Towards a Typology of Focus Realization

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1 Introduction

This paper presents a first attempt to formulate a cross-linguistic theory of *focus realization*, that is, of how different languages express focussing. It is common knowledge that by far not all languages mark focused constituents via pitch accent placement, the way Germanic languages do. Rather, focussing is variously reflected in prosodic phrasing (i.e. boundary placement), constituent ordering, via special focus morphemes, and perhaps in some cases, not at all. One might therefore suspect that there can't be any interesting theory of focus realization cross-linguistically; languages just choose some aspect of their grammatical structure, prosodic, syntactic, or morphological, to realize focus.

While this may very well turn out to be the case, this paper explores the hypothesis that there is still something systematic to be said about focus realization, that is, that there is a common analytical apparatus that can capture the crosslinguistic variation. I will take as my point of departure what I will call the *prominence theory of focus realization*, henceforth PTF,

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pioneered in Truckenbrodt (1995), among others. The idea behind this approach is that focus is always realized by structural prominence, and that the only way focus interacts with the formation of structure is through a constraint called FocusProminence:

(1) FocusProminence:
Focus needs to be maximally prominent.

In sections 3–5 I will show how languages in which focus is realized by pitch accent (as in English), as well as languages in which it is realized by prosodic phrasing, constituent order variation, or a mixture of all of these can be analyzed under the umbrella of (1), understanding the notion of 'prominent' there as a prosodic one (as originally intended by Truckenbrodt). In sections 6 and 7 I will then go on to cases that appear to elude such an analysis, and I will speculate about ways to accommodate them. Section 7 in particular toys with the idea of parameterizing the very notion of prominence (in particular: to include syntactically defined prominence) in (1) to try to bring these cases into the reach of a common analysis.

Obviously, this paper can't even begin to do justice to the arguments that have been put forward in favor (or, in some cases, against) the language specific analyses of focus realization I rely upon here, and the generalizations I report are certainly oversimplified in many cases. Likewise, the actual account of cross-linguistic focus realization I develop is a mere sketch. Yet hopefully all of this can serve to give the reader some idea of the overall project, and whether or not they deem it worthy of pursuit.

2 Basic Notions

2.1 The Notion of Focus

Since we're interested in crosslinguistic differences in the way focus is realized, we have to provide some means of identifying focus independent of its particular realization. I assume, with much of the literature, that we can identify focus via the pragmatics. Concretely, certain (semantic or pragmatic properties of certain) contexts systematically trigger focus. While there is no common *definition* of focus-triggering contexts (or focus, for that matter) in the various analyses I draw upon, there is a common extensional core of contexts that people seem to agree trigger focusing. For example, all of the

sentences in U1 will elicit an utterance of U2 with focus on the direct object, as does continuation of U2 with U3:

U1: a. What do you put in your pasta sauce?
b. What was it that you put in your pasta sauce?
c. Do you put tarragon, or thyme in your pasta sauce?
d. Do you put tarragon in your pasta sauce?
e. Daniel puts tarragon in his pasta sauce.
f. First, I put tarragon in my pasta sauce, then...

U2: I put $[\text{thyme}]_F$ in my pasta sauce.

U3: ..., not tarragon.

Though presently I don't see an alternative to giving a common core of focus triggering context by simple ostension (rather than any more interesting definition) for a study like this, at least two shortcomings resulting from this bear mentioning: First, even if we agree that all of these contexts trigger focussing, we almost certainly lose valuable information by *restricting* our attention to them, since we can't safely bring more 'exotic' species of focus (such as second occurrence foci, see e.g. Rooth (this volume)) to bear on the theoretical issues.

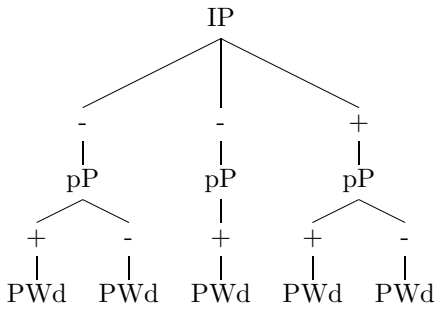
Second, we are stuck with the assumption that no matter which of the above context types a particular study used, they thereby elicited the *same kind* of focus, so that crosslinguistic comparison of its realization is warranted. While this strikes me as an extremely attractive hypothesis, it is also possible that an eventual theory of focus will have to grammatically distinguish different kinds of focus in some of these contexts (say, 'answer focus' as opposed to 'correction focus'), in which case it would be problematic (or at least uninstructive) to compare the realization of these foci across languages. For now I can only hope that not too much distortion will be created by the assumption that the differences between these 'focus types' are purely pragmatic, not grammatical, and will therefore not influence the way the grammar realizes these foci.

2.2 Prosodic Prominence

What does it mean for a focus to be prominent? As a starting point, I will define prominence in prosodic terms, using a hierarchy of prosodic units: one or more syllables form a *prosodic word* (PWd), one or more PWds form a

bigger prosodic unit (variously called accent(ual) domain/phrase, intermediate phrase, major phrase etc. in the sources I rely on) called *phonological phrase* (pP) here; and one or more pPs form an *intonational phrase* (IP). Among the immediate constituents (or 'daughters') of a given unit, one is its *head*. If you think of prosodic structure as a tree as in (2), this means that each node has exactly one strong daughter, which we can mark by +:

(2)



If you prefer to think of prosodic structures as bracketed strings, we can mark the head of a constituent by a grid mark at the pertinent level:

(3)
$$\begin{array}{l} {\scriptstyle (\qquad\qquad\qquad\qquad\quad *\qquad\quad)_{\mathrm{IP}}} \\ {\scriptstyle (\quad *\qquad\quad)(\quad *\quad)(\quad *\qquad\quad)_{\mathrm{pP}}} \\ (\mathrm{PWd})(\mathrm{PWd})(\mathrm{PWd})(\mathrm{PWd})(\mathrm{PWd})_{\mathrm{PWd}} \end{array}$$

By definition, the head of any constituent (marked by +/*) is more prominent than any of its sisters (any other element within that constituent). What this means in terms of the phonetic realization of the string, however, varies from language to language, and therein lies one source of crosslinguistic variation, as we will see.

Step one in formulating an account of focus realization in a given language is to determine its default prosodic structure, in particular:

(4) a. the 'standard' mappings from syntax to prosody e.g. PWd $\approx X^0$, pP $\approx$ XP, IP $\approx$ sentence etc.
b. the 'standard' headedness for each prosodic phrase: left or right

This paper deals with two levels of prosodic structure, the topmost, intonational phrase, and the one below it, the phonological phrase.

Phonological phrases correspond roughly to maximal projections of lexical categories. Since syntax is recursive, but prosodic structure (normally) is

not, a dilemma appears if one or more lexical XPs are contained in another, say objects within a VP. Descriptively, in a situation like (5), languages can choose between at least three strategies for their standard mapping:[1]

(5) [XP YP Z]$_{\text{ZP}}$

a. radical splitting: $(\text{XP})_{\text{pP}}(\text{YP})_{\text{pP}}(\text{Z})_{\text{pP}}$
each XP, as well as any remaining non-phrasal elements, gets its own pP.

b. moderate wrapping: $(\text{XP})_{\text{pP}}(\text{YP Z})_{\text{pP}}$
each XP gets its own pP, but non-phrasal elements are 'wrapped' with the structurally closest phrase.

c. radical wrapping: $(\text{XP YP Z})_{\text{pP}}$
the biggest XP, with everything it contains, gets wrapped into one big pP.

