

UNIVERSAL DP-ANALYSIS IN ARTICLELESS LANGUAGE: A CASE STUDY IN CZECH¹

LUDMILA VESELOVSKÁ

Department of English and American Studies, Palacký University, Olomouc
ludmila.veselovska@upol.cz

ABSTRACT: The paper argues in favour of a universal DP hypothesis in articleless Czech. The data are demonstrated showing the semantic, morphological and syntactic evidence in favour of the existence of a functional domain with a usually covert head above the projection of a lexical Noun. The semantic arguments are based on interpretation and binding facts. The pronominal morphology of the candidates for the lexical entries in the functional domain is compared with the Czech adjectival morphology, showing the distinction between the two. In syntactic domain the distribution and word order restrictions are demonstrated together with the results of corpora search.

KEY WORDS: Czech DP; determiners; functional domain; NP word order.

1. IS THERE IS A FUNCTIONAL HEAD ABOVE NP? WHICH ONE?

The DP hypothesis proposed in Abney (1987) was since its origin intended as plausibly universal, in keeping with the prevailing beliefs within the Principle and Parameter framework of the 1980s. However, as soon as it was generally accepted for languages like English, a discussion started as to whether the same DP structure is the best way to also describe the languages with no articles, like e.g. Slavic. Already within the Barriers' framework, Norbert Corver (1990) proposed a parametric variation in a D domain claiming that a missing D projection is the reason for the transparency of Slavic nominal phrases with respect to the extraction of focused adjectival modifiers.²

At the same time, however, other authors argued that an article is not the exclusive lexical entry representing the Determiner head (recall that Abney did not make many claims concerning English articles) and also that Slavic languages show properties which are best explained using the concept of a universal DP. Also the theoretical implementation of functional heads became more refined and to deny their existence in some group of languages seems more and more difficult. The discussion got gradually less bi-polar and it concentrated more on the feature content and characteristics of the D projection, arguing also in favour of other and/or alternative functional heads in the extended projection of a lexical Noun.

The following table lists on the left proponents of a universal DP structure in Slavic – i.e. those who propose a universal functional head on the top of the NP projection. The right column lists

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² The restriction on the so called “left branch extractions” was stated as *Left Branch Condition* already in Ross (1967). Corver's (1990) dissertation reinterprets it as a constraint forced by the overt D which projects a minimality barrier and blocks the extraction of pronominal material. However, Veselovská (1995) proposes an alternative analysis for the extractions in terms of remnant movement avoiding the DP/PP split. This analysis does not require a weakening of the universal DP hypothesis. More lately Bašić (2004) or Petrović (2011) argue in favor of similar analyses in Serbian and other Slavic languages. All the remnant movement analyses are motivated with the need to remove the non-focused material out of the DP before the remnant is fronted to the initial Focus Phrase. In this way the extractions are related to the Information structure which typically results in re-orderings of sentence constituents in the relevant Slavic languages. The controversial phenomena are not discussed in this book in more detail.

authors who believe in a more language specific (parametrised) approach and propose that the missing DP is able to explain also some of the specific properties of the Slavic languages with no articles.³

(1) Universal vs. parametrised nominal projection

	Universal QP / DP / NP structure	Parametrised QP / DP / NP structure
Czech	Veselovská (1995, 2001)	Corver (1990)
Russian	Pereltsvaig (2007, 2013)	Bošković (2005, 2008, 2009)
Serbo-Croatian	Progovac (1998), Bašić (2004), Caruso (2011, 2012)	Zlatić (1997, 1998)
Polish	Rutkowski (2002)	

In this paper I am going to summarise the arguments which in my view show that the universal DP hypothesis is to be accepted for Czech. Most of these data have been shown for some Slavic languages already but not all has been related to Czech and demonstrated in more detail on Czech data. The data supporting the DP hypothesis for Czech can be taken from all linguistic domains.

2. INTERPRETATION OF THE NOMINAL COMPLEX

The presence of D is not always discussed with a connection to some very specific interpretation. It is in fact related to the more basic semantic properties on the nominal category – namely to its ability to become an **argument** carrying a Theta Role of a verbal predicate. Longobardi (1994) claims that only DP can be interpreted as arguments, relating thus the presence of the DP layer to a more semantic version of the Case Filter. Also, Borer (2005) states that only DPs have referential indices and can be interpreted as arguments.

Even more explicit claim about the importance of the DP projection for the semantics of the noun can be found in Beavers (2003, 3–4). The author proposes a *Nominal Phrase Semantic Well-Formedness Condition* which requires all well-formed noun phrases to have both **D-Semantics**: (i.e. features of quantification, [in]definiteness, and genericity) and **N-Semantics**: (i.e. attributive/restrictive semantics, restriction set, etc.)

The following example (2) shows that Czech articleless nouns like *chlapec* (“boy”) and *ryby* (“fish”) can serve as arguments as well as proper Nouns or pronouns in English.

