Parallel Extended Domains of A and N

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1 Introduction

This paper provides an account of cross-linguistic variation regarding availability of adverb extraction out of traditional adjective phrases (TAPs)\(^1\) illustrated in (1).

(1) (*)Terribly he was t tired.

I establish two novel generalizations about parametric differences between languages that have articles and languages that lack articles and I consider what theoretical implications these generalizations have regarding the structure of TAP across languages and phasehood of projections in this domain.

Extraction of leftmost elements in the nominal domain has been discussed in the literature ever since Ross (1967/1986: 127) proposed the Left Branch Condition, which blocks movement of determiners, possessors, and adjectives out of TNPs in some languages. However, it has been noticed (already by Ross (1986) for Russian; and later by Uriagereka (1988) and Bošković (2005) for Latin and most of Slavic languages in addition to Russian, more precisely the ones that do not have articles) that this condition does not hold in all languages and it has been established that languages allow left branch extraction of adjectives if they lack articles. In this paper, I explore the left branch within the TAPs in English, Dutch, German, Brazilian Portuguese, Spanish, Bosnian/Croatian/Serbian (BCS), Polish, Russian, Slovenian, Icelandic and Bulgarian and show that the lack of articles in a language correlates with the availability of adverb extraction out of predicative TAPs, but all languages behave uniformly regarding adverb extraction out of attributive TAPs in that they all ban such extraction. Concerning these two findings, I address the following questions. First, it is necessary to determine what the availability or unavailability of adverb extraction out of predicative TAPs in different languages follows from. I argue that this reflects structural parallelism between TAPs and TNPs, and that it follows from locality constraints on extraction out of phases in an approach to phases where every lexical category, including adjectives, projects a phase within its extended domain (Bošković 2013, 2014). Second, I explore why this variation regarding adverb extraction out of TAPs is neutralized in the context of attributive adjectives, and argue that there is a connection between the unavailability of adverb extraction in these contexts and the fact that many languages have morphologically different forms of adjectives reserved for attributive use. Finally, I show that languages with affixal articles pattern with languages without articles with respect to adverb extraction out of predicative TAPs, just like it has been noticed in the literature for other phenomena (wh-island insensitivity - Bošković 2008; possessive reflexives - Reuland 2011; Despić 2011).

I start with discussing the variation in intensifier extraction out of predicative TAPs, and implications it has for the structure of TAPs in different languages in Section 2. In Section 3, I address the lack of variation in adverb extraction out of attributive TAPs, and I discuss why affixal article languages pattern with languages without articles in Section 4.

2 Intensifier Extraction out of Predicative TAPs

Extraction of intensifying adverbs out of predicative TAPs, or out of TAPs in general, has not received much attention in the literature. However, a survey of a number of languages testing such

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\(^1\)I will be using notions “traditional adjective phrase (TAP)” and “traditional noun phrase (TNP)” throughout the paper when there is no need to commit to the precise categorial status of the maximal projection in the extended domain of A and N.

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extraction reveals an interesting split between two groups of languages. English, Dutch, German, Brazilian Portuguese (BP), and Spanish disallow adverb extraction out of predicative TAPs, which is shown by the following examples.

(2) a. *Terribly, I am [t₁ tired]  
   (English)
   cf. Ik ben ontzettend moe.
   ‘I am terribly tired.’

b. *Ontzettend, ben ik [t₁ moe]  
   (Dutch)
   cf. Ik ben ontzettend moe.
   ‘I am terribly tired.’

c. *Schrecklich, bin ich [t₁ müde].  
   (German)
   cf. Ich bin schrecklich müde.
   ‘I am terribly tired.’

d. *Terrivelmente, eu estou [t₁ cansado].  
   (BP)
   cf. Eu estou terrivelmente cansado.
   ‘I am extremely tired.’

e. *Extremadamente, (yo) estoy [t₁ cansado]  
   (Spanish)
   cf. (Yo) estoy extremadamente cansado.
   ‘I am extremely tired.’

