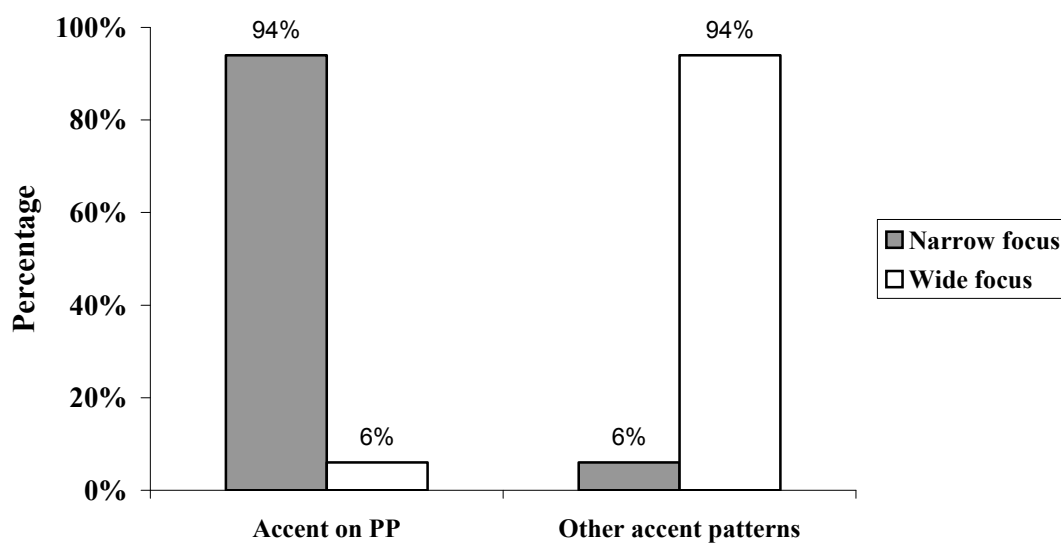
Figure 5. Percentages of accents on the fronted PP in sentences with wide (8c) and narrow focus (10b)

Discussion: The addition of postverbal accentable constituents renders the sentences less apt to be realized with only one accent on the fronted argument. In the first condition, namely when the direct object was fronted, 56% of the realizations in wide focus had at least one additional accent. When the PP was fronted, more than one accent was the rule: 94% of the realizations had more than one accent.

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[9] Again the SVO sentence (10a), with narrow focus on the PP, was realized as expected, with a single accent on the head of the PP (*Garage* in the example).

The difference between the 44% of the intended realizations in the case of fronted object as compared to the 6% in the case of fronted PP is very revealing. It is more natural for speakers to realize a unique accent if the fronted constituent is the direct object than if it is the prepositional object, a clear confirmation of Fanselow & Lenertová's (2006) claim that it is always the first accent of the canonical word order which is allowed to be fronted in order to be an adequate sentence in a wide focus context. In this case, the object comes before the prepositional phrase, and fronting the object results in a good WFPF pattern, whereas fronting the PP does not.

If, as hypothesized in the proposed model of prosody, every non-pronominal argument projects its own p-phrase, it is natural that speakers have a tendency to realize more accents in these longer sentences. The information structure sometimes prevails (see section 3.1), but the syntax and the default prosodic phrase are very influential, as well, and encourage the emergence of accents. If prosodic phrasing is changed at will by information structure, our results cannot be explained.

2.2.3   Third production experiment

Goal: The same question as in the second experiment is investigated here, namely how the addition of a p-phrase changes the number of accents. It is again speculated that the addition of prosodic phrases decreases the speakers' willingness to realize a WFPF pattern. In this experiment, the heights of pitch accents are again compared, in addition to the question of the number of accents. But this time, the postverbal subject is either a pronoun (as before) or a full DP. A pronominal subject is integrated into an adjacent p-phrase, but a full DP forms its own p-phrase. In order for the WFPF prosodic contour to arise, the full DP subject must be deaccented,

which is only acceptable if it is completely predictable and behaves as if it were given. For this reason, the sentences were constructed in such a way that the subject would be maximally predictable. A second difference from the preceding experiments lies in the size of the focused element. While the wide focus context was a VP focus in the preceding experiments, it is now an IP focus. The subject is new, as well. In sum, two different factors might act on the pitch height: the subject as a full DP and the size of the focus domain.

The methods were the same as those described for the preceding experiments. A new set of thirty students from the University of Potsdam read the sentences in two contexts, one inducing an all-new focus and one inducing a narrow focus. As before, the participants produced both variants in one session.

Materials: Sentences like those in (11) were tested. Five such sentences were constructed. Altogether 300 (2 x 5 x 30) utterances were used and analyzed for the results. The subject was either a pronoun (11a) or a full DP (11b), and either the focus encompassed the entire sentence, including the subject, or it was restricted to the object. Focus on the whole sentence is called 'all-new,' but the term wide focus is occasionally used, since, as we will see below, VP focus and all-new focus delivered equivalent results.

(11)   {All-new: Why was the talk cancelled?}
         {Narrow focus: What did he/they/the doorman lose?}

         a.   Den Eingangsschlüssel haben sie/hat er verloren.
                'They/he lost the front door key.'

         b.   Den Eingangsschlüssel hat der Pförtner verloren.
                'The doorman lost the front door key.'

Results: Figure 6 shows the distribution of accents in the individual items in the all-new condition: when the subject is pronominal (11a) and when the subject is a full DP (11b). The sentences with a narrow focus on the fronted object are not shown here, because they do not bring any new insight. They were consistently realized with a unique accent on the fronted object.
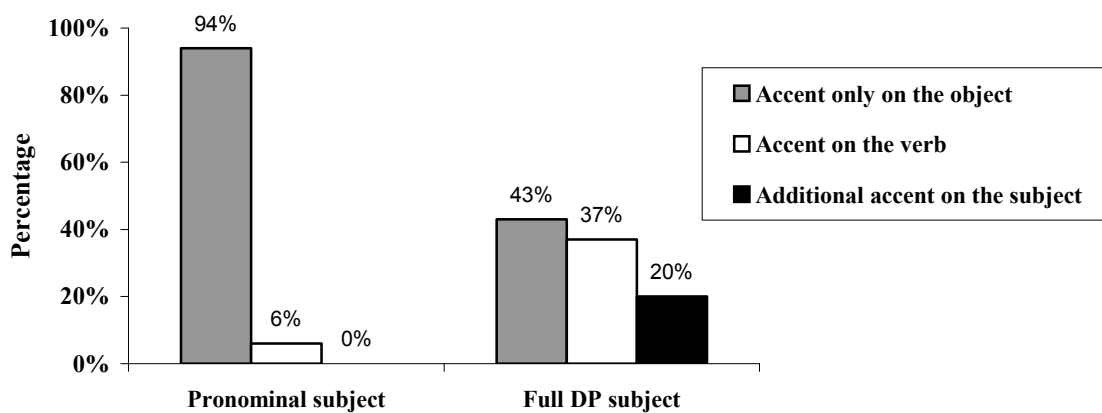
Figure 6. Percentages of accent patterns in all-new sentences

In the case of a pronominal subject, only 10 of 150 realizations had an additional accent, which was located on the verb (6%). All other instances (94%) had a single accent on the object. In the case of a full DP subject, 65 realizations (43%) had a single accent on the object, and the remainder of the sentence, even the new subject, was deaccented. 20% had an additional accent on the subject. In 37% of the realizations, the verb was accented as well, either with or without an accent on the subject.

As for the F_0 of the preposed object, no significant difference could be found between the sentences with pronominal subject and those with full DP. The data were analyzed in a repeated-measures analysis of variance

(ANOVA) with a factor CONDITION, with two levels (Full-DP-subject and Pronominal-subject) and a factor ELEMENT, with five levels (the objects *Eingangsschlüssel*, *Alkoholkontrolle*, *Miete*, *Damm* and *Löhne*). In Figure 7, the averaged F_0 values of the accented syllable for all speakers are shown. The statistical analysis revealed no effect for CONDITION ($F<1$) but a main effect for ELEMENT ($F (4,100) = 10.5$, $p = .001$). The effect was due to the lower F_0 values in sentences with the element *Eingangsschlüssel*. There was no interaction between both factors ($F<1$). Single comparisons of each preposed object regarding sentences with pronominal subject compared to sentences with full DP subject were not significant ($F<1$).
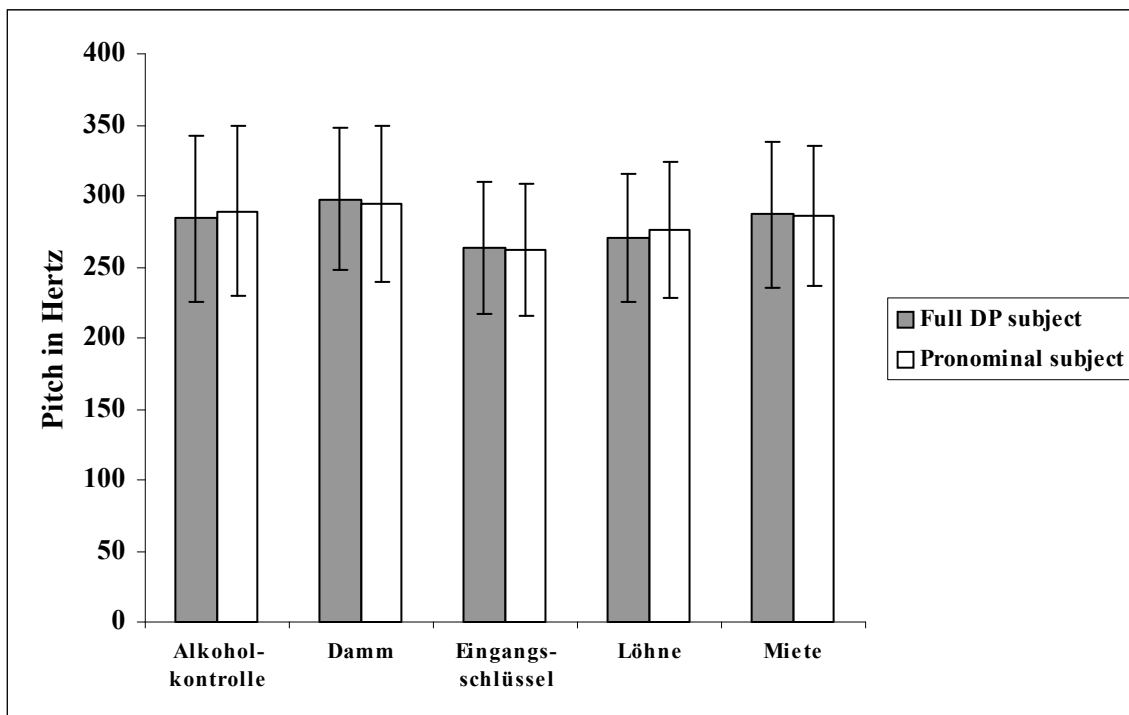
Figure 7. Averaged F_0 value of the preposed object in sentences with a pronominal subject and with a full subject

Discussion: The addition of a full subject had a clear influence on the accent pattern of these sentences. As expected, it considerably decreased the number of WFPF patterns. Interestingly the number of cases with this

pattern is nearly identical to that of experiment 2 with a fronted object (43% vs. 44%). Thus a unique accent on the fronted object nearly always arises when the remaining constituents consist exclusively of a pronoun, a verb and an auxiliary, at least in a context asking for an all-new reading. But as soon as the postverbal subject is a full DP, only less than half of the realizations have a unique accent on the fronted object.

The second result of this experiment is that the height of the fronted object was not influenced by the kind of postverbal subject. It has nearly the same F_0 value in wide and in narrow focus (despite the presence of additional accents in the all-new condition).

An additional result is that the size of the focused part, which is the VP in the second experiment and the whole sentence in the third one, does not matter in these experiments. VP and all-new focus do not lead to different WFPF accent structures.

2.3   Perception

Acceptability judgment tasks were performed with WFPF sentences to test whether they are accepted as easily in an all-new as in a narrow focus context. Moreover, the material was presented both acoustically and in a written form to investigate the effect of the prosody on acceptability.

2.3.1 First perception experiment: Spoken material

Goal: Acceptability judgment tasks were conducted with spoken sentences with a fronted object in an all-new environment as compared to a narrow focus context. Two additional factors were investigated: first the kind of subject (pronoun vs. full DP), and second the accent pattern (a unique accent on the object or an additional accent on the full DP subject). The aim of the

perception experiments was to test the well-formedness of these sentences, and whether the accent pattern has an influence on the acceptability of these sentences. We hypothesize that the intended prosodic pattern, namely a unique accent on the fronted object, will increase the acceptability of the sentences as wide focus. Furthermore, a pronominal subject should also increase the acceptability, as compared to a full DP subject, since fewer prosodic phrases need to be deaccented in the former case.

Method: Dialogues were pre-recorded. Two native speakers of German read the sentences in a natural way: one of them read the questions, and the other one, a trained phonetician, read the answers. The sentences were integrated into a larger PowerPoint presentation containing several filler sentences between each target sentence.

Subjects: The experiment material was presented individually to each informant. 30 male and female students, a different group from those who participated in the production experiments, delivered the auditory grammaticality judgments.