- (2) a. *Chlapec/Marie/Ona/Každý miluje ryby /své_{REFL} rodiče*
 b. **Boy/A boy/Mary/She/Everybody loves fish/his/her parents*

Moreover, assuming a parallel structure for lexical and functional domains in VP/IP and NP/DP, we can also expect a kind of **external argument** in the high periphery of the nominal projection which would show properties of a structural subject, potentially a SPEC of a related functional head. In English those elements are possessives (pronouns and DPs marked with the morpheme -'s). The following example (3b) shows that the Czech possessive is able to bind an anaphor as well as the English one. Having a referential set it can serve as an external argument located in the domain above NP. The contrasted example (3c) demonstrates that Adjectives do not have this property.⁴

- (3) a. *učitel_i věčně mluví o sobě_{i/*j}*

³ The latter claim, the so called *DP/NP Parameter*, is repeated mainly in the works by Željko Bošković (see table (1)). For a more universal treatment of a nominal projection containing apart from the D category also a string of other functional heads see e.g. Alexiadou 2001 and many works cited there.

⁴ A credit for these data belongs to prof. Petr Karlík (personal communication).

		teacher _i	permanently talks	about himself _{i/*j}
POSS	b.	<i>učitelovo</i> _i	<i>věčné mluvení</i>	<i>o sobě</i> _{i/*j}
		teacher's _i	permanent talking	about himself _{i/*j}
ADJ	c.	<i>učitelské</i> _i	<i>věčné mluvení</i>	<i>o sobě</i> _{*i/j}
		teacher _{ADJ-i}	permanent talking	about ??self _{*i/j}

I therefore conclude that the presence of an overt article is not required for a nominal entry to be analysed as referential, quantifiable, argumental and able to bind an anaphor, and so Czech nominal phrases are to be analysed as containing a functional projection DP, in spite of the fact that the D head does not host an overt free morpheme.

3. LEXICAL ENTRIES IN THE FUNCTIONAL DOMAIN ABOVE N

Any descriptively adequate grammar discussing the elements appearing in the domain of a head noun distinguishes several groups of entries, each of which shows specific characteristics. In a generative framework the first truly detailed description of English can be found in Jackendoff (1977). The high periphery of his NP contained three separate functional layers hosting Demonstratives, Quantifiers, Numerals, and Possessives. In Abney (1987) this domain was labelled as **functional** and the list of possible entries was restricted to **closed class** elements (the only apparent exceptions – the possessive DPs – were located in the SPEC of the functional head). The functional domain is distinct from the following **lexical** domain, which contains typically **open class elements** (mostly Adjectives), as well as of course the head Nouns.⁵

3.1 MORPHOLOGY (FUNCTIONAL VS. LEXICAL)

The functional and lexical domains preceding the head Noun in Czech contain the same range of lexical entries as the English one. As for their morphology, the Czech open class Adjectives have “adjectival” morphology, with a typical long vowel paradigm. In contrast to the adjectival agreement, the functional field of closed class elements in Czech typically shows a (short vowel) “pronominal” morphology with Demonstratives and some Qs.⁶

Other Quantifiers, e.g. *mnoho/málo* (“much/few”) *pět* (“five”), *její* (“her”), and some Possessives, e.g. *moje/tvoje* (“my/your”) have rather **fossilised** and **idiosyncratic** morphology which is also distinct from the adjectival long vowel paradigm. The following table shows examples of standard adjectival (Case) agreements in Czech compared with a possessive and a general quantifier.

(4) Comparing adjectival (long), pronominal (short) and fossilised (numeral) paradigms

[MASC,SINGULAR]	ADJ: <i>mladý</i> (“young”)	PRON: <i>můj</i> (“my”)	Q: <i>mnoho</i> (“many/much”)
Nominative	<i>mlad-ý</i>	<i>můj</i>	<i>mnoh-o</i>
Accusative	<i>mlad-é-ho</i>	<i>moj-e-ho</i>	<i>mnoh-o</i>
Genitive	<i>mlad-é-ho</i>	<i>moj-e-ho</i>	<i>mnoh-a</i>
Dative	<i>mlad-é-mu</i>	<i>moj-e-mu</i>	<i>mnoh-a</i>
Locative	<i>mlad-é-m</i>	<i>moj-e-m</i>	<i>mnoh-a</i>
Instrumental	<i>mlad-ý-m</i>	<i>moj-i-m</i>	<i>mnoh-a</i>
Vocative	<i>mlad-ý</i>	<i>můj</i>	<i>mnoh-o</i>

⁵ Phonetic realization of the Czech functional demonstrative *ten* (“this”) in terms of its informational relevance is discussed here in Chapter VI.