Next, the head of pP needs to be determined, in case it has more than one daughter. The two choices, obviously, are: the rightmost/leftmost PWd in a pP becomes its head. I will write this as pP-Head-R and pP-Head-L, respectively, meaning 'the head of pP in this language wants to align with the left/right edge of pP.'

Finally, the pPs join to form an IP, for which, again, the head-question arises, with choices being right- and leftmost (IP-Head-R/L).

2.3 Prosodic Structure Amended For Focus

Suppose now an element A, which corresponds to a phrase at level L1 (an L1-phrase or L1P for short), is not by default the head of the next higher prosodic constituent (L2P) at level L2, e.g. A is left-peripheral in L2P, but L2 is right-headed (L2-Head-Right), yielding the unmarked structure in (6):

(6) default:
$$\begin{array}{cc} (& *\ )_{\text{L2}} \\ (\ * &)(*\ )_{\text{L1}} \\ \text{A} & \text{B} \end{array}$$

Now, if A is focused, then FocusProminence wants the prosodic structure to change so as to make A maximally prominent (in its L2-phrase). Generally, any one of three remedies can be used:

[1] I borrow the term *wrapping* from Truckenbrodt (1995), who gives an account of these three strategies in terms of re-rankings of a small number of constraints.

(7) swap: $\overset{(\ *\quad)_{L2}}{(\ *)(*\ )_{L1}}$ A B insert: $\overset{(\ *)(*\ )_{L2}}{(\ *)(*\ )_{L1}}$ A B delete: $\overset{(\ *\quad)_{L2}}{(\ *\quad)_{L1}}$ A B

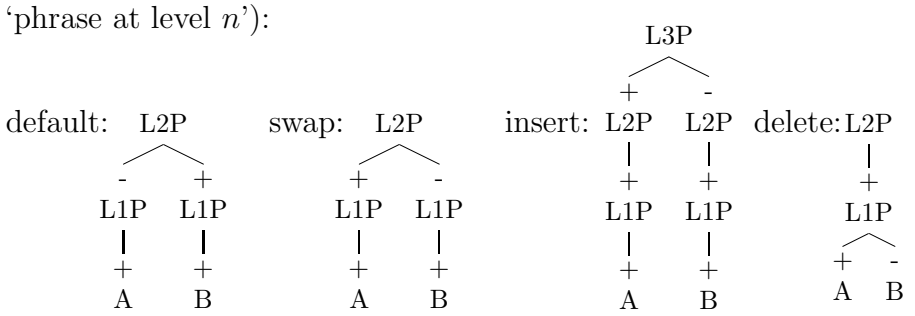
'Swap' the head at level L2 to be A: This violates the headedness of L2, but leaves the phrasing intact and makes A the head of its L2-phrase.

Insert an L2-boundary at the right edge of A: This makes A the head of its own L2-phrase, in which it is moreover (trivially) rightmost; note that this manoeuvre doesn't make A maximally prominent yet (it just doesn't make it less prominent than B). For that to happen, the L2-phrase that contains A has to become the head at the next higher level, call it L3, so this strategy will make sense only if the L3-head is, or at least can be (more easily than the L2-head), to the left.

Delete an L1-boundary at the right edge of A: This strategy will only make sense if A manages to become the head of the L1-phrase containing it and B. The 'super-sized' L1-phrase will trivially be rightmost in the L2-phrase containing it, thus satisfying L2-Head-R. Note that even though the prominence mark in this option is as far from the right edge of the L2-phrase as in the swapped structure, its *head* in the relevant technical sense — the whole L2-phrase *(A B)* — is not.

The default, as well as the tree changed structures, are given in tree notation again in (8), with a higher level L3 added for the insertion case (again LnP means 'phrase at level n'):

(8)



An instance of 'swapping' the prosodic phrase head might be the change from *pleasant TRIP* to *PLEAsant$_F$ trip* in English.

Deletion of structure as a strategy to mark focus has been observed in many languages: In English, Greek, Bengali, German and French, among

others, focus causes the deletion of all accents to its right within the intonational phrase. In Japanese and Korean it forces deletion of all intermediate phrase/accentual phrase boundaries to its right within the intonational phrase, and in Shanghai Chinese deletion of all tones to the right within the major phrase.

Addition of structure is equally ubiquitous, found among others in Chichewa (addition of a phonological phrase break to the right of focus), English, German, Greek, French (addition of a phonological phrase break to the left) and Japanese (addition of an intermediate phrase boundary to the left).

2.4 Preview

We will now turn to a number of illustrations. Given what has been said so far, languages can differ in at least the following aspects: (i) default mapping, in particular the question whether and to what extent they split or wrap when mapping recursive syntactic structure to non-recursive prosodic structure; (ii) headedness at the various levels; (iii) the choice of adjustment strategies (head-swapping, boundary insertion or deletion) at the various levels. This will lead us to a first typology of languages that realize focus prosodically (section 3).

An additional point of variation is (iv) how languages phonetically realize phrase boundaries and heads (again, at the various levels). Standard candidates for head marking are stress and pitch accent (PA), and for boundaries boundary tones, lengthening, and pauses. In our model, every languages has boundaries and heads at all levels. Descriptively, however, not all languages mark all of them (English, for example, realizes heads by stress and accent, but has no obvious phonetic marking of low-level boundaries; Korean has clear boundary markings, but no obvious phonetic marking of higher level heads), so an added option we need to consider is that heads or boundaries (at least at certain levels) aren't marked at all.

Adjustment strategies needn't be prosodic, however. If the prosodic system of a language doesn't allow A in the string $A\ B$ to be prominent, two more options arise: No adjustment whatsoever (i.e. violation of FocusProminence); or *syntactic* adjustment to $B\ A$ to get A into a prosodically prominent position. The latter case will result in a language that marks focus by constituent order variation (sections 4–5).

In addition, I will suggest in section 6 that in some languages, morphemes can serve to mark heads and/or boundaries. That is to say, so-called focus

morphemes don't literally mark the focus, but rather the structural position in which focus is realized.

As I will show in section 7, there are cases that still don't seem to fit an account along these lines. So as a last, and most stipulative point of variation I will suggest that perhaps (v) prominence may, in some languages, be defined not over prosodic structures, but syntactic ones. Whether this is a useful move, or even one compatible with the spirit of a 'prominence based' account in general is very much unclear to me at present, and will hopefully be the topic of future work.

3 Boundary Languages

I will call a language a *boundary language* if it accords to (9):

(9) Focus is marked by insertion of a prosodic phrase boundary to the left or right of the focus.