In contrast, Bosnian/Croatian/Serbian (BCS), Polish, Russian, and Slovenian allow such extraction, as illustrated in (3).

(3) a. Strašno, je bila [t₁ umorna].  
   (BCS)
   ‘I am terribly tired.’

b. Okropnie, on był [t₁ zmęczony]  
   (Polish)
   cf. On był [okropnie zmęczony].
   ‘He was terribly tired.’

c. Užasno, ja byl [t₁ rad tebja videt’].  
   (Russian)
   cf. Byl užasno rad tebja videt’.
   ‘I was very glad to see you.’

d. Strašansko, je bila [t₁ utrujena].  
   (Slovenian)
   ‘She was terribly tired.’

This raises the question of what this variation among languages follows from and whether availability of adverb extraction can be linked to some typological property of languages in the two groups. In that respect, given that we are observing extraction from TAPs, the first typological property one might consider is agreement. It is well known that some languages have agreeing adjectives in attributive and/or predicative position, while adjectives in other languages never show agreement. However, given that both (2) and (3) contain languages in which adjectives show gender and number agreement, we can conclude that agreement of adjectives does not correlate with adverb extraction.

What does separate languages in (2) from the ones in (3) is that all languages in (2) have articles, while all languages in (3) lack articles. Given this, we can make the following generalization:

(4) Generalization I: Languages with articles disallow Adv-extraction out of predicative TAPs, but languages without articles may allow it.

An obvious question that arises at this point is: What does lacking or having an article in the nominal domain have to do with extraction possibilities in the adjectival domain? That is, why does
not having articles in the nominal domain coincide with availability of extraction in the adjectival domain. It is clear that the presence or absence of articles cannot influence extraction possibilities within the predicative TAP directly. However, it is still possible that the two are indirectly related, as I will argue below. In what follows I first discuss a generalization that makes the same cut between languages that have articles and those that do not, which was established based on a similar phenomenon in the nominal domain (LBE), and then I introduce an existing phase-based account of LBE.

Similar to (4), Bošković (2005/2012) observes a correlation between availability of adjetival LBE and the absence of articles in languages (see also Ross (1967, 1986); Uriagereka (1988)):

(5) Only languages without articles may allow LBE, while languages without articles never allow it.

This is illustrated below with examples from BCS, which allows LBE (6a), and English, which disallows it (6b).

(6) a. Pamatni su oni [ti studenti]. (BCS)
    smart are they students

b. *Smart, they are [ti students]. (English)

Bošković (2013, 2014) argues that (5) follows from a structural difference between TNPs in the two groups of languages and gives an account of this split based on a contextual approach to phases, where phasehood is not reserved exclusively for vP, CP (Chomsky 2000, 2001), and DP (Svenonius 2004, Chomsky 2008). Instead, as argued by a number of authors recently (Bobaljik & Wurmbrand 2005; Bošković 2013, 2014; Gallego & Uriagereka 2007; den Dikken 2007; Despić 2013; M.Takahashi 2011; Wurmbrand 2014, a.o), whether a category X is a phase head or not depends on its syntactic context. Specifically, Bošković (2013) argues that the highest projection in the extended domain of a lexical head (including N and A) functions as a phase. Phasehood of a category depends on the amount of structure projected in its extended domain, which can vary cross-linguistically. Within the nominal domain, DP is a phase in languages with articles. However, many have argued that DP is missing in languages without articles (Corver 1992; Zlatić 1997; Bošković 2012, 2013; Despić 2013, among others), so NP is a phase in BCS, as the highest projection in the TNP. What the generalization in (5) follows from in this system is an interaction of two locality constraints. First, each element moving out of a phase needs to satisfy the Phase Impenetrability Condition (PIC) (Chomsky 2000, 2001) and move through the phase edge if it does not originate there to begin with in the Spec or phase-adjoined position. Movement steps also cannot be too short. In that regard, Bošković (1994, 2005) argues that a moving element needs to cross a full maximal projection rather than just a segment (see also Grohmann 2003; Abels 2003; Saito and Murasugi 1999, among others regarding anti-locality). Assuming that APs originate as NP-adjoined, to move out of DP in languages with articles, a moving adjective would have to move to SpecDP first to satisfy the PIC, but this step violates anti-locality since it crosses only a segment of NP. This explains why LBE is not possible in these languages. Contrary to that, languages without articles lack the DP layer, so NP-adjoined adjectives originate at the edge of the nominal phase (the NP) and can move out of it without violating any locality constraints.