Material: There were 6 conditions (2 x 3): first the contexts, all-new or a narrow focus (see (12Q) and (13Q)); second, the subject, which could be pronominal ((12a) and (13a)) or a full DP (all others). The last condition was an accented or an unaccented subject, but only in the sentences with a full DP ((12b–c) and (13b–c)). The pronoun was always deaccented.

(12)   {Q: Why are your neighbors complaining?}

       a. Die MIETE haben sie wieder mal erhöht.

       b. Die MIETE hat der Hauswirt wieder mal erhöht.

    c. Die MIETE hat der HAUSWIRT wieder mal erhöht.
      the rent   has the landlord   again once raised
  'The landlord/they raised the rent again.'

(13)   {Q: What did the landlord raise again?}

    a. Die MIETE hat er wieder mal erhöht.

    b. Die MIETE hat der Hauswirt wieder mal erhöht.

    c. Die MIETE hat der HAUSWIRT wieder mal erhöht.

    'The landlord/he raised the rent again.'

Results: The averages of the grammaticality judgments appear in Figure 8. The scale is the inverse of the German school grading system: 1 is the worst and 6 the best.
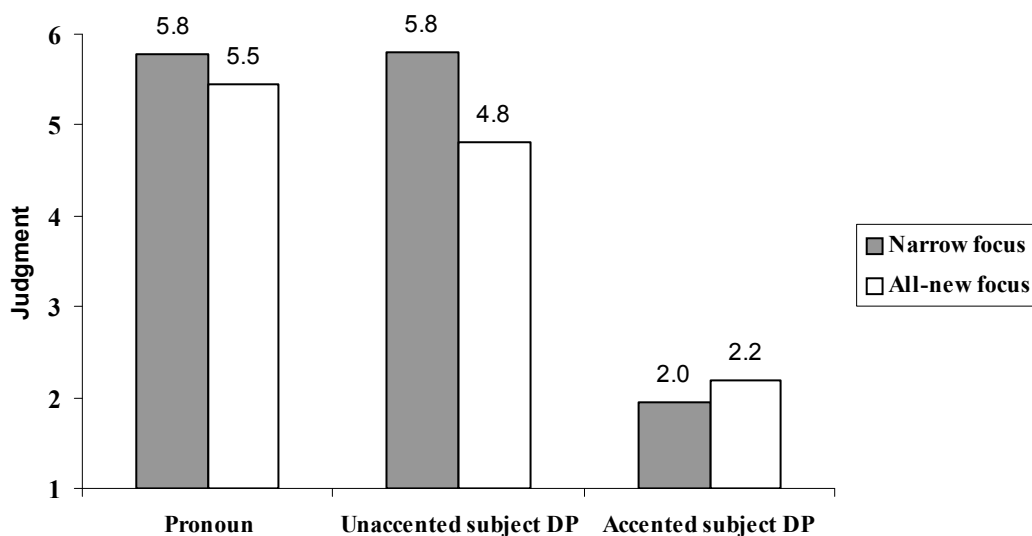
Figure 8. Averaged judgments of the question/answer pairs in spoken form[10]

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[10] An analysis of variance (ANOVA) was performed with a factor FOCUS, with two levels (Narrow focus and All-new focus), and a factor STRESS, with three levels (Pronoun, Unaccented subject DP and Accented subject DP). There was a main effect for FOCUS ($F(1,29) = 10.5$, $p = .01$) and a main effect for STRESS ($F(2,58) = 263.3$, $p = .001$).

When the subject was a pronoun, the sentence always got high scores, both in an all-new (5.5) and in a narrow focus context (5.8), though the sentences were judged slightly better in a narrow focus context. Sentences with a full but deaccented subject got higher scores in a narrow focus context (asking for the object) than in an all-new one (5.8 vs. 4.8). Both scores are well above the mid level. The accented subject DP got a low score (2.0) when the context asked for a narrow focus on the object. This question/answer pair contained an accent in the wrong place, and it has been shown several times in the literature that listeners are sensitive to this kind of mismatch. This also accounts for the variance within the subject group (see for instance Gussenhoven 1983, Birch & Clifton 1995, Hruska et al. 2001 and Féry & Stoel 2005).

An interesting result is the nearly equally low score obtained in a sentence with an accented subject when the question asks for an all-new focus (2.2). At first glance, nothing in the prosody prevents the accenting of the subject in such a sentence. In fact, theories of phrasing formation predict a phrase on the subject because it should form its own phrase by virtue of not being integrated in the domain of the verb (see among others Gussenhoven 1992 and Truckenbrodt 2007 for such models).

In models of word order that take the prosody into account, the reason for the low scores is clear. Accented object fronting always meets a need. As shown in section 1, it takes place either in a narrow focus context, or because the object is topicalized, or by virtue of its being the unique head of a WFPF sentence. But the question asked for a wide focus with a new subject, and a

Additionally, the ANOVA revealed an interaction between both factors ($F_{(2,58)}$ = 18.6, p = .001).

pattern with a fronted object and deaccented subject is not optimal in this context.

Discussion: To sum up the results of the first perception experiment: Both wide focus and narrow focus are nearly equally good when a pronominal subject is involved, but when an unaccented full DP is present, the acceptability of such a sentence in a wide focus decreases. In both contexts the sentences are bad when the full DP subject is accented.

2.3.2 Second perception experiment

Goal: The second perception experiment was a grammaticality judgment task using written material inserted in standard questionnaires. The aim of this experiment was to find out whether the difference in the presentation of the material in a written and in an oral form has an effect on the acceptability. In other words, does it matter for the acceptability judgments whether the accent pattern is presented together with the sentences? We hypothesize that it does.

Subjects and Material: A new group of 120 informants, students at the University of Potsdam, performed grammaticality judgments. The same five sentences as in the first perception experiment were used. Students received course credit or 5 Euros for their participation.

Method: The sentences to be judged were presented in the form of written dialogues. There were 4 versions of each sentence, as illustrated in (14) and (15). The four conditions (2 x 2) were the questions, which elicited an all-new or a narrow focus ((14) vs. (15)), and the two versions of the subject, a

pronoun or a full DP (a versions vs. b versions). Only 4 such dialogues were included in each questionnaire so that participants had to evaluate only one version of each sentence. Altogether six different questionnaires were constructed. The target sentences were separated from each other by numerous distractors.

The most obvious difference between the spoken and the written material is the accent pattern, which was not present in the second experiment. The expectations was that both conditions (focus and subject) would influence the judgments.

(14) {Q: Why are your neighbors complaining?}
     a. Die Miete haben sie wieder mal erhöht.

     b. Die Miete hat der Hauswirt wieder mal erhöht.

     'The landlord/they raised the rent again.'

(15) {Q: What did the landlord raise again?}
     a. Die Miete hat er wieder mal erhöht.

     b. Die Miete hat der Hauswirt wieder mal erhöht.

Results: Figure 9 presents a summary of the results, using the same scale as in Figure 8.
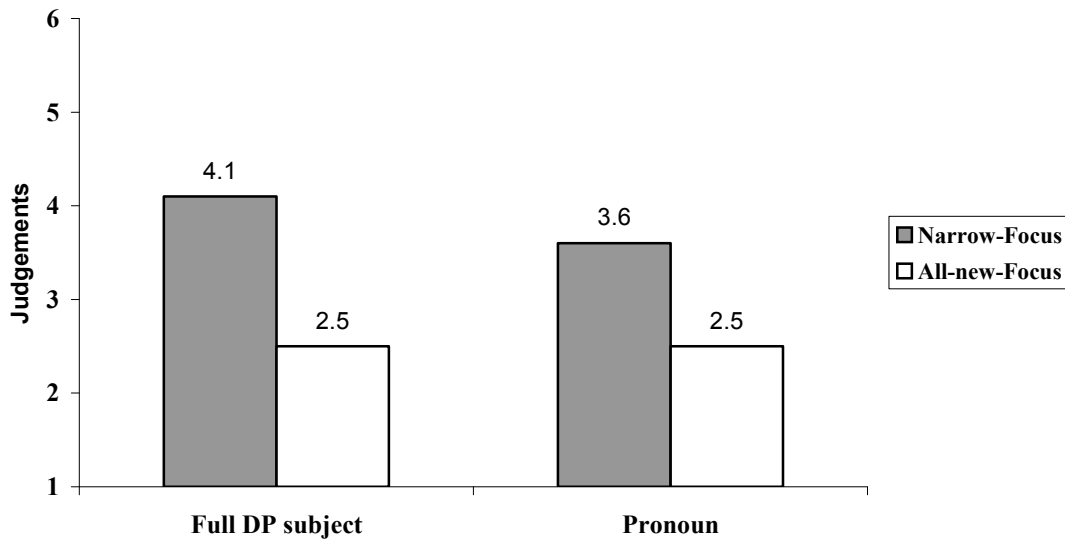
Figure 9. Average of the judgments in written question/answer pairs

Altogether judgments are lower than in the oral presentation. The results show a clear effect of focus (t = 7.475, df = 232.133, *p* = .001), since the sentences got higher scores when presented in a narrow focus, but they show no effect of pronoun vs. full DP subject (t = 1.1294, df = 232.121, p < 0.2599). It did not matter whether the sentences included an additional accentable argument or not. The WFPF was never a real option, even when a single prosodic phrase could be created. A comparison of these results with those obtained in the spoken presentation is especially revealing. In this latter modus, the accent had a crucial effect on acceptability, since a deaccented subject had a considerable positive effect on scores (t = 20.434, df = 358.203, *p* = .001). It can be hypothesized that, in the written modus, fronting was interpreted as focus, but not as WFPF.

Discussion: It can be assumed that in the written version, informants did not always project the intended prosodic pattern onto the sentences they read.

Instead they probably very often projected an 'unmarked' prosodic pattern, like the one in (16), which is not optimal in a wide focus context.

(16) [[_I [_P Die MIETE]_T [_P hat der HAUSWIRT wieder mal erhöht]]_F]

But this is not the only explanation, since when a pronoun was present, the judgments were also low. We suggest that the marked word order reduced the acceptability of the sentence, but only in the absence of prosodic structure. In an experiment using the same kind of material in written form, Fanselow, Lenertová & Weskott (to appear) also find a difference in acceptability between WFPF sentences in narrow and in wide focus. When the sentences are in a wide focus context, they also find a larger difference between pronominal subject and lexical subject than we did. They speak of " 'intrinsic imperfections' of the structure caused by violations of syntactic principles (reducing grammaticality) or caused by processing problems of sentences with a marked word order (reducing overall acceptability)." The WFPF constructions without prosodic structure are of the second kind.

The results of this experiment show that the prosodic pattern helps listeners to evaluate sentences in their contexts. The results obtained with spoken material provide more insight into the processing (at least of the tested structures) than those obtained with written material.

3   Discussion and analysis

The experimental results of section 2 show that WFPF sentences are readily pronounced (first production experiment), as well as accepted by German speakers, at least when heard with the correct prosodic pattern (first perception experiment). A unique accent on the fronted object is easier to

realize and more readily accepted when the subject is pronominalized than when it is a full DP (third production and first perception experiments). An intervening accented constituent, be it a subject or another verbal argument or any accentable constituent, blocks the reading of the sentences as WFPF altogether, speaking for a negative influence of additional p-phrases. This was clearly shown in the perception experiment, and in the second production experiment with longer sentences. The perception experiments also showed that adding the intended prosodic structure increases acceptability, an observation which has been made by several authors for other prosodic patterns (see Fodor 2002, Kitagawa & Fodor 2006 and Féry & Stoel 2005 among others). In the present case, when sentences with two arguments, and thus potentially two accents, were presented in a written form in a wide focus context, informants may have had difficulties in mentally creating the right prosodic pattern. Presenting prosody simultaneously with the lexical and syntactic material was thus crucial.

It could be shown that WFPF sentences have a very similar accent pattern in a VP-focus pattern and an all-new IP-focus pattern (production experiments). And finally, the height of the pitch accent on a fronted object was shown to be indistinguishable in a VP focus and in a narrow object focus (first production experiment). The same was true in a comparison between the F_0 of the accents in all-new sentences in which the subject is a pronoun or a full DP (third production experiment). The experimental results do not bear on the question of the role and interpretation of WFPF sentences. This point is instead shortly addressed in section 3.1, where a comparison is made with the so-called thetic sentences, which show a strong similarity with the WFPF sentences in their prosodic structure and in one of their interpretation patterns. In the last subsection, the impact of our results for the prosodic theory is taken up again.

3.1 WFPF and theticity

A type of sentence called 'all-eventive' or 'thetic' has been extensively discussed in the literature from the point of view of both its pragmatic interpretation and its formal syntactic and phonological properties (see Marty 1918, Kuroda 1984, Schmerling 1976 and Sasse 1987 among others). These sentences are contrasted with 'categorical' sentences, prototypically divided into a topic and a comment. Thetic utterances consist only of a predication and describe a single event without separating it into a theme and a comment about the theme (a rheme), as categorical sentences do. Some examples from the literature are listed in (17), and the reader is referred to the cited articles (especially Sasse 1987) for a survey of theticity.