3.1 Chichewa

The influence of focus on phrasing in Chichewa, a Bantu language, has been described in Kanerva (1990). The basic word order in Chichewa is SVO, and its default phrasing at the pP-level is (10) (As Kanerva shows, pP-boundaries are detectable because they block various segmental processes):

(10) (S)(V O1 O2 Obl)

Focus is marked by a pP-boundary to its right. If the default phrasing doesn't provide such a boundary, one is inserted (Kanerva does not discuss any additional effects of focus, say, on pitch or intensity):

(11) a. (**VP**)
What did he do?
([Anaményá nyumbá ndímwáála]$_{\mathrm{F}}$)$_{\mathrm{pP}}$.
hit house with rock
'He hit the house with a rock.'

b. (V OBJ **OBL**)
What did he hit the house with?
(Anaményá nyumbá ndímwáála$_{\mathrm{F}}$)$_{\mathrm{pP}}$.

c. (V **OBJ**)(OBL)
What did he hit with a rock?
(Anaményá nyumbá$_{\text{F}}$)(ndímwáála).

d. (**V**)(OBJ)(OBL)
What did he do to the house with the rock?
(Anaményá$_{\text{F}}$)(nyumbá)(ndímwáála)$_{\text{pP}}$.

(12) a. (**VP**)
What did they do?
([Anagóná mnyumbá yá Mávúuto]$_{\text{F}}$)$_{\text{pP}}$.
'They slept in Mavuto's house.'

b. (V **OBL**)
Where did they sleep?
(Anagóná mnyumbá yá Mávúuto$_{\text{F}}$)$_{\text{pP}}$.

c. (**V**)(OBL)
What did they do in Mavuto's house?
(Anagóná$_{\text{F}}$)(mnyumbá yá Mávúuto)$_{\text{pP}}$.

Following the terminology of Truckenbrodt (1995), we can describe Chichewa as a radical wrapping language (since all objects are wrapped into one pP). The focus effect will follow if pPs are strictly right-headed: By creating an additional pP, the focus becomes rightmost in that pP. This violates the languages preference for radical wrapping, but satisfies FocusProminence. In other words, pP-Head-R dominates the constraints that regulate default phrasing.[2]

Kanerva does not discuss intonational phrases. For completeness, we will assume that the pP containing the focus also becomes the head of the IP, meeting FocusProminence at the higher level:

(13)

(		*	)$_{\text{IP}}$
(	*	) (*	)$_{\text{pP}}$
(Anaményá)	(nyumbá$_{\text{F}}$)	(ndímwáála)$_{\text{PWd}}$	
hit	*house*	*with rock*	

This would indicate that the head of IP is neither strictly leftmost nor strictly rightmost, but rather flexible in its alignment. I should emphasize, though,

[2]Additional pP heads are inserted after every XP following the focus. Truckenbrodt (1995) provides an elegant account of this by assuming that, once it is impossible to wrap the entire VP (due to FocusProminence), lower-ranked constraints favor a one-to-one mapping of XPs to pPs.

that any assumption about IP is made here on purely theoretical grounds.

3.2 Bengali

Bengali, as discussed in Hayes and Lahiri (1991), is an SOV language with unmarked phrasing (S)(O)(V). Similar to Chichewa, pP-boundaries are detectable through various prosodic processes; in addition, each pP has one L* pitch accent (on its head), and one final boundary tone (notated here as H-).[3] The head of IP can be H*, as in the declarative in (14), or L*, in other structures, including narrow focus; no PAs can follow the IP-head (L% is the IP-boundary tone):

(14) a. ami kágoǰola -ke dek^{h}lam
I newspaperman -obj saw

H* L%
L* H- L* H- | |
(| | | | *) IP
(*)(*) (*) pP

b. ami kágoǰola -ke dek^{h}lam (neutral)

In present terms, then, Bengali is a strictly splitting language, the opposite of Chichewa. Assuming that the accent placement within pPs reflects the position of the pP-head, we furthermore see that pPs are strictly left-headed. The placement of the IP-accent shows that the IP, on the other hand, is right-headed.

It is then predicted that if Bengali uses pP-boundary insertion to realize focus, it will do so to the left of the focus, in order to make the focus leftmost in, and thus the head of, its pP. According to Selkirk (2007), this is indeed the case; she provides the examples in (15), where a boundary is inserted to the left of the focus *č^{h}obir*, 'pictures', in (15b), which isn't present in the neutral version (15a) (various other adjustments happen which cannot be discussed here):

H* L%
L* H- L* H- | |
(| | | | *) IP
(*)(*) (*) pP

(15) a. neutral: ami raǰar č^{h}obir ǰonno ţaka anlam
I king's pictures for money gave

[3]What I call pPs here are Hayes & Lahiri's P-phrases, and Selkirk (2007)'s Ma(jor)P(hrase)s.

'I gave money for the king's pictures.'

b. focused: ami raǰar č^{h}obir$_{F}$ ǰonno ţaka anlam

L* L* H- H- H- L%
(( ) IP
(( ) pP

Hayes and Lahiri (1991) on the other hand claim that the boundary to the left of the focus is optional, whereas a boundary to its right is obligatory (this boundary is evident, too, in (15b), contrary to what the PTF would lead us to expect, cf. the extensive discussion in Selkirk (2007)); Khan (p.c. and 2007), following Michaels and Nelson (2004) suggests that the alleged boundary tone is part of the pitch accent. More investigation is required here.

What about the IP level? As indicated in (15b), the IP-head aligns with the focus-pP (which, in this case, is reflected in a larger pitch excursion), and all subsequent accents are deleted. This is what we predict, given IP-Head-R.

Does the IP-head shift to the left, or are post-focal pP boundaries deleted so as to make the focal pP rightmost in IP? Hayes and Lahiri claim that while all pitch accents after the focus are deleted, the pP boundaries after the focus are present as before (i.e. segmental processes are blocked where they normally are, even post-focally, and H- boundary tones still occur). This would mean that the head of IP shifts to the left, but no pP-deletion occurs (as indicated by the boundaries and H- tones in (15b), which are not given in Selkirk's paper). If this is the correct analysis, it means that post-nuclear deaccenting is not necessarily the result of dephrasing, an issue we will return to in our discussion of English; either post-nuclear pPs don't have heads (as tentatively assumed in (15b)), or their heads cannot be associated with pitch accents.[4]

3.3 Japanese

Japanese, like Bengali, is an SOV language, but unlike Bengali it shows some wrapping, its unmarked phrasing being (S)(O V) (the phrases indicated here are called 'intermediate phrases' in Beckman and Pierrehumbert

[4]Perhaps the ban on post-IP-head accents is itself a consequence of IP-Head-R, the logic being that the less prosodic material there is between the IP-head and the right edge of IP, the lesser the violation of IP-Head-R. This would mean that the constraint that favors pP formation is stronger than IP-Head-R, while the constraint that wants pitch accents on pP-heads is weaker.

(1986) , so I will mark them ip rather than pP; another common term is 'Ma(jor)P(hrase)').

To detect ip-boundaries, we have to look at the next smaller prosodic phrase level, called the *accent domain*. Within an AD, a lexical H* tone triggers downstep on all following H tones. The boundaries of ips are detectable because they reset this downstep, i.e. the first H within a new ip is significantly higher than a downstepped one preceding it; in addition, ips have a final L% boundary tone and trigger lengthening of their final element.