(7) a.

b.

Similarly, Bošković shows that NP-adjects other than APs are also only extractable in NP lan-
guages. Compare English and BCS in (8) below.

(8) a. *[From which city] did you meet [DP [NP [NP girls] t]]?
    b. [Iz kojeg grada] si se [NP [NP djevojke] t]]?  

This is accounted for in the system in the same way. For a moving PP that originates as NP-adjoined, the obligatory first step of movement to SpecDP (due to the PIC) is blocked by anti-locality.

(9) a.

Furthermore, deep LBE is also impossible even in languages without articles if there is a phase (e.g. another NP) projected right on top of the NP:

(10) *Pametnih smart.gen he appreciates friends.acc students.gen
    cf. On cijeni prijatelje pametnih studenata.
    ‘He appreciates friends of smart students?’

In this case, the moving AP has to stop in the specifier of the higher NP, but this violates anti-locality.

In sum, for an adjective to move out of an NP, there must not be a phase projected right on top of it. More generally, it follows from the system that, in the extended projection of any lexical head, it is impossible to extract an element adjoined to the complement of a phase head.

2.1 Parallel extended domains

We can now go back to the generalization established about adverb extraction in (4). In the discussion about adjunct extraction out of TNP in different languages, it has been shown that the amount of structure projected within the extended domain of a lexical category correlates with the extraction possibilities of elements contained in it. Thus, extraction possibilities of an element may sometimes be used as a diagnostic of the amount of structure present within the extended projection it originates in. In particular, following the idea of structural parallelism between different extended projections (Abney 1987 – TNP/clause parallelism; Bošković 2004 – PP/clause parallelism, among others), I propose that the generalization about intensifier extraction in (4), and data in (2)-(3) suggest that, within a single language, extended projections of different lexical categories tend to be uniform with respect to their structural complexity.

(11) a. If a language has functional structure within TNP (DP), it also has functional structure in TAP (let us call it XP).
    b. If a language has a bare NP, it also has a bare AP.

Assuming that intensifying adverbs are AP-adjoined (12) (parallel to adjectives in TNP), the difference between languages with and without articles in (2)-(3) can be easily captured under the contextual approach to phases.
Recall that under this approach, the highest projection in an extended domain functions as a phase. Thus, in languages with XP in their adjectival domain, XP functions as a phase, but in languages with bare AP, AP functions as a phase. To move out of a TAP, the adverb needs to move to the edge of TAP unless it originates at the edge. In languages with articles (2), where XP is projected above AP, this step violates anti-locality. Alternatively, moving the adverb out of the XP phase without stopping in SpecXP violates the PIC (12a). Contrary to that, in languages without articles (3), there is no XP above AP, so AP is a phase. The adverb is adjoined to the AP, already at the edge of the adjectival phase, and ready to move out of it (12b).

3 Attributive TAPs

Testing the same adverb extraction out of attributive TAPs shows that there is no variation between languages regarding this operation, and that such extraction is uniformly banned. Consider examples from languages with articles in (13) and from languages without articles in (14).

(13) Languages with articles:
   a. *Extremely, she has seen a [t, tall] man. (English)
      cf. She has seen an extremely tall man.
   b. *Zeer, had ze een [t, lange] man gezien (Dutch)
      extremely has she a tall man seen.
      cf. Ze had een zeer lange man gezien.
      ‘She has seen an extremely tall man.’
   c. *Extrem, hat sie einen [t, großen] Mann gesehen. (German)
      extremely has she a tall man seen.
      cf. Sie hat einen extrem großen Mann gesehen
      ‘She saw an extremely tall man.’
      extremely has she the tall man seen
      cf. Sie hat einen/den extrem großen Mann gesehen
      ‘She saw an extremely tall man.’
   e. *Extremamente, ela viu um homem [t, alto] (BP)
      extremely she saw a man tall
      cf. (Ella) viu um homem extremamente alto.
      ‘She saw an extremely tall man.’
   f. *Extremadamente, (ella) viu un hombre [t, alto]. (Spanish)
      extremely she saw a man tall
      cf. (Ella) viu un hombre extremadamente alto.
      ‘She saw an extremely tall man.’