(17)   a. My HOUSE is on fire.

        b. Your EYES are red.

        c. My WALLET has disappeared.

        d. JOHNSON died. (Schmerling 1976)

Thetic sentences have a unique accent on the subject, both in English and in another action that my wallet could perform, or about other objects that can disappear, but rather it is communicated that a very unpleasant event just happened, and that I have a good reason to be upset.

    As has been demonstrated in section 2, WFPF sentences have a similar interpretation, and a similar prosodic structure, but they differ on the crucial accented constituent, since an object or another kind of argument and not a

subject carries the accent.[11] We have seen examples with direct objects above. The fact that thetic sentences accent their subject is readily explained when one becomes aware that thetic sentences like those in (17) do not have any object and are instead accented on the only available argument, namely the subject. In these types of sentences, the action denoted by the verb is prototypical for the subject. Replacing the verbs in (4) with those in (18) destroys the WFPF preference in the following expressions and forces the emergence of an additional accent on the verb or on another constituent.[12]

(18) a. {'What did you do after I left?'}
          [P [Ein BIER haben wir neu ZUSAMMENGEBRAUT]F]
          'We brewed a new beer.'

      b. {Why was she away so long?'}
          [P [Das KIND hat sie zur NOTAUFNAHME fahren müssen]F]
          'She had to drive the child to the emergency room.'

Sentences with partial fronting also arise in readings other than all-new or wide focus ones. As shown by Fanselow & Lenertová (2006), indirect objects may be fronted and accented when the direct object is given, as shown in (19). In their example, a narrower focus is induced by the question, which mentions more than just the subject.

(19)   {What did you do with the book?}
         Meiner FREUNDIN hab ich's/das Buch geschenkt
         my-DAT friend   have I   it/the book given
         'I gave it to my friend as a present.'

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[11] An example of a preposed argumental adverb appears in (i).
      (i) {How was the trip?} *Schnell sind wir gefahren.* 'We drove fast.'
[12] In Katalin É. Kiss's terms (p.c.), in order for WFPF to arise, it should be possible to accommodate the meaning of the verb as soon as the object has been pronounced.

In this case, the thetic flavor is lacking entirely, and the sentence is categorical: it consists of a topic or a theme and a comment on this topic. (19) is a statement about the book asked for by the context. In this example, the 'topic' is the element which the sentence comments about. In syntactic terms, the question asks for a VP, but some part of the VP, the direct object in (19), has previously been mentioned. Still the accented part of the sentence may be fronted and the verb remains in situ.

3.2   Prosodic analysis of WFPF

In section 1, we raised the question of how to integrate into the prosodic model the raising of pitch usually observed in relation with an accent on a narrow focus as compared to wide focus. Most approaches advocate an indirect relationship achieved by changes in phrasing. Beckman & Pierrehumbert (1986) propose inserting a prosodic phrase to the left of a focus domain so that regular downstep taking place inside of an Intermediate Phrase is interrupted. Gussenhoven (1983, 1992) and Truckenbrodt (2007) also propose that a narrow focus or a given constituent changes the prosodic phrasing of sentences, so that biuniqueness of prosodic phrases and pitch accents is guaranteed. Selkirk (2006) allows different kinds of pitch accents to be heads of different levels of prosodic phrasing. In particular, a pitch accent which stands for an information focus is the head of a lower level Major Phrase. In contrast, a pitch accent standing for a contrastive focus is the head of the highest level of phrasing, the Intonational Phrase.

Following the proposal for German laid down in Féry & Ishihara (to appear), an alternative view restricts the grammatical component with the power of changing phrasing to syntax, and considers raising and lowering of pitch as affected solely by information structure, which, with unchanged syntax, is unable to insert or delete boundaries of prosodic phrases. Syntax

defines a basic or unmarked prosodic structure, characterized by downstepped top lines of prosodic phrases until the end of the intonation phrase. Information structure can change the scaling of top lines, and indirectly also the scaling of pitch accents adjusted to the top lines. [13] Information structure, thus, relates pitch accents to each other. A narrow focus raises the pitch of the affected constituent. Simultaneously it lowers the pitch accents of given constituents. Such a conception of the role of pitch accents is purely relational. A hearer knows which accent is the most prominent by comparing it to the other ones of the same domain. If there is no accent to which a prominent syllable can be compared, there is no point in raising or lowering it. In particular, if a specific accent is unique in the intonation phrase, the relational model predicts that it will not change its height as a reflex of informational or narrow focus.

The results of the first production experiment confirmed the relational model of prosody. The initial pitch accent had the same height in narrow and wide focus contexts. The second and third production experiments confirmed the view that prosodic phrases are mapped onto syntax independently of the information structure. The influence of additional prosodic phrases was tested in the form of an additional verbal argument or of a full DP subject. Since the phrasing is mapped onto syntax, elements following the intended unique pitch accent still project a prosodic phrase, and they are readily assigned a pitch accent. In the third experiment, the height of the preverbal object was measured when it was followed by a

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[13] In this sense, phrasing does affect the height of pitch accents, though not by changing the overall prosodic phrasing. An alternative view consists in viewing the scaling of accents as a local phenomenon, not biased by top lines. We think that top lines provide a more correct view of scaling, because they are needed independently for reset of accents at the beginning of new domains, as well as for embedded scaling. Using top lines for scaling of accents allows a more constrained theory of pitch accent scaling.

deaccented prosodic phrase, as compared to when there was only one prosodic phrase comprising the whole sentence. Again no difference in the height of pitch was found. This is in agreement with the theory that an increase in pitch height for narrow focus only makes sense when there is another accent in the sentence to which it can be compared. If there is none, no raising (or lowering) needs to take place.

A conception of prosodic structure which adds new phrases, or which considers narrow focus as the head of a different level of phrasing from informational focus, cannot account for this lack of difference in pitch height.

The second production experiment did not bear immediately on the issue of accent scaling, but only on the readiness to realize a unique accent if additional prosodic phrases are present. The results of this experiment showed that adding prosodic phrases renders a WFPF intonation less probable. This is predicted by a theory which says that only the syntax influences the creation of prosodic phrases. The addition of postverbal material goes hand in hand with additional p-phrases and thus additional pitch accents. The result of this production experiment showed that speakers were tempted to add accents in these longer sentences. In other words, our results were compatible with a prosodic model in which information structure influences the scaling of accents, and has a deaccenting effect in the postnuclear region, but cannot create or delete prosodic phrases.

4   Conclusion

German Wide Focus Partial Fronting sentences (WFPF), like *Ein BIER haben wir getrunken*, 'We drank a beer', have a rigid prosodic structure characterized by a unique initial falling pitch accent H*L on the fronted

object, followed by a flat and low melody until the end of the sentence. The information structure of WFPF sentences is identical to that of a wide focus, though they are pragmatically similar to thetic sentences: the accented argument and the verb must be tightly correlated semantically. The falling accent is to be interpreted as the focus exponent, thus the bearer of the focus accent, and the remaining part of the sentence is integrated into the p-phrase of this accent. The complete deaccenting of the final section of the sentence emphasizes the integrational pattern.

It was possible to show in production experiments that speakers readily pronounce WFPF sentences as long as the postnuclear material can be integrated into one p-phrase. If additional material appears, like a full DP subject or an additional verbal argument, speakers have the tendency to realize additional accents, even in a wide focus context. In perception experiments, a difference in acceptability was found between sentences presented acoustically, and thus displaying the intended accent pattern, and the same sentences presented in a written form, and thus without accents. Sentences presented with the right prosodic pattern got higher scores than sentences presented in the written form. This difference may point to the importance of integrating prosodic patterns into acceptability judgment tasks in general.

The results presented in this paper bear on the best theory of the syntax-information structure-prosody relationship. It was shown that a relational theory of pitch accent scaling can explain the data, whereas absolute models cannot. Moreover, our data are consistent with a view of prosodic structure which considers syntax as the only source of prosodic phrasing. In an unchanged syntactic pattern, information structure cannot introduce new prosodic phrases, but can only raise or lower pitch accent heights, mediated by top lines of prosodic domains.

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Appendix

Experiment 1 (production)

1.1   a. Was hast du denn am Sonntag gemacht?
        'What did you do on Sunday?'
        b. Was hast du denn am Sonntag gelesen?
        'What did you read on Sunday?'

         Zeitung/Die Welt habe ich gelesen. 'I read the newspaper/Die Welt.'

1.2   a. Seid ihr noch ausgegangen? 'Did you go out afterwards?'
        b. Was habt ihr getrunken? 'What did you drink?'

         Ein Bier/Ein Jever haben wir getrunken. 'We drank a beer/a Jever.'

1.3   a. Warum bist du so spät ins Bett gegangen?
          'Why did you go to bed so late?'
        b. Was hast du geguckt? 'What did you watch?'

         Fernsehen/"Wer wird Millionär" habe ich geguckt. 'I watched television/"Who Wants to Be a Millionaire?"'

Experiment 2 (production)

2.1   a. Warum warst du so lange weg? 'Why were you away so long?'
        b. Wohin hast du den Wagen gefahren?
        'Where did you drive the car to?'
        c. Was hast du in die Garage gefahren?
        'What did you drive into the garage?'

        Den Wagen/den Jaguar habe ich in die Garage gefahren.

        In die Garage habe ich den Wagen/den Jaguar gefahren.

        Ich habe den Wagen/den Jaguar in die Garage gefahren.

'I drove the car/the Jaguar into the garage.'

2.2   a. Was hast du gestern den ganzen Tag gemacht?
        'What did you do the whole day yesterday?'
        b. Wohin hast du die Bänder/den Roman gestellt?
        'Where did you put the books/the novel?'
        c. Was hast du ins Regal gestellt?
        'What did you put in the bookcase?'

        Die Bänder/den Roman habe ich ins Regal gestellt.

        Ins Regal habe ich die Bänder/den Roman gestellt.

        Ich habe die Bänder/den Roman ins Regal gestellt.

        'I put the books/the novel in the bookcase.'

2.3   a. Warum warst du gestern in der Stadt?
        'Why were you in the city yesterday?'
        b. Was hast du deiner Oma geschenkt?
        'What did you give as a present to your granny?'
        c. Wem hast du Blumen/Rosen geschenkt?
        'To whom did you give flowers/roses?'

        Blumen/Rosen habe ich meiner Oma geschenkt.

        Meiner Oma habe ich Blumen/Rosen geschenkt.

        Ich habe meiner Oma Blumen/Rosen geschenkt.

        'I gave flowers/roses to my granny.'

Experiments 3–5 (production and perception)

3.1   a. Warum hat der Vortrag nicht stattgefunden?
        'Why didn't the talk take place?'
        b. Was hat der Pförtner verloren? 'What did the doorman lose?'
        c. Was haben sie/was hat er verloren?
        'What did they/he lose?'

Den Eingangsschlüssel haben sie verloren.

'They lost the front door key.'

Den Eingangsschlüssel hat der Pförtner verloren.

'The doorman lost the front door key.'

3.2   a. Wieso kommst du so spät? 'Why are ou so late?'
       b. Was haben sie gemacht? 'What did they do?'
       c. Was hat die Polizei gemacht? 'What did the police do?'

       Eine Alkoholkontrolle haben sie gemacht.

       Eine Alkoholkontrolle hat die Polizei gemacht.

       'The police were stopping drivers to test for alcohol consumption.'

3.3   a. Weswegen beklagen sich deine Nachbarn?
       'Why are your neighbors complaining?'
       b. Was haben sie wieder mal erhöht?
       'What did they raise again?'
       c. Was hat der Hauswirt wieder mal erhöht?
       'What did the landlord raise again?'

       Die Miete haben sie wieder mal erhöht.

       Die Miete hat der Hauswirt wieder mal erhöht.

       'The landlord/they raised the rent again.'

3.4   a. Wird in China die Natur besonders geschützt?
       'Is the environment in China especially protected?'
       b. Was haben sie da gebaut?
       'What did they build?'
       c. Was hat die Industrie-Lobby da gebaut?
       'What did the industry lobby build?'

       Den größten Damm der Welt haben sie da gebaut.

       Den größten Damm der Welt hat die Industrie-Lobby da gebaut.

       'They/the industry lobby built the largest dam in the world.'

3.5   a. Warum haben die meisten Lehrer die Linkspartei gewählt?
       'Why did most teachers vote for the leftist party?'
       b. Was haben sie gekürzt?
       'What did they cut?'
       c. Was hat das Ministerium gekürzt?
       'What die the ministry cut?'

       Die Löhne haben sie gekürzt.

       Die Löhne hat das Ministerium gekürzt.

       'They/the ministry cut the wages.'