Focus has a variety of effects on prosody in Japanese: First the F-marked constituent is marked by an increased tonal pitch, even if it is not lexically accented. Second, and more importantly for our purposes, focus triggers an intermediate phrase boundary to its left, compare (16b) to (16a), like in Bengali, blocking downstep within the focus (Beckman and Pierrehumbert, 1986, sec.4)):

(16) a. H*L !H*L
(| |)$_{ip}$
(uma'i)(mame')$_{ad}$

b. H*L H*L
(|)(|)$_{ip}$
(uma'i)(mame'$_F$)$_{ad}$

Third, all ip-boundaries to the right of the focus are erased (i.e. downstep is not ever reset after a focus (see Truckenbrodt, 1995, and references therein, but also Sugahara (2002) for conflicting findings):

(17) (Náoko wá)$_{ip}$(nichiyóobi)$_{ip}$(Nágoya dé)$_{ip}$(Mári ní átta)$_{ip}$
Naoko top Sunday Nagoya at Mari with met
'Naoko met with Mari in Nagoya on Sunday.' (unmarked)

a. (Náoko wá)(nichiyóobi)(Nágoya dé)(Mári ní)(átta$_F$)$_{ip}$
b. (Náoko wá)(nichiyóobi)(Nágoya)(dé)(Mári$_F$ ní átta)$_{ip}$
c. (Náoko wá)(nichiyóobi)(Nágoya$_F$ dé Mári ní átta)$_{ip}$
d. (Náoko wá)(nichiyóobi$_F$ Nágoya dé Mári ní átta)$_{ip}$
e. (Náoko$_F$ wá nichiyóobi Nágoya dé Mári ní átta)$_{ip}$

Truckenbrodt (1995) suggests a straightforward analysis for this pattern: The ip-boundary insertion tells us that ips in Japanese are strictly left-headed (like the pPs in Bengali):

(18) a. (*)$_{ip}$
A B$_F$ (bad: focus is not head of ip)

b. (*)$_{ip}$
A B$_F$ (bad: ip has its head on the right)

c. (*)(*)ip
A B (ip a little small, but FocusProminence and ip-Hd ok)

The increased pitch indicates that the accent domain containing the focus is the head of the intonational phrase (IP). Finally, and this sets Japanese apart from both Chichewa and Bengali, the IP is strictly right headed. Therefore, the ip containing the focus can only become the head of IP by being rightmost in IP, which in turn requires deletion of all following ip-boundaries.

(19) a. (*)IP
(*)(*)ip
A B_F C D (bad: focus ip not head of IP)

b. (*)IP
(*)(*)ip
A B_F C D (bad: IP head is not right)

c. (*)IP
(*)(*)ip
A B_F C D (ip a little big, but FocusProm. and IP-Hd-R ok)

Similar patterns have been described for Korean (Jun, 1996) and Greek (Condoravdi, 1990; Baltazani and Jun, 1999), among others.

3.4 English

Focus in English is first and foremost realized by pitch accents, whereas no consistent segmental or tonal effects of boundary insertion or deletion have been discussed in the literature. Yet, assuming that accents indicate heads of prosodic phrases, the analysis of English fits well into the mold of the analyses outlined so far, as we will see.

English has a basic (S)(V O) prosodic structure, i.e. it is a moderate wrapping language (though (S)(V)(O) is possible, too). Heads of pPs are realized by pitch accents, the IP-head being the nuclear pitch accent; unlike Bengali, English has a wide range of pitch accents and pitch accent combinations, so that it is impossible to identify the IP-head by its tonal shape. The primary indicator of the IP-head is that, like in Bengali, no pitch accents can follow the one marking the IP-head, which yields the familiar effect that a non-sentence-final focus is marked by an early nuclear pitch accent, i.e. by the absence of later pitch accents which would otherwise be present.

Whether this is the result of shifting the IP-head to a non-final pP, as in Bengali, or of deleting post-focal pPs, similar to Japanese, is at present unclear. I don't know of any segmental processes that indicate pP-boundaries

in English. Jun and Fougeron (2000) mention in passing that postfocal material in English (unlike in French) is characteristically shortened, which they suggest may indicate the absence of pP-boundaries (which would induce pP-final lengthening). Hayes and Lahiri (1991) on the other hand point out that the alignment of post-focal phrase tones may indicate the right boundary of the focus pP, which would suggest the presence of (accent-less) postfocal pPs, as in Bengali. I have to leave this question for further investigation.

What about pP-insertion? Note that in certain copular (as well as intransitive) structures, English wraps subject and predicate, as in (20a); narrow focus on the predicate yields a shift to a two-accent (non-wrapped) structure, (20b):

(20) a. (out of the blue:)

(*)IP
(*)pP

Your COAT's on fire. [your coat's on fire]$_F$

b. ('Why are you staring at my coat?')

(*)IP
(*)(*)pP

Your coat's on FIRE. your coat's on fire$_F$

This indicates that the focus on the predicate *on fire* triggers the insertion of a pP-boundary to its left (rather than a shift of the pP head to the right), i.e. that the constraint pP-Head-L is stronger than the constraints governing default pP-formation.

This concludes the discussion of Boundary Languages. We have seen that various boundary languages can be analyzed using a small number of parametric choices. Boundary languages comprise languages in which pitch accent placement seems to be the main indicator of focus (English), as well as languages in which other prosodic or segmental cues are the main correlate of focus (Chichewa, Bengali, Japanese). Given the perspective of the PTF, these languages can be seen as variations of the same focus realization strategy.

4 Edge Languages

Edge Languages are characterized by (21):

(21) Focus is marked by non-standard constituent order, with the focus in left- or right-peripheral position.

On the face of it, edge languages display a fundamentally different strategy of focus marking, syntactic vs. prosodic (perhaps involving some specialized phrase structural position such as a Focus Phrase).

At least for some languages, however, it has been argued that the focus position is truly defined in terms of being peripheral to a particular (prosodic) domain, but not in terms of being in a particular structural position. We will start by examining those, and then return to the question whether there are true 'focus position languages'.

The basic analysis for edge languages uses the exact same ingredients as the analysis of boundary languages in the previous section: Like boundary languages, edge languages minimize the material between the focus and the relevant prosodic phrase edge, but unlike boundary languages, they do so via syntax. More precisely, these languages cannot, or only to a very limited extent, amend the prosodic structure (they are *strict*, as opposed to *transparent*, in the terminology of Vallduví, 1990).

4.1 Spanish

Zubizarreta (1998) provides the seminal discussion and analysis of an edge language, Spanish. The following discussion adopts her basic insight, but is closer in detail to the analysis in Büring and Gutiérrez-Bravo (2001).

The basic description of the facts is rather straightforward: Taking accents as indicative of pP-heads, Spanish shows a basic (S)(V O) or (S)(V)(O) phrasing (similar to English in that respect, the choice depending, among other things, on metrical factors). Unlike in English, however, this basic prosodic pattern does not change in response to focussing. Rather, constituent order is used to make sure that the focused constituent ends up clause final. For example, in full-sentence answers, (non-corrective) subject focus is only possible with clause final subjects, whereas broad focus sentences show SVO order:

(22) Q: Qué pasó? / Qué hizo Juan?
'What happened?' / 'What did Juan do?'
A: Juan compró ayer el peRIÓdico.
Juan bought yesterday the newspaper
'Juan bought the newspaper yesterday.'

(23) Q: Quién compró el periódico ayer?
who bought the newspaper yesterday

A: Ayer compró el periódico JUAN.
yesterday bought the newspaper Juan

A': #JUAN compró ayer el periódico.
Juan bought yesterday the newspaper
'Juan bought the newspaper yesterday.'