(14) Languages without articles:
   a. *Izuzeto, su kupili [t, skuplj] automobil. (BCS)
      extremely are bought expensive,LF car
      ‘They bought the extremely expensive car/ one of the extremely expensive cars.’
   b. ??/*Niezwycz, ona widziała [t, wysokiego] mężczyznę (Polish)
      extremely she saw tall man.
      cf. Ona widziała niezwykle wysokiego mężczyznę
   c. *Ochen', ona uvidela [t, wysokogo] čeloveka. (Russian)
very she saw tall man

\begin{itemize}
  \item cf. Ona uvidela očen' vsokogo človeka.
  \begin{itemize}
    \item ‘She saw the very tall man.’
  \end{itemize}
  \item d. *Izjemno je kupila [t_{i} lep] plašč. \quad \textit{(Slovenian)}
  \begin{itemize}
    \item extremely is bought beautiful coat
    \item cf. Kupila je izjemno lep plašč
    \begin{itemize}
      \item ‘She bought an extremely beautiful coat.’
    \end{itemize}
  \end{itemize}
\end{itemize}

Based on (13) and (14), we reach the generalization in (15):

\begin{itemize}
  \item (15) Generalization II: Adv-extraction is disallowed out of attributive TAPs.
\end{itemize}

This generalization gives rise to the question of what is responsible for the difference between the two groups of languages concerning the availability of adverb extraction being neutralized in the attributive position. It is well known that many languages have a different form of adjectives reserved for the attributive position. For instance, BCS adjectives have a long and a short form (poz-nati – famous.long.M vs. poznat – famous.short.M). Long form can only be used attributively.

\begin{itemize}
  \item Compare (16a) and (16c).
\end{itemize}

\begin{itemize}
  \item (16)
    \begin{itemize}
      \item a. poznatj pjesnik
        \begin{itemize}
          \item famous.LF poet
          \begin{itemize}
            \item ‘the/a famous poet’
          \end{itemize}
        \end{itemize}
      \item b. Mak Dizdar je poznat.
        \begin{itemize}
          \item Mak Dizdar is famous.SF
          \begin{itemize}
            \item ‘Mak Dizdar is famous.’
          \end{itemize}
        \end{itemize}
      \item c. *Mak Dizdar je poznatj.
        \begin{itemize}
          \item Mak Dizadar is famous.LF
          \begin{itemize}
            \item ‘Mak Dizdar is famous.’
          \end{itemize}
        \end{itemize}
    \end{itemize}
\end{itemize}

Similarly, Russian also distinguishes between long and short form of adjectives (novy – new.long.M vs. nov – new.short.M). While the short form never occurs attributively (17a), the long form is reserved only for this use (17b). In some cases, the long form appears to be used predicatively (17d), but it has been argued that such adjectives are followed by a null generic head meaning ‘man’, ‘woman’, ‘person’, or ‘entity’ (see e.g. Bailyn 1994; Babby 2010). Therefore, the long form that seems to be in the predicative position is actually an attributive adjective.

\begin{itemize}
  \item (17)
    \begin{itemize}
      \item a. *nov dom stoit na gore
        \begin{itemize}
          \item new.SF house.NOM stands on hill
        \end{itemize}
      \item b. novyi dom stoit na gore
        \begin{itemize}
          \item new.LF house.NOM stands on hill
        \end{itemize}
      \item c. Dom nov.
        \begin{itemize}
          \item house.NOM new.SF stands on hill
        \end{itemize}
      \item d. Dom novyi.
        \begin{itemize}
          \item house.NOM new.LF stands on hill
        \end{itemize}
    \end{itemize}
\end{itemize}