Caroline Féry and Heiner Drenhaus
University of Potsdam
Institute of Linguistics
Karl-Liebknecht-Str. 24-25
14476 Golm
Germany
caroline.fery@googlemail.com
http://www.sfb632.uni-potsdam.de

Focus Asymmetries in Bura[*]

Katharina Hartmann*, Peggy Jacob* and Malte Zimmermann[+]

(*Humboldt University and [+]University of Potsdam)

This article presents the central aspects of the focus system of Bura (Chadic), which exhibits a number of asymmetries: Grammatical focus marking is obligatory only with focused subjects, where focus is marked by the particle *án* following the subject. Focused subjects remain in situ and the complement of *án* is a regular VP. With non-subject foci, *án* appears in a cleft-structure between the fronted focus constituent and a relative clause. We present a semantically unified analysis of focus marking in Bura that treats the particle as a *focus-marking copula* in T that takes a property-denoting expression (the background) and an individual-denoting expression (the focus) as arguments. The article also investigates the realization of predicate and polarity focus, which are almost never marked. The upshot of the discussion is that Bura shares many characteristic traits of focus marking with other Chadic languages, but it crucially differs in exhibiting a structural difference in the marking of focus on subjects and non-subject constituents.

Keywords: Afro-Asiatic, focus asymmetries, argument/adjunct focus, predicate focus, polarity focus, cleft, focus copula

1 Introduction

The present article provides an in depth description of focus and focus marking in Bura, an Afro-Asiatic language belonging to the Biu-Mandara branch of the Chadic languages. Bura does not mark focus consistently on all constituents, nor

does it mark focus in a uniform way. The Bura focus system exhibits two kinds of asymmetries with respect to focus marking. The first concerns focus marking on verbal and non-verbal categories, respectively: Focus on non-verbal categories is marked syntactically, whereas focus on verbs and VPs goes typically unmarked. There are two exceptions to this generalization. First, there are semantically motivated instances of verbal reduplication, which express an iteration or intensification of the event denoted by the verb, and which often makes the verb meaning more prominent as a side-effect. Second, polarity focus can be marked by a special particle in the perfective aspect. The second asymmetry concerns a difference between focused subjects, which are obligatorily marked for focus, and focused objects and adjuncts, for which focus marking is optional. Moreover, we argue that grammatical focus marking on subjects and non-subjects, if present, involves two different syntactic structures. The objective of the present article is mainly to give an adequate descriptive account of the focus system of Bura. We hope to provide a deeper theoretical analysis of the observed facts in future work.

Bura is spoken by approximately 250.000 speakers in the Nigerian states of Borno and Adamawa (estimation by Ethnologue in 1987). It is a tone language with two level tones, high and low.[1] Syntactically, Bura is an isolating language with the basic word order SVO. The only systematic description of Bura is Carl Hoffmann's grammar from 1955. In addition, there is an online dictionary on Bura by Roger Blench (1999), which is based on a missionary dictionary from 1950. The work presented in the present article is based on

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[1] The restriction to two level tones is at odds with claims in Blench (1999) to the effect that Bura distinguishes three level tones, High, Mid, and Low. Unfortunately, Blench (1999) does not provide evidence for this claim, for instance, in form of minimal triplets. In an acoustic investigation of our recorded corpus samples, we were unable to find evidence for such a three-way distinction. See also Keating & Esposito (2006), who concentrate only on High and Low tones in a phonetic study of Bura tones.

elicitations from Mr Chris Mtaku, a native Bura speaker from Garkida, the capital of Adamawa State.

The article is structured as follows. In Section 1.1, we provide a definition of focus as an information-structural category. Section 2 provides an overview of focus-marking of non-verbal categories in Bura, i.e. on subjects, objects, and adjuncts. Section 2.1 shows that focused subjects are obligatorily followed by the focus-marking particle *án*. Section 2.2 shows that focus marking on objects and adjuncts is optional. If marked for focus, these constituents appear in the left periphery of the clause in a cleft-like structure that involves the particle *án* and a relative clause. Section 2.3 discusses the (semantic) nature of the particle *án* in more detail. The particle is analysed as a special instantiation of a copula in T, which comes with its own set of presuppositions. Building on the analysis of *án*, we argue in section 2.4 that subject focus and (non-verbal) non-subject focus involve different syntactic structures. Subjects are focus-marked in their canonical position in Spec,TP. Non-subjects that are focus-marked are realized ex-situ in a cleft-like structure. Section 3 turns to the grammatical expression of verbal and polarity focus. We show that focus on verbs and VPs is unmarked in most cases. Polarity focus can be marked by the particle *ku*, which is classified as a marker of perfectivity in Hoffmann (1955). Section 4 shows that the formal strategies of focus marking in Bura show up with various pragmatic uses of focus, such as e.g. with new-information focus, selective and contrastive focus. This finding argues for a unified category of focus. Section 5 concludes.

1.1 Focus and Focus-Marking

We adopt the following semantic definition of focus for tone and intonation languages, which is independent of grammatical focus marking: Focus on a constituent α ($[\alpha]_F$) invokes a set A of alternatives to α, indicating that members of A are under consideration (Rooth 1985). Depending on the interaction of α

with other alternatives, a semantic focus can serve various pragmatic functions: For instance, a focus is *corrective* if α replaces an element of A that was previously introduced into the common ground (CG), see (1a). With CG we refer to the set of assumptions accessible to all interlocutors, where the content of the CG is typically determined by the linguistic context preceding α. A focus is *selective* if α introduces an element of A into the CG and some elements of A are made explicit, see (1b). A focus expresses *new-information* if α introduces an element of A into the CG and the members of A are left implicit, see (1c).

(1)   a.   (Peter painted his bicycle red.) No, he painted it [blue]$_F$.

      b.   (Did Peter paint his bicycle red or blue?) He painted it [blue]$_F$.

      c.   (Which color did Peter paint his bicycle?) He painted it [blue]$_F$.

      d.   α = blue, A = {blue, red, green, pink,…}

The alternative sets for (1a–c) are identical as shown in (1d). This shows that the foci in question do not differ semantically, but only pragmatically in the sense illustrated above (cf. e.g. Rooth 1992). The information-structural category of focus defined above is a universal category, which may or may not be grammatically encoded in a language. The grammatical devices for marking focus, however, vary considerably across the world's languages. One particular system of grammatical focus marking is discussed in the present article.

2   Focus on Arguments and Adjuncts

This section discusses the realization of focus on non-verbal constituents (or: terms) in Bura. We concentrate on the realization of focus on subjects, objects, and adjuncts, which have the categorial status of NP or XP. We look at the

realization of subject focus in 2.1, and at the realization of non-subject focus in 2.2, discussing differences and similarities. Section 2.3 investigates the syntactic distribution and meaning contribution of the particle *án*, which is obligatory with subject focus and almost obligatory with grammatically marked focus on non-subjects.

2.1 Subject Focus

The canonical Bura sentence has SVO word order. The verb is not inflected. In all but the perfective aspect, the verb is preceded by an aspectual marker in AspP: *akwá* expresses an ongoing action (progressive), the morphemes *a*, *ta* or *áta* express a future action, and *aná* a habitual action. The perfective aspect is unmarked.[2] Bura neither shows overt morphological agreement nor case marking. Bura is a tone language with 2 level tones, a high (marked as *v́*), and a low tone (unmarked). The example in (2) illustrates a canonical Bura sentence in the progressive:[3]

(2)   Tsá akwá tá   díva mhyi.
        3SG PROG cook   mush sorghum
        'He is cooking sorghum mush.'

If a subject is focused, it must be followed by the particle *án* across all aspects. This is shown in the question-answer pairs in (3) and (4) for the (unmarked) perfective and in (5) and (6) for the progressive aspect. The focused constituents

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[2] The unmarkedness of the perfective may be a recent development. According to Hoffmann (1955:317), perfective aspect was regularly marked by the aspectual marker *ku*. We will return to the nature of *ku* in present-day Bura in section 3.2.

[3] The following abbreviations are used: DEF = definite, FUT = future, PRT = particle, PROG = progressive, REL = relative marker, COP = (focus) copula, Q = question marker, SG = singular, PL = plural, 1,2,3 = person marker, POSS = possessive, COND = conditional, POL = polarity, TOT = totality, EXIST = existential marker.

are reproduced in bold face in the Bura original sentences and in their English translations.

(3) Q: **Wa** án tá   díva rí?   A: **Ládi** án tá   díva ní.
       who PRT cook mush Q   L.   PRT cook mush DEF
       '**Who** cooked mush?'   '**Ladi** cooked mush.'

(4) Q: **Wa** án kwasá tsír   ní   rí?
       who PRT chew beans DEF Q
       '**Who** ate the beans?'

    A: **Mwala laga** án   kwasá tsír   ní.
       woman some PRT chew   beans DEF
       '**A woman** ate the beans.'

(5) Q: **Wa** án   akwá masa táku ní   rí?
       who PRT PROG buy   horse DEF Q
       '**Who** is buying the horse?'

    A: **Ládi** án   akwá masa táku ní.
       L.   PRT PROG buy   horse DEF
       '**Ladi** is buying the horse.'

(6) Q: **Wa** án   akwá kumshi ní   rí?
       who PRT PROG laugh   DEF Q
       '**Who** is laughing?'

    A: **Mwala** ní   án   akwá kumshi ní.
       woman DEF PRT PROG laugh   DEF
       'The woman is laughing.'

Notice that the particle *án* occurs both in the *wh*-questions providing the focus context, where it follows the interrogative expression *wa* 'who', as well as in the corresponding answers.[4] Notice that the sentence-final question particle *rí* is obligatory. This suggests that it is this element, and not the interrogative

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[4] The *wh*-expression *wa* 'who' and *án* are sometimes amalgamated, see e.g. (16Q) below.

expression itself, which gives a *wh*-question its interrogative force. The following data show that the particle *án* is obligatory with focused (*wh*-) subjects: its absence in the question results in ungrammaticality, and its absence in the corresponding answer leads to infelicity in the question-context.

(7) Q: **Wa** *(án) dlábwa kíla ní   rí?
        who PRT beat   dog DEF Q
        '**Who** beat the dog?'

    A: **Ládi** #(án) dlábwa ní.
        L.   PRT beat   3SG
        'Ladi beat it.'

(8) Q: **Wa** *(án) kwasá tsír   ní   rí?
        who PRT chew beans DEF Q
        '**Who** ate the beans?'

    A: **Mwala laga** #(án) kwasá tsír   ní.
        woman some   PRT chew beans DEF
        '**A woman** ate the beans.'

To summarize, a focused subject must appear in the canonical sentence-initial position and is followed by the particle *án*. This particle obligatorily marks the focus status of the subjects in (3) to (8). As there is no indication of (possibly vacuous) syntactic displacement whatsoever, with the subject remaining in the canonical sentence-initial position, it is correct to conceive of *án* as a focus-marking particle. The morpho-syntactic realization of subject focus is given schematically in (9):

(9)   [$_{XP}$ Ladi [$_Y$ án] [$_{ZP}$ akwá masa táku ní]]

Three interrelated questions for the analysis of subject focus in Bura arise: (i.) What is the structural position of the FM *án* in (9)? In particular, is *án* the

functional head of a focus projection FocP, or is it a (special) copula in T? (ii.) What is the syntactic position of the focused subject in (9)? In particular, is the subject located in the canonical subject position Spec,TP, or has it moved vacuously to the specifier of a focus projection FocP? (iii.) What is the syntactic status of the constituent ZP to the right of *án*? In particular, is it just a VP, or is it a TP selected by the focus projection? In section 2.4, we argue that focused subjects are located in their canonical position, Spec,TP. The focus-marking element *án* is not the syntactic Foc-head of a functional projection FocP. Rather, it is analysed as a focus copula in T, which triggers typical focus presuppositions. As a result, *án* selects for a plain VP in the case of subject focus, the minimal assumption from a syntactic point of view (see e.g. Grimshaw 1997).

In the next section, we investigate focus on non-subjects. As will emerge, focus on non-subjects need not be grammatically marked. If focus on objects and adjuncts is marked, though, the focus constituent occurs in a cleft-structure involving a relative clause. Focused non-subjects are thus marked differently from focused subjects, at least on the face of it.

2.2   Focus on Objects and Adjuncts: Ex Situ and In Situ Realizations

Focused objects and adjuncts can be realized in two ways. The focused constituent can appear either in its canonical position (in situ), or it can appear sentence-initially (ex situ). We first illustrate for in situ focus. As shown in (10A) and (11A), focused direct objects may stay in their basic post-verbal position, same as the corresponding *wh*-expressions.[5] The same holds for indirect and benefactive objects as in (12).

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[5]   The existence of unmarked in situ focus with non-subjects is attested from a variety of West-Chadic languages. In Hausa, for instance, focus can be marked syntactically by

(10) Q: Magirá akwá tá   **mi**   rí?
         M.   PROG prepare what   Q
         '**What** is Magira preparing?'

     A: Magirá akwá tá   **díva mhyi**.
         M.   PROG prepare mush sorghum
         'Magira is preparing **sorghum mush**.'

(11) Q: Ga   bara kəl **wa** rí?
         2SG wanttake who Q
         '**Who** do you want to marry?'

     A: Íyá bara kəl **Kúbíli**.
         1SG wanttake K.
         'I want to marry **Kubili**.'

(12) Q: Ga   akwá kica mwata aká **wa** rí?
         2SG PROG wash car   for who Q
         '**Who** are you washing the car for?'

     A: Íyá akwá kic-ari[6]   aká **baba ná**.
         1SG PROG wash-3SG   for   father POSS.1SG
         'I am washing it for **my father**.'