The well-formed answers in (22) and (23) all have the same prosodic structure, by which I mean the following: all sentences above map the immediate constituents S, O, Adv, and V onto one pP each (or optionally wrapping V with O, which I don't discuss here). A transitive subject-focus sentence like (23) thus has the same prosodic pattern as an all new sentence like (22)— (XP)(V)(YP)(ZP) — which follows if we assume that Spanish is an optional (moderate) wrapping language that matches pPs with XPs. (24) illustrates for (22A):

```
        (                                  *      )IP
        (   *  )(       *)(   *  )(        *      )pP
(24)    (Juan)(compró)(ayer)(el peRIÓdico)PWd
```

The focus effect will follow if we assume that both pP-formation and IP-Head-R are very strict. That is, a focused subject can neither become prominent by shifting the IP-head to a non-final pP, (25a), nor by deleting post-focal pPs, (25b). Short of violating FocusProminence itself, the language resorts to constituent order variation, (25c):

```
             (   *                                   )
             (   *   )(       *)(   *  )(      *     )
(25)  a.    *(JuanF)(compró)(ayer)(el periódico)        IP-head not right
             (   *                              )
             (   *                              )
      b.    *(JuanF compró ayer el periódico)           pPs not properly build
             (                               *    )
             (   *  )(       *)(      *     )(   *    )  non-standard order but
      c.     (Ayer)(compró)(el periódico)(JuanF)           happy prosody
```

Note that this analysis is different from saying that Spanish moves the focus into a right-peripheral position: There is no evidence that, say, a focused object as in (26A) occupies a position different from that of the object in neutral/all-new or VP focus sentences like (22), or that in the subject-focus VOS sentence (23)A/(25c) (analogously for focused adverbials, VPs, and sentences):

(26) Q: Qué compró Juan? — A: Juan compró el peRIÓdico.
what bought J. *J. bought the newspaper*
'What did Juan buy?' — 'Juan bought the newspaper.'

On the other hand, Spanish does not allow for VOS order in regular all-new sentences, (27), even though that results in the standard prosodic structure (V)(O)(S), and has the nuclear accent within the focus, (28):

(27) Q: Qué pasó?
A: #Ayer compró el periódico Juan. (any prosody)

```
(                                  *  )
(   *  )(       *)(       *     )(   *  )
(Ayer)(compró)(el periódico)(Juan )
```
(28)

One could take this to mean that in an all new sentence the main accent has to be one the O (by some principle like a syntactic Nuclear Stress Rule), and that that in turn is only possibly in O-final order. I think it is advantageous, however, to simply derive this from a syntactic preference for SVO order, which will only be violated under pressure from FocusProminence.

But how could this be implemented? Given that FocusProminence makes reference to prosodic structure (by talking about prominence), does this mean that marked constituent order is established only after prosodic structure is built (and prosodic structure is subsequently 're-built')? This is more or less the position taken in Zubizarreta (1998).[5] Alternatively, one can reverse the causal chain and claim that each syntactic structure, canonical or inverted, is associated with the set of its possible focus markings (roughly the position of Reinhart (1995, 2006)); the constituent order variation itself is then essentially optional. Finally, in a system that accesses syntactic and prosodic structure in parallel, questions of this sort don't even arise.

4.2 Italian

The basic pattern of data in Italian is the same as in Spanish: focused subjects appear in non-canonical, sentence final position:

(29) Q: What happened?

[5]The analog to FocusProminence doesn't directly reference prosodic structure, but the notion of 'Nuclear Stress', which is crucially established after the syntactic structure has been completely assembled. In case of a mismatch between focus and Nuclear Stress, a late syntactic adjustment rule changes the constituent order.

A: [(Gianni)(ha scritto)(una lettera)$_{\text{PWd}}$]$_{\text{F}}$
G. has written a letter

(30) Q: Who laughed?
A: (Ha riso)(Gianni$_{\text{F}}$)$_{\text{PWd}}$
has laughed G.

Detailed investigation in Samek-Lodovici (2002) and Szendrői (2001, no year) (as well as, from a different theoretical vantage point, Frascarelli (2000)) show some additional details that are worth pointing out, though.

First, in (31), the focused subject appears between the direct and the indirect object:

(31) Q: Chi ha mandato il vino a Marco?
who has sent the wine to M.

A: (Gli ha mandato)(il vino)(Gianni$_{\text{F}}$), (a Marco)$_{\text{PWd}}$
to him has sent the wine G., to M.
'Gianni sent the wine to Marco.'

The subject is thus neither in its canonical preverbal position, nor peripheral, which may appear strange from the vantage point of the PTF. However, as indicated in (31A), in these structures the sentence final, post-focal constituent is prosodically separated from, and perceptively less prominent than, the rest of the clause. The authors quoted interpreted this to mean that the indirect object in (31) has been syntactically right-dislocated, and prosodically forms its own IP. It is the latter fact that is important here. *Within its own IP*, the subject is right peripheral, so IP-Head-R is met.[6,7]

Second, Samek-Lodovici and Frascarelli point out an interesting phenomenon that emphasizes the relation between edge languages and boundary languages. In certain cases it is syntactically impossible to make the focus

[6]If there is a next higher prosodic level, call it the *utterance phrase*, we have to assume that the head of the UP is on the left IP (the main clause), i.e. that the UP is not as strictly right-headed as the IP.

[7]It is interesting to note that there *is* evidence that the post-focal material here is also syntactically moved. It thus seems as if syntactic extraposition is a prerequisite for 'excluding' an argument from the main clause IP.

truly peripheral within the main clause; for example, a focused numeral cannot occur post-nominal, as in (32b), forcing (32a) instead, a structure in which the IP-head is non-peripheral:

(32) Q: Will you eat four sandwiches?/How many sandwiches will you eat?

a. Mangero TRE_{F} panini.
eat-FUT-1Sg three sandwiches

b. * Mangero panini TRE_{F}

Nevertheless, the subject here has to show up in postverbal position. That is, there is small violation of either the headedness or the phrasing constraint, allowing the accent to shift slightly to the left, as it would in English. At the same time, the amount of this violation is minimized by bringing the next bigger movable phrase containing the focus as close to the right edge of the clause as possible.[8]

4.3 Hungarian

Let us now turn to Hungarian, which is perhaps the most well-known language with a fixed focus position. The standard analysis for Hungarian describes it as having the constituent order in (33), where '(Topic*)' means 'one or more topics':

(33) (Topic*) Focus V S O

Hungarian provides clear evidence for the structural reality of the focus position (in contradistinction to Italian, as discussed above), since the focus position is not obligatorily filled, and since placement of a constituent in that position is regularly accompanied by an inversion between the verb and certain preverbal particles, glossed here as VM:[9]

(34) a. Mari fel hívta Pétert.
Mary-nom VM rang Peter-acc.

[8]There is a striking contrast with the cases discussed in Swerts et al. (2002), which involve noun-adjective sequence (and arguably deaccenting, as opposed to narrow focus), which can't be discussed here.

[9]É. Kiss (1998) argues that foci can appear *in situ* (i.e. postverbally) as well as in in the preverbal position, and that rather, the structures involving a preverbal focus are akin to English clefts. If this is correct, Hungarian is not a strict positional focus language at all. According to Szendrői (2001), however, foci cannot generally occur *in situ*.