Furthermore, German uses agreeing adjectives in the attributive position, but non-agreeing adjectives in predicative position (kleine – small.agr vs. klein – small).

\begin{itemize}
  \item (18)
    \begin{itemize}
      \item a. der kleine Hund
        \begin{itemize}
          \item the small dog
        \end{itemize}
      \item b. ein kleiner Hund
        \begin{itemize}
          \item a small dog
        \end{itemize}
      \item c. *der/ein klein Hund
        \begin{itemize}
          \item the/a small dog
        \end{itemize}
      \item d. Der Hund ist klein.
        \begin{itemize}
          \item the dog is small
        \end{itemize}
    \end{itemize}
\end{itemize}

\begin{itemize}
  \item [Cinque (2010); Pereltsvaig (2000)]
\end{itemize}

\begin{itemize}
  \item [Aljović (2010)]
\end{itemize}
On the grounds of such differences between attributive and predicative adjectives often found in languages, it is reasonable to assume that attributive adjectives have more complex structure even in languages with bare predicative TAPs. In fact, based on syntactic and semantic properties of the long/short adjective paradigm in Russian (17), Bailyn (1993), following Rubin (1991) argues that attributive TAPs quite generally must have a functional projection above the AP. That is, such TAPs cannot be bare APs. Given the existence of such a projection, we capture the fact that adverb extraction is blocked in both (13) and (14) in the same way as we did for (2): a functional projection is always present in attributive TAPs, blocking adverb extraction, due to the conflict of the PIC and anti-locality.

(19)

\[
\begin{array}{c}
\text{XP} \\
\text{AP} \\
\text{AdvP} \\
\text{AP}
\end{array}
\]

In sum, regarding predicative position, we have seen that languages with articles, which have functional projection within the TNP, also have functional projection within the TAP, while languages without articles lack functional projection in both TNPs and TAPs. In attributive position, even languages without articles have more structure, which is motivated by the presence of additional morphology in this position in many languages (See Bošković (2013, 2014) for arguments that even in NP-languages more structure is projected above the NP in the presence of non-agreeing quantifiers that belong to the extended domain of N). There are, however, some apparent exceptions to the generalization in (4), both coming from languages with affixal articles, which I address in the following section.

4 Exceptions that are not exceptions

Concerning the generalization in (4) that only languages that lack articles allow adverb extraction out of predicative TAPs, Icelandic and Bulgarian seem to behave as exceptions. These two languages have articles, but they allow adverb extraction out of predicative TAPs, as shown in (20a) for Icelandic and in (20b) for Bulgarian.

(20) a. Rosalega, er hún [tₐ fallleg].
    extremely is she beautiful.SG.F
    (Icelandic)

   b. Užasno, sūmbjah [tₐ umoren].
    terribly am /was tired
    (Bulgarian)

If we keep the structural parallelism hypothesis for these DP-languages as well, and assume that they also only have the XP option for TAPs in both attributive and predicative position, along with the rest of DP-languages, this raises the question of how phasehood effects of XP get voided in these languages? On the other hand, if we suppose that these languages have bare APs on par with other languages that allow adverb extraction (languages without articles), rather than XPs, the question arises why the structural parallelism does not hold for these DP-languages.

Crucially, articles in these two languages are affixal. With respect to several phenomena, languages with affixal articles have been argued to behave like languages without articles, voiding locality violations. As argued by Rudin (1988) for Bulgarian, and later established by Bošković (2008) for a number of languages (Bulgarian, Swedish, Romanian, Norwegian, Hebrew, and Albanian), affixal article languages can void certain islandhood effects. This is illustrated with examples of Bulgarian and Icelandic being insensitive to wh-islands in the examples below.