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means of fronting (cf. Newman 2000). But focused constituents may also remain in situ, as first noticed by Jaggar (2001) and illustrated in (i).

(i) **Mèe** su-kà   kaamàa?   Sun   kaamà [DP **dawaakii**] (nè).
     what 3PL-REL.PERF catch   3PL.PERF catch   horses   PRT
     'What did they catch?'   'They caught HORSES.'

It appears that in situ focus in Hausa is not only syntactically unmarked, but unmarked in general (cf. Jaggar 2001, 2006, Green & Jaggar 2003, Hartmann & Zimmermann 2007a).

6   The linear translation of *kic-ari* "wash-3SG" follows Hoffmann (1955:268) who claims that *-ari* is a verbal suffix that signals that the unexpressed complement NP is anaphorically linked to a discourse antecedent.

Notice that in situ focus cannot be marked by the focus copula *án*, and probably not by prosodic strategies either.[7] (13A2) with *án* following the focused object NP in situ is ungrammatical.

(13) Q: Ga   akwá sá   **mi**   rí?
         2SG PROG drink what Q
         '**What** are you drinking?'

   A1: Íyá akwá sá   **yímí**.
              1SG PROG drink water
              'I am drinking **water**.'

   A2: * Íyá akwá sá **yímí án**.

Focused adjuncts can also occur in situ. In (14A), the focused locative adverb is found in its canonical clause-final position even though the *wh*-pronoun in (14Q) appears sentence-initially, in an ex situ position. (Note that *wh*-adjuncts can also appear in situ, cf. Hoffmann 1955:177f). (15A) illustrates in situ focus of temporal adverbs, where the alternatives are explicitly given in the preceding question.

(14) Q: **Ama** án   tí   íyá á   mjá masta tomáto rí?
         where PRT REL 1SG FUT able buy   tomato Q
         '**Where** can I buy tomatoes?'

   A: Ga   á   mjá mast-ari **akwá kwásuku**.
             2SG FUT able buy-3SG at   market'
             'You can buy them **at the market**.'

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7   Whether or not in situ focus is prosodically marked in Bura has to await a detailed phonetic analysis. At the moment, we tentatively assume — based on accoustic impressions alone — that in situ focus is not made prominent by prosodic features, such as e.g. pitch accent, phrasing, or intonational breaks.

(15) Q: **Nawá** án tí   tsá masta tsír ní   rí,
      when PRT REL 3SG buy   beans DEF Q
      Litinúwa núwa Talakúwa rí?
      Monday or   Tuesday Q
      '**When** did she buy the beans, on Monday or on Tuesday?'

   A: Tsá masta **vir Litinúwa**.
      3SG buy   day Monday
      'She bought (them) **on Monday**.'

Next to the unmarked in situ-strategy, focused objects and adjuncts can also be realized *ex situ*, in which case they are explicitly marked for focus: The focused constituent is located in the sentence-initial position, where it is followed by the particle *án* and what appears to be a relative clause introduced by the non-subject relative marker *tí*. The data in (16) and (17) illustrate the ex situ strategy for focused direct objects.

(16) Q: **Mi** án [tí   Magirá akwá tá   ní] rí?
      what PRT REL M.   PROG prepare DEF Q
      '**What** is Magira preparing?'

   A: **Díva mhyi**   án [tí   tsá akwá tá].
      mush sorghum PRT REL 3SG PROG prepare
      'It is **sorghum mush** that she is preparing.'

(17) Q: **Wa.n**   [tí   ga bara kəla] rí?
      who.PRT   REL 2SG want take   Q
      '**Who** do you want to marry?'

   A: **Kúbíli** án [tí   íyá bara kəl-ari].
      K.   PRT REL 1SG want take-3SG
      'It is **Kubili** that I want to marry.'

In (16) and (17), the focus constituent is realized initially, while the backgrounded portion, or out-of-focus part, of the clause is realized in form of a

relative clause. Thus, the linear order of *wh*-questions and sentences with ex situ focus is *focus/wh* > *án* > *RelC*.

As for the focus-indicating element *án*, it is strongly preferred, but not 100% obligatory in *wh*-questions, see the discussion of (20) and (21) below. Given that the marked information-structural status of the initial *wh*-constituent can be identified on the basis of lexical and structural considerations alone, the occasional absence of *án* in *wh*-question is not surprising. In the corresponding answers, however, the focus marker *án* appears to be close to obligatory. The omission of *án* in (16A) and (17A) leads to infelicity in the contexts provided by the preceding *wh*-questions.[8] Note that (16A') and (17A') are grammatical on a different interpretation, namely that of complex NPs containing a relative clause. However, they are infelicitous as answers to (16Q) and (17Q).

(16A') Díva mhyi tí tsá akwá tá.
      ONLY READING: '(the) mush that she is preparing'
      NOT: 'It is mush that she is preparing.'

(17A') Kúbíli tí íyá bara kəl-ari.
      ONLY READING: '(the) Kúbíli that I want to marry'
      NOT: 'It is Kúbíli that I want to marry.'

Based on the optional absence of *án* in ex situ *wh*-questions (see below), and given the existence of an additional relative reading for the *án*-less variant, we tentatively conclude that the presence of *án* is not so much governed by a strict grammatical constraint. Instead, its presence is motivated by a principle of parsing economy along the lines of Bornkessel-Schlesewsky & Schlesewsky (2007). The presence of *án* in (16A) and (17A) blocks the undesired relative interpretation early on in the parse.

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[8] According to Hoffmann (1955:165), the occurrence of *án* was optional in these constructions in earlier days.

Focused adjuncts can occur ex situ as well. (18A) is the ex situ variant of (14A), in which an entire PP is realized in sentence-internal position. (19) gives an example of a focused temporal adverbial in the ex situ position.

(18) Q: **Ama** án tí íyá á mjá masta tomáto rí?
        where PRT REL 1SG FUT able buy tomato Q
        '**Where** can I buy tomatoes?'

     A: **Akwá kwásúku** án tí ga á mjá mast-ari.
        at market PRT REL 2SG FUT able buy-3SG
        'It is **at the market** where you can buy them.'

(19) Q: **Nawá** án tí mwala ní sím sú.r símá ná tsi kira rí?
        when PRT REL woman DEF eat thing.of eating of endtop Q
        'When did the woman eat the last time?'

     A: **Náha** án tí tsá sím sú.r símá ná tsi kir-ari.
        yesterday PRT REL 3SG eat thing.of eating of end top-3SG
        'It is **yesterday** that she ate the last time.'

Under certain conditions, ex situ focus is also possible across sentence boundaries. This is illustrated for *wh*-questions in (20a) and (21a). In each case, the ex situ *wh*-expression functions as the object of an embedded clause. The b-examples show the in situ variants of the long extractions. Notice that the ex situ variants are formed without the focus marker *án*. In our view, this further supports the view that there is no absolute structural requirement for ex situ foci to co-occur with *án*.

(20) a. **Mi** tí gíri líbíla akwá mtaku [ka gíri wuta] rí?
        what REL 2PL go.out to bush COND 2PL see Q
        '**What** did you go to the bush to see?'

     b. Gíri líbíla akwá mtaku ka gíri wuta **mi** rí?

(21) a. **Mi**   tí   gíri átá bara [ki   hárá aká Magirá] rí?
          what REL 2PL FUT wish COND.1SG do   to   M.   Q
          '**What** do you want that I do to Magira?

     b.   Gíri átá bara ki hárá **mi** aká Magirá rí?

The observant reader will notice that in both cases, the embedded sentence is introduced by the conditional complementizer *ka/ki* used with subjunctive or non-finite clauses in Bura. Viewed from a cross-linguistic perspective, this possibility of long extraction from within subjunctive clauses is not surprising: It is well-known that such clauses are less restrictive than their indicative (finite) counterparts when it comes to extraction, cf. Pesetsky (1982).

Summing up, focus on non-subjects need not be grammatically marked in Bura. If focus marking applies, this happens in form of a cleft-like structure involving a relative clause. In section 2.4, we present an analysis of such ex situ focus constructions as reverse pseudoclefts.

2.3   Distribution and Meaning of the Particle *án*

In the preceding sections, it was shown that *án* can occur in two syntactic environments. With subject focus, *án* occurs between the subject and the predicative part of the clause. This predicative part contains the verb and its arguments plus adjuncts, and can plausibly be analysed as a plain VP. With *ex situ* non-subject focus, *án* occurs between the sentence-initial focus constituent and a relative clause. Most relevant for the analysis to come, the particle *án* is found in a third environment: *Án* can optionally occur in non-verbal predicative constructions. This is shown in (22ab), where *án* occurs between the subject and the predicate and has a specific semantic effect: It singles out the subject from among a group of alternatives.

(22) a. Mda nghínda ní   **án** mdír hyípa.
       man DEM   DEF PRT man   teach
       '**that** man over **there** is a teacher.' (when picking a man from a group
       of people)

    b. Mbwá   nghíní **án** mbwar   aduá.
       building DEM   PRT building prayer
       '**this** building is a church.'

The predicative sentences in (22) are the marked counterparts of the canonical predicative constructions without *án*, such as (23) and (24), with nominal and adjectival predicates, respectively:

(23) a. Mda nghínda ní   mdír hyípa.   b. Tsá líkítá.
       man DEM   DEF man   teach   3SG doctor
       'That man over there is a **teacher**.'   'He is a **doctor**.'

(24) a. Ki   ní   wálá.   b. Sálvía wálá.
       house DEF big   Sálvía big/important
       'The house is **big**.'   'Sálvía is **big/important**.'

The sentences in (23) and (24) illustrate the default way of predicating a non-verbal property of a subject in Bura. There is no particle *án* and focus is on the predicate by default.

    Coming back to the syntactic distribution of *án*, its three licensing environments are summed up schematically in (25a–c):

(25) a. [SUBJ [án [VP]]]   [*subject focus*]

    b. [OBJ/ADJ [án [CPREL tí …]]]   [*non-subject focus, ex situ*]

    c. [SUBJ [án [AP, NP]]]   [*predicative construction*]

From a syntactic point of view, the three constructions do not seem to have much in common, seeing that *án* combines with a VP, a relative clause, and a non-verbal predicate, respectively. Semantically, however, all three complements share an important property: The denotations of all of them are of semantic type <e,t>, which is the semantic type of predicates denoting individual properties. Notice that the ability to combine with an expression of type <e,t> is a characteristic semantic property of copular elements such as English *be*, see Williams (1983), Partee (1986).

Type-considerations aside, the presence of *án* makes a twofold contribution to the semantic interpretation. First, a comparison of the minimal pair in (22a) and (23a) suggests that *án* introduces focus semantics in form of a presupposition invoking alternatives. This shows clearly from the additional comment on (22a), which was volunteered by our consultant. If the presence of *án* invokes alternatives, its presence with subject foci and non-subject foci that are grammatically marked follows directly. In addition to introducing focus alternatives, the presence of *án* frequently gives rise to a uniqueness implicature to the effect that the denotation of the focus constituent is the only individual satisfying the background predicate. Not surprisingly, then, *án* is obligatory in the superlative construction (26a), in which only one individual can instantiate the property in question to a maximal degree. Likewise, *án* must co-occur with the exhaustive focus element *daci* 'only' in (26b):

(26) a.   Sálvía *(**án**) ka   wálkur ta   sháng akwá   di   ní.
           S.   PRT with bigness than all   among town DEF
           'Salvia is the biggest/most important in town.'

      b.   Audu *(**án**) mdír hyípa akwá dini   *daci*.
           A.   PRT man   teach in   town only
           'Only Audu is teacher in town.'

The uniqueness effects observed with *án* also account for those rare cases where *án* is absent in ex situ *wh*-questions, see section 2.2. The generalization seems to be that *án* can be absent in a question if the form of the question element warrants the inference that there is more than one individual satisfying the question predicate. In (27), the complex *wh*-expression *kúgá mi* asks for a plurality of individuals. This is one of the few elicited examples in our corpus where the consultant volunteered a question without *án*. A similar point is made in (28) from Hoffmann (1955:163), which shows that *án* occurs in singular identity questions, but not in plural ones. Notice that (28b) represents one of the very few exceptions from the generalization that focused subjects must always be followed by *án*.

(27) *Kúgá mi*   tí   ga   masta   rí?
      also what REL 2SG buy   Q
      'What all did you buy?' → *plural answer expected*

(28) a.   Ga án   wa   rí?
          2SG PRT who Q
          'Who are you (sg.)'?

    b.   Gíri wa   rí?
         2PL   who Q
         'Who are you (pl.)'?

Based on the data in (26) to (28), we conclude that the presence of *án* leads to an implicature of uniqueness, albeit a weak one. We will have to leave it open whether this implicature is a conventional implicature, arising as part of the lexical meaning of *án*, or whether it is the result of a more general pragmatic process of relevance-based inferring, as explicated in van Rooij & Schulz (2006).

Summing up, the particle *án* can occur in three different syntactic environments, It can occur with VPs (or TPs), relative CPs and predicative NPs/APs alike. At the same time, it is possible to give a unified semantic characterization in terms of semantic types: *án* always combines with property-denoting expressions of type <e,t>. Furthermore, its presence has a twofold semantic effect: it overtly introduces the focus presupposition in (21), and it triggers a (weak) implicature of uniqueness.