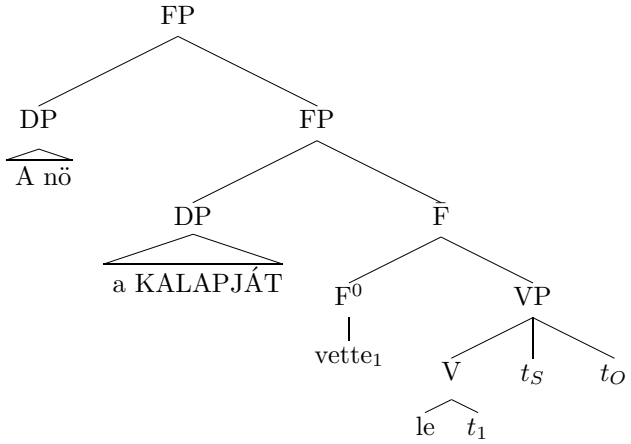
b. MARI_{F} hívta fel Pétert.
Mary-NOM *rang VM Peter*-ACC
c. *MARI fel hívta Pétert.
Mary-nom VM rang Peter-acc.
'Mary rang up Peter.' Szendrői (2000)

How does this fit the picture presented here? Szendrői (2001) argues that the movement to the pre-verbal position is prosodically driven (a position that is criticized in Horvath, 2005). On her analysis, Hungarian is basically the mirror image of Italian: The IP is left-headed (an idea already proposed in Jacobs (1991/2b)), drawing foci to the left periphery. Unlike in Italian, this involves movement to a specifier position (simply called SpecF for 'functional'), rather than adjunction.

What of the pre-focus topics? Again, not unlike in Italian, topics are outside of the main IP. Syntactically, they are adjoined to the projection hosting the focus, cf. (35b); prosodically, IP is recursive, and topics occupy the 'extrametrical' segments of IP, cf. (35c):

(35) a. A nö a KALAPJÁT vette le (nem a sálját).
the woman her cap-acc took off
'It was her hat that the woman took off (not her scarf).'

b.



c. ((*))$_{\text{IP}}$
(*)(*)(*)$_{\text{pP}}$
(A nö)(a Kalapját vette)(le)$_{\text{PWd}}$

As mentioned before, IP is strictly left headed in Hungarian. In the case of a recursive IP, the head will be left peripheral in the innermost segment of

IP, as in (35c) (that way, each IP segment has a head, and none has two). As a result of this placement, the focus position is the most prominent one.

Unlike in Italian, the left-peripheral position in IP in Hungarian is standardly filled by the verb, rather than by an argument. Therefore, no argument is ever in a 'focusable' position in the unmarked VSO order, making focus movement ubiquitous. Not only do these movements all target the same position, but they also all trigger particle/verb inversion, which is unlike in Italian. Nevertheless, according to Szendrői, there is nothing inherently 'focussy' about the preverbal position, other than that it will eventually be left-peripheral within the main IP.

Szendrői (2001) presents additional evidence for this view, which, like in Italian, involves cases in which the focus is an element that is 'naturally' left-peripheral. Since Hungarian has unmarked VSO order, this involves focus on V or a verbal projection. All these cases have an empty 'focus position' and furthermore lack particle/verb inversion. In other words, just like in Italian object focus sentences, there is no evidence of any 'focus movement':

(36) a. A kalapját a nö [$\overset{*}{\text{le}}$ vette az elöszobában]$_{\text{F}}$.
her hat-acc the woman off took the hall-in
'The woman took her hat off in the hall.' (Szendrői, 2000, p.12)

b. $\overset{(\quad *\quad)}{\underbrace{\text{a kalapját}}_{\text{topic}}}\overset{(\quad *\quad)}{\underbrace{\text{a nö}}_{\text{topic}}}\overset{(\ *\ *\ )}{\underbrace{\text{le vette}}_{\text{VP}_{\text{F}}}}\overset{(\quad *\quad)}{\underbrace{\text{az elöszobában}}_{\text{VP}_{\text{F}}}}$)$_{\text{IP}}$)$_{\text{pP}}$)$_{\text{PWd}}$

4.4 Relaxed Edge Languages

Let me briefly mention that in many languages, focus occurs *towards* an edge, but not exactly *at* the edge. Most common examples of this are strict V-final languages in which the focus appears pre-verbally (Hyun-Oak, 1988):

(37) Gujarati (Indo-Aryan)
a. A chopli konne lidi?
this book who bought 'Who bought this book?'
b. (A chopli) me lidi.
this book I bought
c. #Me a chopli lidi.

(38) Telugu (Dravidian):

a. Sita ante evariki ishtam?
   Sita ACC who like *'Who likes Sita?'*
b. Sita ante Ramki ishtam.
   Sita ACC Ram like *'Ram likes Sita.'*
c. #Ramki Sita ante ishtam.

Similar patterns are documented for Turkish, Sherpa (Tibet), Mongolian, Hindi/Urdu a.o. (Hyun-Oak, 1988).

Within the present analysis, these languages are basically like Italian and Spanish, except that they are head-final, and either completely disallow V-X structures, or allow them only as right-dislocation-like structures akin to the Italian cases discussed above. Lacking the means to get the verb out of the way, as it were, and thereby making a focused arguments truly right peripheral, these languages minimize the IP-Head-L violation by bringing the focus as close to the right IP-edge as possible, and then wrapping it with the IP-final verb:

(39)
```
(          *      )
(  *      )(  *     )
  Sita ante Ramki ishtam
```

Additional evidence for an analysis along these lines, as opposed to one that assumes a designated syntactic position for foci, may come from the fact that in many of these languages, not only verbs can intervene between a focus and the left IP-edge. Often a whole range of arguments that are generally considered very 'close' the the verb, such as locatives, indefinites etc., may separate the focus from the end of the clause. It seems promising to assume that the preverbal focus position is actually achieved by scrambling intervening phrases to the left, leaving only immobile elements to intervene between the focus and the IP-edge. Detailed studies of this language type within the present perspective have yet to be conducted.

4.5 Strict Position Languages

To repeat, a strict position language would be one that obligatorily puts focused constituents into a syntactically distinct position. The typological and theoretical literature abounds with claims that languages have 'focus positions', e.g. Armenian (Comrie, 1984), Basque (Saltarelli, 1988), Finnish (Vilkuna, 1989), Georgian (Harris, 1982), Hausa (Tuller, 1986), Hungarian (Bródy, 1990; É. Kiss, 1987), Nupe (Baker and Kandibowicz, 2003; Kandibowicz,

2006), Turkish (Erguvanlı, 1984), a.o.; but as we have seen in our discussion of Hungarian, this claim can be open to reevaluation. First and foremost, a language will only qualify as a Strict Position Language if it doesn't have an alternative *in situ* strategy; otherwise, the so-called focus construction is simply an information structurally 'loaded' construction, like e.g. English clefts. That is to say, if a language has constructions in which foci typically occur in a specific position, that doesn't make it a Strict Position Language; it would only if *all* foci are realized in that construction. Upon closer inspection, Hausa, Nupe, and, ostensibly, Hungarian belong in the former category. (It is of course an interesting question what makes constructions such as clefting, dislocation etc. information structurally 'loaded' in that way, but one that is orthogonal to the aims of the present paper.)