(21) a. Vidjah edna kniga, kojatoₐ se čudja koj znae koj prodava tₐ. (Bulg.)
    saw one book which-the SE wonder who knows who sells
Moreover, these languages also behave exceptionally with respect to anaphor licensing. In particular, binding domains for anaphors have been analyzed in terms of phases. It has been argued that anaphors need to be bound in their minimal phase (Canac-Marquis 2005, Hicks 2006, Lee-Schoenfeld 2004, Quicoli 2008, Despić 2011, a.o.). Reuland (2011) and Despić (2011) observe that reflexive possessives are available in NP-languages, but not in DP-languages:

(22) a. *John saw himself’s book
    (English)
    b. Ivan je vidio svoju knjigu.
    Ivan is seen self’s.ACC book.ACC
    [Despić (2011)]

Crucially, DP-languages with affixal articles pattern with NP-languages, rather than with DP-languages with non-affixal articles, in allowing reflexive possessives within their DPs.

(23) Petko vidya svojata kniga
    Petko saw self’s.[+DF] book
    [Despić (2011)]

If DP is a phase in languages with affixal articles, (23) indicates that anaphors seem to be licensed outside their minimal phase. We can state the requirement for anaphor licensing as the following:

(24) A reflexive anaphor has to be bound within the minimal phase projected by a strong functional head.

Let us consider what follows from (24). In DP-languages, DP is a phase headed by a strong functional head (free morpheme) and a reflexive anaphor cannot be licensed outside of its minimal DP (22a). In NP-languages, there is no functional projection within the NP-phase, so the TNP does not close the binding domain of reflexives. The closest phase with functional structure is vP, which introduces the subject. This allows for the subject to bind the reflexive in the NP, as in (22b), allowing for subject oriented reflexive possessives in NP-languages. Concerning affixal article languages, Despić (2011) argues that an affixal D is dependent on its complement for morpho-phonological purposes. The affix has to be pronounced in the same Spell-Out domain as its host, so Spell-Out of its complement is delayed until the next phase head enters. For simplicity, we can say that D is a “weak” phase head in Icelandic and Bulgarian (delaying Spell-Out of its complement), while D is a “strong” phase head in non-affixal article languages (forcing Spell-Out of its complement). This delay extends the binding domain to vP, which is the same as the binding domain of reflexives in NP-languages, so the subject can now bind into the DP in Bulgarian and Icelandic. This makes them parallel to NP-languages in the availability of reflexive possessives.

Returning to the question of why affixal article languages pattern with NP-languages, in the availability of adverb extraction out of predicative TAPs, there are two equally plausible explanations based on behavior of affixal article languages with respect to other domains that are opaque for certain processes in other DP-languages, but not in NP-languages (21)-(23). One option is that the presence of a weak D does not force the presence of functional projection in other domains, so these languages have bare APs in the predicative position just like NP languages.

(25)

We have seen, however, that even in the presence of functional projection in other domains, de-
layed Spell-Out of the complement of the phase head sometimes enables elements within a phase to establish a relation with some element from a higher phase, which would not be possible without this delay (cf. (22) and (23)). Thus, an alternative to not having a functional layer within the TAP in affixal article languages is that the XP is present just like in other DP-languages, but that X is weak and does not block adverb extraction under consideration.

5 Conclusions

In this paper I have established two generalizations regarding adverb extraction out of TAPs across languages. First, I have shown that languages with free articles disallow adverb extraction out of predicative TAPs, while languages without articles allow it. I have argued that this follows from languages with articles having more structure across domains than languages without articles, and from locality constraints on movement. Extraction possibilities of elements that originate adjoined to AP and NP, demonstrated that the presence or the absence of additional structure influences the mobility of elements in a parallel fashion in different domains. With respect to languages with affixal articles, I have shown that they behave like languages without articles, which follows from their more general behavior regarding voiding effects of different locality domains. I have noted that there are two plausible explanations of why these languages pattern with NP-languages in allowing adverb extraction out of predicative TAPs: they either lack the functional projection above AP that is projected in other DP-languages, or they have the same amount of structure in their TAPs as other DP-languages, but their XP layer is as transparent as their DP in the TNP. I leave teasing these two options apart for future research. Finally, I have shown that all languages have more complex TAPs in the attributive position, which in some languages has morphological reflexes.

References