2.4 An Asymmetric Analysis of Focus Marking on Subjects and Non-Subjects

In this section, we present a tentative analysis of syntactic focus marking on non-verbal categories in Bura. The central claim is that grammatical focus-marking on subject and non-subject terms involves a structural asymmetry: Focused subjects occur in their canonical position in Spec,TP and their focus status is indicated by the presence of a copular element *án* in T. In contrast, focus on non-subject terms is syntactically marked: The focused constituent occurs in a cleft structure, with *án* occupying the T-position of the matrix clause.

In sections 2.1 and 2.2 it was shown that focused subjects *must* and focused non-subjects *can* occur in a marked syntactic configuration. The relevant syntactic structures are given in (29ab) again:

(29) a. **Ládi** án tá díva ní.   [*SUBJ focus*]
L.   COP cook mush DEF
'**Ladi** cooked mush.'

b. **Kúbíli** án tí íyá bara kəl-ari.   [*NON-SUBJ focus*]
K.   COP REL 1SG want take-3SG
'It is **Kubili** that I want to marry.'

A comparison of the structures in (29ab) shows that focused subjects and non-subjects both occur in the left periphery. The focused constituents are followed by the focus-marking particle *án* and the backgrounded part of the clauses. The differences between the two structures concern the syntactic category of the background, viz. a VP-predicate in (29a) and a relative CP in (29b). It is this categorial difference between the predicates that mainly motivates the asymmetric analysis proposed. For focused subjects, we make the minimal assumption that they appear in their canonical position. We thus follow Grimshaw (1997), where the same argument is made for *wh*-subjects in English. The presence of the focus-marking particle *án* in T is the only indication of the focus-status of subjects, cf. (30a). Notice that T remains empty if no constituent is focus-marked, i.e. with subject topics or in situ foci. Focused non-subjects that are grammatically marked for focus differ from focused subjects in that they do not occur in their canonical position. In addition, the predicate that follows the focus-marking particle is not a VP but a relative clause introduced by the relative marker *tí*. This gives rise to an analysis of grammatically marked non-subject focus in terms of a cleft structure, cf. (30b). In (30b), the particle *án* is located in T and connects the focused constituent and the backgrounded relative clause syntactically and semantically. The function of *án* is thus fully parallel to that of copular elements in German or English cleft constructions. Following Sabel & Zeller (2006), we therefore treat *án* as a *focus copula* located in T. By extension, *án* will also be a focus copula in the subject focus case in (30a), even though the clause contains a full lexical verb. From now on, all occurrences of *án* will be glossed as F-COP.

(30) a.   [TP *Ládi*   [T **án**] [VP tá díva ní]]   [*SUBJ focus*]

     b.   [TP *Kúbíli*   [T **án**] [CPRel **tí** íyá bara kəlari]]   [*NON-SUBJ focus*]

Notice that our characterization of copular elements is based solely on semantic considerations. Copular elements are functional elements that serve to combine a predicate-denoting expression with an individual-denoting expression. This semantic characterization is at odds with more syntax-based characterizations of copulas as (i.) verb-like elements that occur in predicative constructions in the absence of a full lexical verb, or (ii.) elements that obligatorily occur in predicative constructions.[9] This notwithstanding, it is of course possible to make a weaker claim and conceive of *án* as a focus-marking expression in T.[10]

Instead of assuming a focus copula in T, one could also advance a focus phrase (FocP) analysis (Brody 1990, Rizzi 1997). The particle would be a focus marker in the head position of FocP and focused subject and non-subject constituents would A'-move to Spec,FocP where movement is triggered by the need to check an un-interpretable (contrastive) FOC-feature (Chomsky 1995, É. Kiss 1998). In the remainder of this section, we argue against such a unified syntactic analysis and give two syntactic and a semantic argument in support of an asymmetric analysis of focus-marking on subjects and non-subjects. We show that syntactic focus marking on subjects and non-subjects involves two fundamentally different structures, namely a canonical syntactic structure with

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[9] In this connection, a reviewer suggests that *án* cannot be plausibly analyzed as a copula element because it does not occur in default predicative constructions, such as e.g. (23) and (24). If this line of reasoning were correct, one could not treat the Russian verb *byt'* as a copula either, as this element is replaced by a zero copula in the present tense, cf. (iab):

(i) a. Ona   v dome.   b. Ona   byla   v dome.
         3sg.f in house   3sg.f was   in house
         'She is in the house.'   'She was in the house.'

The alternation of zero-copula and *án* in Bura resembles the Russian alternation, but unlike in Russian it is not governed by aspect or tense, but by the focus structure of the predicative construction.

[10] As pointed out in Stassen (1997), focus markers and copular elements are diachronically, or even synchronically related in many languages. This fact often hinders the assignment of an unambiguous status as copula or focus marker to focus-marking expressions. We therefore postpone a more detailed analysis of Bura *án* to another occasion.

focused subjects, and a reverse pseudocleft[11] with focused non-subject terms. The analysis hinges to a great extent on the analysis of the focus-marking element *án* as a special focus copula located in T.

The first syntactic argument for an asymmetric treatment of subject and non-subject focus in Bura is that sentences with focused non-subjects contain a relative marker indicating the presence of a relative clause (31b), but sentences with focused subjects do not (31a). As shown in (31a), subject relative clauses in Bura must be introduced by the relative marker *ná*. (31b) shows that all oblique relative clauses, which quantify over grammatical functions other than the subject, are introduced by the relative marker *tí* (which is optionally preceded by *ná*, see Hoffmann (1955:160)).

(31) a. Bzir ní sím mtíka [$_{CP}$ ***(ná)**   msira   ala   ga   náha]   ní.
         boy DEF eat chicken   REL$_{SUBJ}$ escape from 2SG yesterday DEF
         'The boy eats the chicken that escaped you yesterday.'   [*SUBJ-Rel*]

     b. Tsá á masta mtíka [$_{CP}$ **tí** Chrís akwá tsiya]   ní.
         3SG FUT buy chicken REL Ch. PROG slaughter DEF
         'He will buy the chicken that Chris is slaughtering.'   [*OBJ-Rel*]

     c. Íya wuta nga saka [$_{CP}$ **tí**   ga   akwá dlar bzir] ní.
         1SG see 2SG time   REL 2SG PROG help boy   DEF
         'I saw you when you were helping the boy.'   [*MOD-Rel*]

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[11] Following Collins (1991) and Lambrecht (2001) a pseudocleft ("reverse WH-cleft" in Lambrecht's terminology) is a cleft where a free relative clause precedes the clefted constituent (i). In a reversed pseudocleft, the linear order of clefted constituent and predicate is reversed such that the free relative follows the clefted constituent (ii).

(i)   What Peter bought is a dotted tie.

(ii)   A dotted tie is what Peter bought.

Non-subject foci in Bura are in full parallel to the structure in (ii), which motivates their analysis as reverse pseudoclefts.

What is crucial for our purposes is that focused non-subjects feature the relative marker typical of non-subject relative clauses (32b), but there is no sign of relative clause syntax in the case of focused subjects (32a).

(32) a. $[_{TP} SUBJ_{FOC}$ $[_T$ **án**$]$ $[_{VP} \ldots]]$

    b. $[_{TP} \neg SUBJ_{FOC}$ $[_T$ **án**$]$ $[_{RelCP}$ **tí** $\ldots]]$

It follows from the structural asymmetry between subject and non-subject focus that only instances of the latter will involve a cleft structure. Since it is a free relative clause that follows the clefted constituent, (32b) shows the characteristic structure of a reverse pseudocleft, whereas (32a) has the structure of a regular declarative clause with an overt T head.

The second syntactic argument in support of an asymmetric analysis of term focus in Bura concerns the selectional properties of the focus copula *án*, which seem to be less restricted than those of functional heads, such as e.g. the Foc-head of FocP: If *án* follows a focused subject, it syntactically combines with a VP (32a). On the other hand, if it follows a focused non-subject it combines with a relative CP (32b). Thus, the particle *án* is more flexible in its syntactic behavior than functional heads, which typically select for a specific syntactic category (Chomsky 1986). This suggests that *án* does not head a FocP. Rather it behaves like a copula, which may also select for different syntactic categories as long as they are predicates, cf. the English examples in (33):

(33) a.   Carlos **is** $[_{AP}$ tall$]$.

    b.   Carlos **is** $[_{NP}$ a guerillero$]$.

    c.   Carlos **is** $[_{RelCP}$ what you call a guerillero$]$.

(34) shows again that Bura *án* shows up in the same environments as the English copula *be*: it occurs before adjectival and nominal predicates, cf. (32ab), with an additional semantic restriction to the effect that the subject denotation must be a unique individual, cf. section 2.3. Second, *án* occurs in cleft constructions, cf. (32c). Different from English, the copula also appears before VP-predicates if the subject is focused, cf. (34d):

(34) a. Ki   nghíní **án**   [AP wálá tá   sháng] akwá di   ní.
          house DEM F-COP   big   than all   among town DEF
          'This is the biggest house in town.'

     b. Mda nghínda ní **án** [NP mdi.r   hyípa].
          man there   DEF F-COP   man.of teach
          'THAT man over THERE is a teacher.'

     c. Kúbíli_FOC **án** [RelCP tí   íyá bara kəl-ari].
          K.   F-COP   that 1SG want take-3SG
          'It is Kubili that I want to marry.'

     d. Ládi_FOC **án**   [VP tá   díva ní].
          L.   F-COP   cook mush DEF
          '**Ladi** cooked mush.'

This syntactic flexibility of the particle *án* makes an analysis as a functional head little plausible. Also recall from above that *án* is not a 100% obligatory with non-subject *wh*-questions. E.g, *án* can be missing if the form of the *wh*-expression makes clear that more than one individual satisfies the question predicate, cf. (35):

(35) Q: *Kúgá mi   tí   ga   masta rí?*
          also   what REL 2SG buy   Q
          'What all did you buy?' → *plural answer expected*

The optional absence of *án* would be unexpected if it were a FOC-head. Assuming that it is the feature specification of the FOC-head that triggers movement of the focus constituent to Spec,FocP, such movement should not take place in the absence of *án*. Nonetheless, the object *wh*-expression occurs in ex situ position in (35). Notice that the occasional omission of *án* is compatible with a cleft analysis on the assumption that Bura has two copula elements, a covert default copula and a special focus copula that presupposes uniqueness.

Finally, observe that despite its syntactic flexibility, *án* shows a great uniformity in its semantics. The semantic type of all of its right-hand complements is the same: The standard semantic analysis of predicative APs or NPs, relative CPs, and plain VPs (without a subject trace) is that of property-denoting expressions of type <e,t>, cf. e.g. Heim & Kratzer (1998). The observed flexibility in the selectional requirements of *án* combined with the semantic restriction that the expression to the right of *án* be a property-denoting expression is the characteristic property of copular elements, see e.g. Williams (1983) and Partee (1986) on English *be*. Based on these syntactic and semantic similarities, then, we propose to treat the focus-marking particle *án* as a copula element located in T for subjects and non-subject terms.

To conclude, the central claim of our analysis of argument and adjunct focus marking in Bura is that there is a structural asymmetry between focus-marking on subjects and non-subjects (cf. Hartmann & Zimmermann 2007a on Hausa, and references therein). The two main findings supporting this claim are (i) the presence of a relative clause after a non-subject focus, which motivated a cleft analysis; (ii) the flexible selectional properties of the particle *án*, which showed its affinity to copula elements and made an analysis as a grammatical focus marker less plausible. This conclusion is backed up by the unified semantic behaviour of the particle which always takes predicates of type <e,t> as its complement. We did not discuss the question of whether Bura pseudoclefts are

base-generated or derived by movement, but we will take this question up in future work, see Hartmann & Zimmermann (in prep.).

3   Focus on Non-Nominal Categories

In this section, we address focus on non-nominal categories in Bura. We consider predicate focus and polarity focus in turn. As it will turn out in section 3.1, predicate focus, e.g. focus on the verb or the VP, cannot be marked by the focus strategies discussed in section 2. Hence, predicate focus is never syntactically marked. Occasionally, a focused verb can be morphologically enhanced by means of verbal reduplication. Given that verbal reduplication is a common means of expressing the iteration or intensification of an event in the languages of the world, we assume that this is the primary function of reduplication in Bura as well. The resulting focus prominence of the verb meaning would thus not follow from a separate focus-marking strategy. It would simply be a side-effect of a process triggered by an independent semantic motivation. In section 3.2 we consider polarity focus. In contrast to predicate focus, there is a way to express focus on the assertion at least in sentences in the null-marked perfective aspect. In such cases, polarity focus may be marked by the grammatical marker *ku*. We will argue that *ku* is not sui generis an aspectual marker of perfectivity (against Hoffmann 1955:317) but a genuine indicator of polarity focus.

3.1   Predicate Focus

Narrow focus on V and focus on VP is always realized in situ. Unlike with term focus, it cannot be marked by a syntactic strategy (ex situ, cleft). This is illustrated in (36) and (37) for verb focus.

(36) Q: **Mi** án   tí   tsá hárá ka   kum ní   rí?
         what F-COP REL 3SG do   with meat DEF Q
         '**What** did she do with the meat?'