Second, Strict Position effects are generally amenable to a reinterpretation as edge effects. As discussed above, there are crucial cases to tease the two apart: Do the focused constituents show any independent evidence for being in a structurally distinguished position, especially if their unmarked position linearly coincides with the focus position (as we saw, this doesn't seem to be the case for Italian or Hungarian)? And is the edge effect strict, or is there a structurally definable class of elements that intervene between the focus and the pertinent edge (most clearly illustrated in the Relaxed Edge Languages)?

Taking into consideration these tests and criteria, my cursory overview didn't reveal any languages that clearly qualify as Strict Position Languages, though a more detailed investigation is needed here.

5 Mixed Languages

In the last section I have argued that languages that appear to mark focus syntactically can be analyzed using the same framework used for languages that mark focus prosodically. We have also seen that many languages of the latter kind show prosodic effects of focus as well, especially where it is syntactically impossible to bring a focus all the way to the pertinent edge of the IP.

From the perspective of the PTF it is not only unsurprising, but expected that languages should mix these two strategies, or more precisely, mix them in a broader range of cases than the ones discussed so far. And indeed, examples of that language type abound, including most of the Slavic languages, German (and to a lesser extent other Germanic languages), Japanese, Ko-

rean, European Portuguese and Finnish.

In these languages, either prosodic or syntactic structure may be used to mark focus. In either case, the reward will be that the other 'half' of structure is realized canonically; this leads to the following generalization:

(40) Generalization 1: MARKED WORD ORDER → UNMARKED PROSODY
Marked constituent order may only be used for focussing X if the resulting prosodic structure is less marked than that necessary to focus X in the unmarked constituent order.

Since the languages mentioned all are prominence final (IP-Head-R), it furthermore follows that:

(41) Generalization 2: MARKED WORD ORDER → NARROW FOCUS
Marked constituent order signals narrow focus on a right peripheral element.[10]

I illustrate this with German. German is basic S IO DO V (with verb second in root clauses yielding X V_{fin} S IO DO V_{inf}) with regular (S)(IO)(DO V) phrasing, i.e. modest wrapping. Apart from its head-final VP, German behaves like English prosodically: The head of IP is right peripheral, putting the nuclear pitch accent on the DO in neutral sentences. Shifting the head

[10]To be precise, this is true only if the marked constituent order results in a shifted nuclear accent. As Katalin É. Kiss (p.c.) reminds me, German allows fronting ('topicalization') of a nuclear pitch accented object while preserving VP focus:

(i) Was hat sie dann gemacht? (What did she do then?)
a. Sie hat [die ZEItung gelesen]$_F$.
she has the newspaper read
b. Die ZEItung$_F$ hat sie gelesen$_F$.
'She read the newspaper.'

Though a detailed discussion would lead us too far afield here, it should be noted that crucially this is only possible if no accentable elements follow the preposed object, since that would yield a shifted nuclear accent:

(ii) (same question)
a. Sie hat einem Freund ein BUCH mitgebracht.
she has a friend a book brought
'She brought a book for a friend.'
b. #Ein Buch hat sie einem Freund mitgebracht. (any intonation)

to the left yields post-nuclear deaccenting (and possibly de-structuring), and unambiguously signals narrow focus on the constituent that corresponds to the IP-head.

Crucially, any focus pattern that is consistent with the unmarked order and unmarked prosody (i.e. DO_F, $[DO\ V]_F$, $[IO\ DO\ V]_F$, $[S\ IO\ DO\ V]_F$) *must* be realized with canonical word order. To focus, say, the IO, on the other hand, either the phrasing or the constituent order has to be amended:

(42) a. ((Er hat)(dem Piloten$_F$)(die Passagiere)(vorgestellt)$_{PWd}$)$_{pP}$)$_{IP}$.
he has to-the pilot the passengers introduced

b. (Er hat)(die Passagiere)(dem Piloten$_F$)(vorgestellt)$_{PWd}$
'He introduced the passengers to the pilot.' (IO_F-DO/ DO-IO_F)

Thus German chooses the English strategy in (42a), but behaves like a relaxed edge language in (42b).

It bears reiterating that sentences with marked constituent order have a strong tendency for sentence final focus; that is to say, getting the focus into the unmarked nuclear accent position seems to be the primary motivation for constituent order variation in German.

This is not the case in all mixed languages. According to Godjevac (2000), constituent order in Serbo-Croatian can vary independently of focus placement, defying Generalization 1 (it is not clear from the literature what determines constituent order in these cases). Yet, Serbo-Croatian does share two properties with German: early nuclear pitch accent unambiguously signals narrow focus (i.e. default prosody is only abandoned for special focus patterns), as does marked constituent order (Generalization 2).

To sum up this article up until here, we have seen that the PTF not only provides a unified account of edge, position, and accent based strategies for focus, but can also account for a wide variety of mixed cases. In the next two sections, I will briefly look at less straightforward cases and offer some speculations as to how, if at all, these languages could be analyzed along similar lines.

6 Particle Languages

I am interested here in languages that characteristically mark the focused constituent itself by a special morpheme (there are also languages in which special verbal or sentential particles mark a sentence containing a focus, which I won't discuss). Examples are ubiquitous, though detailed discussions are rare. A typical example is Chickasaw, a (Western) Muskogean language, that marks subject and object focus by suffixes *-akot/-akō* and *-ho:t/-ho* (Munro and Willmond, 1994; Gordon, in press); there is no additional prosodic focus marking, and hence no marking at all for verb or sentence focus:

(43) a. hat:ak-at koni(ã) pisa.
man-sub skunk sees
'The man sees the skunk.'
b. hat:ak-akot koni(ã) pisa.
Man-foc.subj. skunk sees
'[The man]$_{\text{F}}$ sees the skunk.'
c. hat:ak-at koni-akõ: pisa.
Man-subj skunk-foc.obj. sees
The man sees [the skunk]$_{\text{F}}$.

It seems straightforward to analyze the focus morpheme as a direct spell-out of the syntactic feature F, in which case the prominence based account has nothing to offer in the analysis of these languages. Alternatively, one could hypothesize that the focus morpheme marks prominence of *prosodic* units; that would make it the counterpart of positional head marking in the languages described so far.

To illustrate what kind of data may motivate such an analysis, I will briefly discuss Gúrúntúm, a Chadic SVO language spoken in Nigeria (Hartmann and Zimmermannn, 2005; Zimmermann, 2005). Gúrúntúm has a focus marker *á*, which generally occurs before the focus:

(44) neutral: Tí bá wúm kwálíngálá.
3sg prog chew colanut *'He is chewing colanut.'*

(45) subject focus
a. **Á** kwá bá wúm kwálíngálá-ì?
foc who prog chew colanut-the

'Who is chewing the colanut?'

b. **Á** fúrmáyò bá wúm kwálíngálá.
foc fulani prog chew colanut
'[The fulani]$_F$ is chewing colanut.'

(46) object focus

a. **Á** kãèã mái tí bá wúmì?
foc what rel 3sg prog chew *'What is he chewing?'*

b. Tí bá wúm-**á** kwálíngálá.
3sg prog chew-foc colanut *'He is chewing [colanut]$_F$.*

There are two complications: first, with V and VP-focus, *á* occurs *after* the V:

(47) VP-focus

a. **Á** kãèã mái tí bá pí?
foc what rel 3sg prog do *'What is he doing?'*

b. Tí bá ròmb-**á** gwéì.
3sg prog gather-foc seeds *'He is [gathering the seeds]$_F$.'*

(48) V-focus

a. **Á** kãèã mái tí bá pí náa gwéì?
foc what rel 3sg prog do with seeds
'What is he doing with the seeds?'

b. Tí bá ròmb-**á** gwéì.
3sg prog gather-foc seeds *'He is gathering$_F$ the seeds.'*

Second, in sentences without overt objects, VP focus isn't marked by *á* at all:

(49) V-focus without overt object

a. **Á** kãèã mái tí bá pí náa dùsó-ì?
foc what rel 3sg prog do to car-the
'What is he doing to the car?'

b. Tí bá krí.
3sg prog repair *'He is repairing$_F$ (it).'*

In order to explain why *V à O* is ambiguous between V, VP, and O focus, we assume that V moves to a position outside of VP; *à*, even if marking

VP, thus linearly follows the verb.[11] Furthermore, and more to the point at hand, assume that *à* actually marks the left edge of the *prosodic* phrase containing the (base position of the) focus. Since the verb has moved to a higher position, *à* relies on whatever is left in the VP to prosodically attach to. In case there is nothing there, *à* marking is impossible, as in (49b).

This line of analysis, highly speculative though it is, extends the prosodic account of focus marking to morphological marking languages in an interesting way, in particular by proposing that the distribution of morphological markers may be determined by prosodic structure and in particular, the notion of 'prosodic head'.

Many questions remain open, though, for example: why is there no *à*-marking on all-new sentences? We have been assuming that all-new sentences are all-focus sentences, but maybe this assumption should be called into question. Another possibility is that there are constraints regarding the entire focus realization paradigm, which block sentential *à*-marking since the result would look the same as narrow subject focus (Malte Zimmermann, p.c.). Finally this may suggest that, at least in Gúrúntúm, focus marking only takes place in order to mark a *contrast* in focus status; if everything is equally focused (as in an all-new sentence), there is no need to mark any asymmetries in F-marking. I have to leave these questions for further research.

7 Non-Marking Languages

Let me close this paper with another puzzling case, from another Chadic language, Hausa. Hausa has long been described as a language that marks focus by movement into a sentence initial position, in certain tenses accompanied by a specific form of the auxiliary, called the *relative form*, and raising of lexical high tones within the focus. It turns out, though, that alongside this *ex situ* strategy, Hausa can alternatively leave foci *in situ* (Green and Jaggar, to appear; Hartmann and Zimmermannn, to appear; Jaggar, 2001). The two

[11] This idea is less absurd than it may seem. Note that association with focus also disregards head-movement, as the following German example shows:

(i) (Wir lösen das Problem nicht.) Wir verLAGern$_F$ es **nur**.
we solve the problem not we relocate it only
'We don't solve the problem. We only relocated it.'

strategies do not appear to be correlated with any semantic or pragmatic distinctions such as exhaustivity, contrastivity etc.

(50) Q: Mèe su-kà kaamàa?
what 3pl-rel.perf catch
'What did they catch?'
A: Sun kaamà dawaakii (nè).
3pl.perf catch horses PRT
'They caught horses$_{F}$.' OBJ-NP

(51) Q: Mèe Tankò ya yi wà hàr̃aajì-n?
what T. 3sg.rel.perf do to taxes-DET
'What did Tanko do with the taxes?'
A: Tankò yaa biyaa hàr̃aajì-n (ne).
T. 3sg.perf pay taxes-DET PRT
'Tanko paid$_{F}$ the taxes.' V

(52) Q: Mèeneenèe ya fàaru?
what 3sg.rel.perf happen
'What happened?' IP
A: Tankò yaa biyaa hàr̃aajìn (ne).
T. 3sg.perf pay taxes PRT
'Tanko [paid the taxes]$_{F}$.'

This, in and of itself, is not novel. Two additional facts, however, elevate Hausa to the level of a conundrum. First, *in situ* focus appears to lack any acoustically measurable or perceivable marking; a sentence with basic SVOO order is ambiguous between focus on either object, the verb, the whole sentence, or the verb phrase. So one might be inclined to think that focus is simply not relevant in Hausa at all. However, and this is the second crucial fact, focused *subjects* must occur in the focus position, and obligatorily trigger the relative form of the auxiliary (where applicable; all data from Hartmann and Zimmermannn (to appear) & p.c.):

(53) Q: Wàa ya-kèe kirà-ntà?
who 3sg-rel.cont call-her
'Who is calling her?'
A1: Daudàa (nee) ya-kèe kirà-ntà.
D. PRT 3sg-rel.cont call-her
'Dauda$_{F}$ is calling her.'

A2#Daudàa ya-nàa kirà-ntà.
D.$_F$ *3sg-cont call-her*

The biggest problem with explaining this pattern within the prosodic account is that the subject in sentences without focus-movement like A2 is in the same prosodic position as focus in sentences with focus-movement like A1: left-peripheral. So even disregarding the differences between subjects and non-subjects, the prosodic theory cannot offer any reason why the subject should undergo essentially string-vacuous movement in order to be marked as focus (recall that the absence of any evidence for string vacuous movement of peripheral constituents in Italian, Spanish and Hungarian was considered a strong argument in favor of the prosodic account).

One way to incorporate a language like Hausa into framework of the PTF is to allow for the notion of prominence to be alternatively defined in syntactic terms, along the lines of the hierarchies in (54):

(54) a. focus position $>_{Prom}$ rest
b. rest $>_{Prom}$ subject

That is to say, the *syntactic* subject position is inherently less prominent than the rest of the clause, and the *syntactic* focus position is inherently more prominent than the rest of the clause. FocusProminence requires action if the focus is less prominent than a non-focus; this would be the case if either a non-focus were moved to the focus position, or a focused subject were left *in situ*, exactly the two options excluded in Hausa. Non-subject foci are allowed to stay *in situ* since, absent a filled focus position, their position is (one of) the most prominent (ones) in the clause.

This analysis preserves the general architecture of the prominence based theory of focus, but crucially parameterizes the notion of prominence as either syntax-based (Hausa) or prosody-based (English etc.). This doesn't mean that the prosodic (re)analyses of apparently syntactic focus strategies such as in Italian, Spanish or Hungarian should be abandoned. I still believe that the arguments given there are convincing. But it does mean that the strongest conceivable version of the prominence based theory, which universally defines prominence in terms of prosodic structure, seems untenable. Of course it is very possible that future investigation of Hausa and other languages like it will reveal a way to reconcile it with the strongest theory. This question, too, will be left for future research.

8 Conclusion

This paper presented, in very broad strokes, the outlines of a cross-linguistic theory of focus realization. I tried to show how a Prominence Theory of focus realization affords a uniform and explanatory account of seemingly unrelated ways in which various languages realize focus, but also, where it fails to do so, at least in a straightforward way.

My intention in this paper was to explain and illustrate the general logic of the PTF, indicate open theoretical and empirical questions, and thus invite further, and more detailed, research within this paradigm.

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