     A1: Tsá **súltá** kum ní.
         3SG fry   meat DEF
         'She **fried** the meat.'

     A2: * Súltá án (tí) tsá kum ní.

(37)   Tsá **ndluwa** kákádu ní akwá kanti ní   daci ama tsá adí   **nta** wá.
         3SG collect book DEF at   shop DEF only but 3SG EXIST pay NEG
         'He only **collected** the book from the shop, he didn't **pay** for it.'

Focused VPs are also realised in situ, as witnessed in (38). Again, it is impossible that focused VPs appear in the sentence-initial cleft-position.

(38) Q: **Mi** án   tí   mwala ní   hárá rí?
         what F-COP REL woman DEF do   Q
         '**What** did the woman do?'

     A1: Mwala ní   **kwasá tsír**.
         woman DEF chew   beans
         'The woman **ate beans**.'

     A2: * **Kwasá tsír** án (tí) mwala ní.

One could assume that, given the absence of syntactic focus marking, focused predicates are prosodically marked, e.g. by prosodic phrasing, a pitch accent, or a more articulated shape of the tonal contours. Prosodic focus marking is attested in other tone languages (cf. Xu 1999 on Chinese, Kanerva 1990 on Chichewa). To our knowledge, however, Bura does not seem to make use of any of these prosodic focus strategies. There is no sign of prosodic prominence on a focused verb, or a focused in situ object, which leads us to conclude that in situ focus on predicates is not grammatically expressed in Bura. As a consequence,

Bura makes intensive use of pragmatic resolution strategies in order to identify in situ foci: Focused predicates and in situ non-subjects can only be identified by the information structure of the context.

Another consequence of the absence of focus marking with in situ focus is a high degree of focus ambiguity. A declarative clause such as (39) can be interpreted in the context of an object question, a question to the verb or the VP. The assignment of focus structure to (39) is only possible via the respective question contexts in (39a–d).

(39)   Ládi nki   shár.
            Ladi   catch rabbit
            'Ladi caught a rabbit.'

   a.   What did Ladi catch?

   b.   What did Ladi do with the rabbit?

   c.   What did Ladi do?

   d.   What happened?

The focus ambiguity between VP-focus and focus on the direct object is also known from intonation languages. However, intonation languages do not exhibit a structural identity between narrow verb focus and object focus, since narrow verb focus is marked by focus on the verb itself. As we pointed out in Hartmann & Zimmermann (2007b), standard theories of focus projection, such as e.g. Selkirk (1984, 1995), have problems with accounting for this ambiguity. Seen in this light, it is striking that massive focus ambiguity does not seem to be an idiosyncratic property of a single language but is quite common at least among the Chadic languages.

It is also worth pointing out that — under certain conditions — only the object can be marked by a cleft structure even though it is the whole VP that is focused. This is illustrated in the corrective VP-focus example in (40).

(40) A: Da   kwasá tsír   ní.
          3PL   chew   beans DEF
          'They ate the beans.'

    B: Adí   **tsír ní**   án   tí   da   kwasá wá
          EXIST beans DEF F-COP REL 3PL chew   NEG
          ama   **yímí ní**   án   tí   da   sá.
          but   water DEF F-COP REL 3PL drink
          'They didn't **eat the beans**, but they **drank the water**.'

In (40B), the preceding VP is corrected, hence it is an instance of corrective VP-focus (cf. section 1). However, the constituents that appear in the cleft positions are the objects — in the negation of the predecessor clause as well as in the following correcting clause. (40B) represents an instance of *underfocus* or *partial focus movement* (see e.g. Krifka 2001, 2004). Hartmann & Zimmermann (2007a) discuss parallel facts in Hausa, a West-Chadic language. In their example (41), the *wh*-question requires a VP-focus in the answer. However, only the object is fronted to the ex situ focus position in Hausa.

(41) Q: **Mèeneenèe**   ya   fàaru?
          what   3SG.PERF   happen
          '**What** happened?'

    A: **Dabboobi-n jeejìi** nee mutàanee su-kà   kaamàa.
          animals-of   bush   PRT men   3PL-PERF   catch
          '(The) men caught **wild animals**.'

Hartmann & Zimmermann (2007a) and Zimmermann (2007) propose that in (41) only the unexpected, or most relevant or important part of the focus appears

in the ex situ position (for a similar proposal in Chinese, cf. Xu 2004). This seems to indicate that partial focus movement does not depend on information-structural factors alone, but is subject to additional pragmatic factors, such as relevance. The same seems to hold for the Bura example in (40B), where the structural facts (object cleft) do not fully coincide with the information-structural requirements (VP-focus).

Even though verbal focus is syntactically unmarked, a focused verb can be made grammatically prominent by means of morphological reduplication.

(42) Q: **Mi**   án   tí   tsá   hárá ka   kákádu ní   rí?
         what F-COP REL 3SG do   with   book   DEF Q
         'What did he do with the book?'

   A1: Tsá   **kítá kítá**.
        3SG take take
        'He only **took** (it).'

   A2: Tsá   **híl-híltá**   kákádu ní   (akwá kanti ní).
        3SG RDP-steal   book   DEF   at   shop DEF
        'He **stole** the book from the store.'

Hoffmann (1955:302) notes that reduplication in Bura expresses intensity or iteration of the event denoted by the clause. More generally, verbal reduplication is a common means of expressing these semantic concepts cross-linguistically and in other Chadic languages, see e.g. Newman (1990) on verbal reduplication in Hausa. Naturally, the expression of iteration or intensification of the event will assign the verb meaning a certain amount of emphasis. We therefore conclude that verbal reduplication is not a genuine focus-marking strategy in Bura. This conclusion is confirmed by the fact that both answers to (42Q) are also possible without verbal reduplication:

(42A1') Tsá **kítá**.

(42A2')   Tsá **híltá** kákádu ní (akwá kanti ní).

To conclude, verbal reduplication assigns prominence to the verb in an indirect way. As a focus marking strategy it is thus not on a par with the cleft strategy or with focus marking by the focus copula *án*. Recall that *án* is obligatory with focused subjects and a crucial ingredient of the cleft-construction that is used to mark non-subject focus in the syntax. The particle *án* is thus an indispensable feature of focus marking, unlike verbal reduplication. Finally notice that a different situation obtains in Malgwa, another Central Chadic language, according to Löhr (2007). In Malgwa, verbal reduplication in Malgwa serves to express predication focus on the verb at least in perfective contexts.[12]

3.2   Polarity Focus

By polarity focus, we understand focus on the truth value of the clause (cf. Gussenhoven 1984). In German, polarity focus is usually expressed by an accent on the finite verb in V2 in matrix clauses and on the subordinating conjunction in embedded clauses (Höhle 1988).

(43) a.   Q: Hat Klaus den Computer repariert?
            has K.   the computer repaired
            'Did Klaus repair the computer?'

       A: Ja, er **hat** ihn repariert.
          yes he did it   repair
          'Yes, he **did** repair it.'

   b.   Q: Hat Klaus gesagt, wann er den Computer reparieren wird?
            has K.   said   when he the computer repair   will
            'Did Klaus say when he will repair the computer?'

---

[12]   According to Löhr (2007), the use of (some) reduplicated verbs in Malgwa can express either narrow focus on the verb or polarity focus to be discussed on the next section.

A: Nein, aber er hat gesagt, **dass** er ihn reparieren wird.
no   but he has said   that   he it   repair   will
'No, but he said **that** he will repair it.'

In both examples in (43), it is affirmed that Klaus repaired (a) or will repair (b) the computer. If a statement is negated, i.e. an opposite polarity expressed, the nuclear accent falls on the negation in German.

(44) Q: Hat Klaus den Computer repariert?
        has K.   the computer repaired
        'Did Klaus repair the computer?'

    A: Nein, er hat ihn **nicht** repariert.
        no   he has it   not   repaired
        'No, he **didn't** repair it.'

Turning to Bura, polarity focus is often unmarked. If marked overtly, it is expressed by the particle *ku,* which precedes the verb. This option only exists in perfective clauses. The following data exemplify affirmative polarity. The examples in (45B)/(46B) confirm the preceding statements. The confirmation is (or may be) expressed by the particle *ku.*

(45) A: Náha   Pindár sá   mbal.
        yesterday P.   drink beer
        'Yesterday Pindar drank beer.'

    B: A'á, Pindár (**ku**) sá   mbal náha.
        yes P.   POL drink beer   yesterday
        'Yes, Pindar **did** drink beer yesterday.'

(46) A. Pindár sím mtíka.
        P.   eat chicken
        'Pindar ate a chicken.'

B. Pindár **ku** sím mtíka   ní.
    P.   POL eat chicken DEF
    'Pindar **did** eat the chicken.'

In the following two examples, the second clauses negate the statements of the first ones. The opposite polarity focus is also marked with the particle *ku*. In (48), the future tense of the *wh*-question presupposes that the car has not been repaired yet. The answer negates this presupposition.

(47) A: Pindár adí   dá[13] sá   mbal akwá ndzí   ní   wá.
         P.   EXIST ??   drink beer in   lifetime DEF NEG
         'Pindar never drank beer in her lifetime.'

   B: Nahá   tsá **ku** sá   mbal.
       yesterday 3SG POL drink beer
       'Yesterday she **did** drink beer.'

(48) Context: The neighbour's car has not been repaired in a long time.

   Q: **Nawá** án   tí   ga átá namta motá-nga rí?
       when F-COP REL 2SG FUT repair car-2SG   Q
       '**When** will you repair your car?'

   A: Ama íyá **ku** namta náha   (diya).
       but 1SG POL repair yesterday already
       'But I **did** repair it already yesterday.'

Based on the observation that the particle *ku* is in complementary distribution with the aspectual markers, Hoffmann (1955:317ff) analyses it as a perfectivity marker. We do not share this view and argue instead that *ku* marks polarity focus. Our proposal is supported by the following four arguments: First, recall from section 2 that all aspects but the perfective are obligatorily marked in Bura.

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[13] Possibly, the morpheme *dá* is a loan from Hausa, where *dâ* 'formerly, once upon a time' is a temporal adjunct expressing anteriority.

The particle *ku*, however, is optional and appears only in a small subset of perfective clauses. If *ku* were a perfectivity marker, its optionality would be surprising. It is interesting to note, though, that polarity focus is only marked in the perfective aspect. As example (49) shows *ku* cannot appear in a progressive clause.[14] We will make a tentative proposal to account for this restriction at the end of the present section.

(49) Q: **Mi** án hárá tí ga a tsúhá whada wá rí?
         what F-COP happen REL 2SG PROG grow groundnut NEG Q
         '**Why** don't you grow groundnuts?'

A1: Íyá akwá tsúh-ári.
     I PROG grow-3SG
     'I **am** growing it.'

A2: * Íyá ku akwá tsúh-ári.

A3: * Íyá ku áta tsúh-ári.

A4: * Íyá ku aná tsúh-ári.

Second, *ku* is ruled out in a sentence containing a term focus. Thus, in (50c) focus on the subject blocks the presence of *ku*. The same holds for subject *wh*-questions, as shown in (50d).

(50) a. **Pindár** án sá mbal.
         P. F-COP drink beer
         '**Pindar** drank beer.'

b. Pindár **ku** sá mbal.
    P. POL drink beer
    'Pindar **did** drink beer.'

---

[14] A similar restriction to perfective environments is observed with the particle *gà* in Tar B'arma (Nilo-Saharan), which is likewise analysed as a marker of polarity focus in Jacob (in prep.).

c. * Pindár án ku sá mbal.

d. * Wan ku sá mbal?

The incompatibility of the polarity marker with narrow focus is also observed with non-subject focus, be it clefted (51A1) or in situ (51A2):[15]

(51) Q: **Mi** án   tí   mwala ní   kwasá rí?
         what F-COP REL woman DEF chew   Q
         '**What** did the woman eat?'

   A1: **Tsír** án   tí   mwala ní   **(* ku)** kwasá.   [*clefted OBJ-focus*]
       beans F-COP REL woman DEF   POL chew
       'The woman ate **beans**.'

   A2: Mwala ní **(*ku)** kwasá **tsír**.   [*in situ OBJ-focus*]

As discussed in section 2, term focus is generally compatible with any aspect in Bura. As illustrated in (52) for subject focus, it is possible in progressive, future, and habitual clauses. The fact that term focus is not compatible with the particle *ku* shows that *ku* cannot be an aspectual marker.

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[15] The occurrence in the disjunctive *yes/no*-question in (i) appears to contradict this generalization at first sight. The answer (iA) suggests that there is narrow focus on the two disjunctive NPs *Mtaku* and *Sálvía* in (iQ).

(i) Q: Mtaku núwa Sálvía ku   namta motá ní ya?
        M.   or   S.   POL repair car DEF Q
        'Did Mtaku or Salvia repair the car?'

    A: Mtaku ku namta (mota ní).

Notice, however, that *yes/no*-questions show an affinity to polarity focus by definition, which might license the occurrence of *ku* in this context.

(52) [_{TP} **Pindár**   án   [_{AspP} akwá / átá / aná sá mbal]].
      P.   F-COP   PROG / FUT / HAB drink beer
      '**Pindar** is drinking   / will drink / usually drinks beer.'

The third argument is a logical consequence of the second: The polarity marker *ku* is also incompatible with the focus-sensitive particle *daci* ('only'). This is shown in (53) where the focus particle *daci* associates with focus on the verb across the pronominal object (cf. Hartmann & Zimmermann 2007c). Since verb focus is grammatically unmarked (cf. section 3.1), the presence of *daci* is the only indication of focus. Its presence blocks the polarity marker *ku*.

(53)   Mwala ní adí **tsá** ní wá ama tsá **(* ku) buhá** ní daci.
       woman DEF EXIST hit 3SG NEG but 3SG POL push 3SG only
       'The woman didn't hit him, but she only pushed him.'

Fourth, the polarity marker is incompatible with negation. If a statement is negated, such as in (54), the presence of the polarity marker is ungrammatical. The incompatibility of polarity marker and negation has been observed for other African languages, too, and is possibly due to the inherent focus status of negation, see e.g. Güldemann (1996). In contrast, such an incompatibility is not found with the other aspectual markers in Bura. This shows once more that *ku* is not a perfectivity marker.

(54) A: Náha   Pindár sá   mbal.
         yesterday P.   drink beer
         'Yesterday Pindar drank beer.'

     B: Áwa, Pindár **adí (* ku)** sá   mbal náha   **wá**.
         no   P.   EXIST POL drink beer yesterday NEG
         'No, Pindar didn't drink beer yesterday.'

Before we give a tentative account of the observed distribution of the particle *ku*, we briefly discuss a related phenomenon in the West-Chadic languages spoken in Yobe State, Nigeria (Bade, Bole, Karekare, Ngamo, Ngizim). Schuh (2005) argues for these languages that the verbal extension traditionally described as the totality marker should rather be conceived of as an auxiliary (= polarity) focus marker. For our discussion of the Bura particle *ku* it is interesting to note that the alleged totality extension of the Yobe State languages is ungrammatical in connection with constituent questions and with negation. The following examples illustrate these incompatibilities for Ngizim. (55c) (from Schuh 2005:16) shows that the verb in *wh*-questions may not be extended by the "totality" marker *naa*. (56c) (from Schuh 2005:13) shows that negation and totality marking are incompatible.[16]

(55) a. Ba / ba-naa təmaakú. (*neutral*)   b. Ka ba tâm?
         get / get-TOT sheep   2SG get what
         'He got a sheep.'   'What did you get?'

                                               c. * Ka ba-naa tâm?

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[16] It could be assumed that it is a genuine property of the totality marker to be incompatible with constituent focus or negation. This seems not to be the case at least in Hausa, which has a proper verb form marking totality (grade 4). The Hausa grade 4 verbs can occur together with question focus and negation as illustrated in (i) (from Newman 2000:490) and (ii) (from Schuh 2005:13), respectively:

(i)   Mèe   ya   fashèe?
       what SG.PERF   break.TOT
       'What broke?'

(ii) a. Na   shanye   giya.   b. Ban   shanye   giya ba.
         1SG   drink.TOT beer   NEG.1SG   drink.TOT beer NEG
         'I drank up the beer.'   'I didn't drink up the beer.'

The compatibility of the totality marking verb forms with constituent focus and negation in Hausa corroborates Schuh's analysis of the alleged totality extension in the Yobe State languages as an auxiliary focus marker.

(56) a. Na   sa-naa   səmà.   b. Na   sa   səmà bai.
         1SG   drink-TOT   beer   1SG drink beer not
         'I drank up the beer.'   'I didn't drink up the beer.'

                                            c. * Na sa-naa səmà bai.

Recall from (50) and (54) that the Bura particle *ku* is excluded in exactly the same environments. This strongly suggests that the totality extension in the Yobe State languages and the particle *ku* in Bura serve the same function, which is the expression of polarity focus.

In the remainder of this section, we give a tentative answer to the question of why polarity marking in Bura is restricted to the perfective aspect. Apparently, Bura requires the completion of an event before the truth value of the clause expressing the event can be focused (= polarity focus). It follows that the truth value of a proposition denoting an ongoing, uncompleted or recurring event cannot be focused. Possibly, this requirement is a variation of Hopper's (1979) universal implicational relation between foregrounding and perfectivity, which claims that an event must be bounded or completed in order to be foregrounded. If foregrounding corresponds to being in focus, the restriction of polarity focus to perfective contexts follows directly. To give an example for this implicational relation, Hartmann & Zimmermann (2006) discuss sentence focus marking in Gùrùntùm (West-Chadic), as exemplified in (57a–d). Gùrùntùm has a morphological focus marker *a*, which appears sentence-finally in case of sentential focus.It shows that all-new sentence focus is only marked in the perfective (57a), whereas it remains unmarked in all other aspects (57b–d). We refrain from giving appropriate contexts (Exs. (57cd) are from Haruna 2003:89,91).

(57) a.   Tí   vún   lúurìn   nvùrì-**à**.   [*perfective*]
          3SG   wash   clothes   yesterday-FOC
          'She washed clothes yesterday.'

   b.   Tí   bà   nyóolì   góobílìshí.   [*progressive*]
        3SG   PROG   write   letter
        'He is writing a letter.'

   c.   Tá-a   má   íyà   tə́u-gàná gáb.   [*future*]
        3SG-FUT go   after   moment   small
        'She will go after a short while.'

   d.   Tá-a   ɗì   wárí.   [*habitual*]
        3SG   HAB   come
        'She usually comes.'

Thus, in Gùrùntùm, the marking of sentence focus requires the event to be complete. Similarly, we would like to argue that the completion of the event expressed by the clause is a prerequisite for the formal marking of polarity focus in Bura. Since the completion of an event is not marked overtly in contemporary Bura, polarity focus is expressed by a formative in the position of aspectual markers.

4   Focus Types and Focus Interpretation

The focus marking strategies for subjects and non-subjects discussed in this article show up with all focus types, i.e. with corrective, selective, as well as with new-information focus (cf. Dik 1997). In other words, a different pragmatic use of a focused constituent does not trigger a difference in the grammatical realization of focus. From a theoretical perspective, this is an interesting result since it is at odds with theories that try to establish a categorical (semantic) difference between new information focus on the one hand and pragmatically marked foci such as contrast, selection or correction on the other. See among

many others Halliday 1967, Chafe 1976, Couper-Kuhlen 1984, Rochemont 1986, É. Kiss 1998, Drubig & Schaffar 2001, Molnár 2001, Umbach 2001, Selkirk 2007). In this section, we restrict ourselves to the discussion of selective focus (4.1) and corrective focus realization (4.2).

4.1   Selective Focus

In section 1, we called a focus *selective* if the focused constituent introduces an element of the alternative set into the common ground (CG) and at least some elements of this set have been made explicit in the preceding context. In the following examples, the explicit elements are given in the questions. In the answers, one of these elements is chosen.

Selective focus on subjects follows the same pattern as new-information focus on subjects. The focused constituent appears in the ex situ position and is followed by the focus marker *án*.

(58) Q: Wa án   jabwumta túhúm ní   rí, ga   núwa bzir   máyár nga rí?
         who F-COP break   pot   DEF Q 2SG or   child mother 2SG Q
         'Who broke the pot, you or your brother?'

     A: Bzir máyár ná   án   jubwumta.[17]
         child mother 1SG F-COP break
         'My brother broke (it).'

In our corpus, selective focus on non-subjects may be realized in situ, as shown in (59) for object focus, in (60) for adverbial focus, and in (61) for verb focus.

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[17] Notice that the verbs in (59A) and (61A) are not extended by the verbal suffix *–ari*, which typically replaces an anaphorically recoverable object-NP, see fn. 6. We lack sufficient knowledge of the Bura verbal system and the precise licensing conditions of *–ari* in Bura for an adequate account of its distribution.

(59) Q: Ga   bara sá   mbal núwa mwadubu rí?
         2SG want drink beer or   porridge Q
         'Do you want to drink beer or porridge?'

     A: Íyá sá mwadubu.

(60) Q: Nawá án   tí   tsá masta tsír ní   rí,
         when COP REL 3SG buy   beans DEF Q
         Litinúwa núwa Talakúwa rí?
         Monday or   Tuesday   Q
         'When did she buy the beans, on Monday or on Tuesday?'

     A: Tsá masta vir Litinúwa.
         3SG buy   day Monday
         'She bought (them) on Monday.'

(61) Q: Madár nkyár.yéri ní   akwá kílá gang ní
         boy   small.PL   DEF PROG carry log   DEF
         núwa da   akwá buhá rí?
         or   3PL PROG push Q
         'Are the boys carrying or pushing the log?'

     A: Da akwá kil-ari.
         3PL PROG carry-3SG
         'They are carrying it.'

Selective non-subject focus may also be clefted, cf. the minimal pair in (62), showing that there is no restriction with respect to the position of selective focus. Whether there is a positional preference cannot be decided at the moment.

(62) Q: Ga   átá   bara tea núwa coffee rí?
         2SG FUT want tea or   coffee Q
         'Do you want tea or coffee?'

    A1: Íyá bara tea.

    A2: Tea án tí íyá bara.

The next sub-section will lead to a similar conclusion concerning corrective focus.

4.2 Corrective Focus

A focus is *corrective* if the focused constituent replaces an alternative that has been previously introduced into the linguistic context. Again, corrective focus on subjects follows the well-known pattern: it is always marked by the focus copula *án*, cf. (63B) where the subject pronoun is corrected.

(63) A: Tsá kwasímya tsír   ní.   B: Áwa, íyá án   kwasímya.
         3SG chew   beans DEF   no   1SG F-COP chew
         'She ate the beans.'   'No, I ate (them).'

Focused corrective non-subjects may appear in situ or clefted as shown in (64B1) and (64B2) for object focus. The first correction of A's previous statement in (64B1) has the corrective focus in the cleft construction. The second correction in (64B2) introduces the corrected object in situ.

(64) A: Mwala ní   kwasímya tsír   ní.
         woman DEF chew   beans DEF
         'The woman ate the beans.'

    B1: Áwa, **shinkafa ní**   án   tí   tsá kwasímya.
        no   rice   DEF F-COP REL 3SG chew
        'No, it was **the rice** that she ate.'

    B2: Áwa, tsá   kwasímya **shinkafa ní**.
        no   3SG chew   rice   DEF
        'No, she ate **the rice**.'

Example (65) illustrates corrective focus on adjuncts. Again, the corrected constituent may occur in situ (65B) or in the cleft position (65B').

(65) A: Ládi   sí   náha.
            L.   come   yesterday
            'Ladi came yesterday.'

     B1: Áwa, Ládi átá   sí   dípa.
           no   L.   FUT come tomorrow

     B2: Áwa, dípa   án   tí   Ládi átá   sí.
           no   tomorrow F-COP REL L.   FUT come
           'No, Ladi will come tomorrow.'

Finally, we discuss selective verb focus. Focused verbs can also be used for corrections, but since focused verbs go unmarked in Bura, such verbs must appear in situ:

(66) A: Mwala ní   tsa   Péter.
            woman DEF hit   P.
            'The woman hit Peter.'

     B: Mwala ní   adí   tsa   Péter wá   ama tsá   kúgá ní.
           woman DEF EXIST hit   P.   NEG but   3SG call   3SG
           'The woman didn't hit Peter, but she called him.'

5   Conclusion

This article provides a detailed overview of focus and focus marking in Bura. We discussed the two main asymmetries of the focus system. The first asymmetry concerns the different structures of focus marked subject and non-subject terms: The presence of a relative clause in case of focused non-subjects motivated a cleft analysis. The cleft analysis could not be extended to focused subjects, however, due to the absence of relative clause syntax with focused subjects. Focus marked terms are both followed by the particle *án*, which we analysed as a focus copula located in SpecTP. The second asymmetry concerns the optionality of focus marking. While focus marking on subjects is obligatory,

focused non-subjects need not be grammatically marked: Predicate focus is only sporadically marked; focus marking on other non-subjects is optional. We also showed that the absence of focus marking leads to a high degree of focus ambiguity, which can only be pragmatically resolved. Finally, a discussion of different pragmatic focus types showed that Bura does not formally differentiate between these. Our investigation revealed that the Central Chadic language Bura shares many traits of focusing with the West-Chadic languages, such as the obligation to mark focused subjects, or the massive presence of focus ambiguity. However, the Bura focus system also has a striking idiosyncratic property, which is the structural difference in the marking of subject and non-subject term focus. The question of whether or not this is a common property of the Central Chadic languages will be at the centre of future research.

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Katharina Hartmann & Peggy Jacob
Institut für Deutsche Sprache und Linguistik / SFB 632 Informationsstruktur
Humboldt Universität zu Berlin
Unter den Linden 6 / Sitz: Dorotheenstr. 24
D - 10099 Berlin
k.hartmann@rz.hu-berlin.de
pegja@gmx.de

Malte Zimmermann
Institut für Linguistik / SFB 632 Informationsstruktur
Universität Potsdam
Karl-Liebknecht-Str. 24-25
D - 14476 Golm
malte@ling.uni-potsdam.de