⁶ For a detailed generative description of the adjectival paradigm in languages with rich agreement see Emonds (2012). Contrastive analysis based on typological distinction between synthetic Czech and analytic Chinese is provided in Chapter VIII below for adjectival morphology in a language acquisition framework.

Given that the lexical entries show a distinct type of agreement morphology, it is reasonable to assume that their host category and/or nature of the agreement process are structurally distinct and that the possessive pronouns are functional.

3.2 HEAD-LIKE PROPERTIES

In the preceding section I compared agreement paradigms of the Czech adjectives, quantifiers and pronominal elements. All of them, however, do agree and do not show many independent head-like properties. This should not be surprising given that Czech is a highly inflective synthetic language and as such it prefers to realise functional heads using bound morphology. To look for instantiations of a free head in the D domain is therefore more difficult.

We can still mention the **selectional restrictions** imposed on the nominal head by the quantifiers. The example below shows that the matching is obligatory, and assuming that it is only a head which can select its complements, the unacceptability suggests that there is a selecting head in the structure.

- (5) a. * *jeden chlapci*
 * a/one Boys
 b. * *každí chlapci*
 * every boys

The same head like property is signalled by other quantifiers which are able to assign a Case to the following nominal complex. Assuming that Genitive **Case assignment** is also a property of a head, those structures must contain another head apart from the lexical Noun in (6a).⁷

- (6) a. *Přišlo/ *li mnoho/pět chlapců*
 Arrived_{SG/*PL} many/five boys_{GEN}
 b. *Přišli/ *lo všichni/čtyři chlapci*
 Arrived_{PL/*SG} all/four boys_{NOM}

The above examples mention quantifiers which are not typically located inside the DP projection. Since Giusti (1992) the quantifiers are usually analysed as heads separate from D. However, there are signals in Czech of head like elements inside the nominal complex which are not related to quantifiers. These signals are again best observed looking at the agreement morphology and are illustrated below. In (7) we can see an example of the **split agreement** pattern with genderless pronouns. Here it is *vy* (“you-PL”) used as a polite form of addressing a superordinate or unknown individual. Notice that the verb consists of two separate heads – Aux *jste* (“are_{2-PL}”) and V *přišel* (“arrived_{MASC-SG}”) and each of them shows distinct agreement: Aux agrees with the formally plural pronoun, while the participial V shows a semantically correct singular (including a gender not present on the pronoun at all).

- (7) *Vy (pane profesore) jste přišel včas*
 You_{2-PL} (Mr. professor_{MASC-SG}) Aux_{2-PL} arrive_{MASC-SG} on-time
 “You, professor, arrived on time.”

Trying to avoid any unmotivated enrichment or division of the feature content reflected in the agreement, I argue in Veselovská (2002) that the double agreement pattern in (7) means the presence of two *phi* feature sources/domains. Gender is one of the features in the domain related to the lexical category N (standardly zero after a pronoun) and this domain matches with a lexical V. The other domain belongs to the functional category D (i.e. the pronoun) which matches with the functional category I, represented by an Aux. The agreement within lexical domains is thus separated from the agreement on the level of functional domains. In other words, without a reference to an existing

⁷ For the discussion and analysis of the genitives and partitives following some Czech (or Slavic) quantifiers and numerals see Veselovská (2001), Čaha (2007) and many others cited in these studies. A diachronic process of grammaticalization (“Numeralization”) of numeric expressions can be found also here in Chapter III for Polish higher numerals. The author discusses in detail also the loss of explicit nominal inflection which is visible for Czech in Table (4) above.

functional domain (head) present in an extended projection of Czech Nouns, the above data would remain unexplained.

3.3 N-TO-D MOVEMENT (HEAD-TO-HEAD)

The role of the D head in the nominal projection has also been discussed from the perspective of possible head movements inside the nominal projection, as in e.g. Cinque (1994) and Longobardi (1994). The D head is an assumed landing site for (some of) the nominal elements – namely of those appearing in front of the adjective premodifiers. In Czech we can find at least two pronouns which are fronted. They are *někdo* (“somebody”) and *něco* (“something”) illustrated in (8c/d) below. Compare the ordering of these expressions with the standard position of the Czech head nouns *muž* (“man”) and *město* (“city”) in the (8a/b) examples.

- | | | | | | | | | |
|-----|----|--|-------------------------------------|----------------------------------|----|--|--|-------------------------------------|
| (8) | a. | <i>ten</i>
the _{NOM}
“the big man” | <i>velký</i>
tall _{NOM} | <i>muž</i>
man _{NOM} | b. | <i>to</i>
the _{NOM}
“the big city” | <i>velké</i>
big _{NOM} | <i>město</i>
city _{NOM} |
| | c. | <i>někdo_i</i>
someone _{NOM}
“somebody big” | <i>velký</i>
big _{NOM} | - <i>t_i</i> - | d. | <i>něco_i</i>
something _{NOM}
“something big” | <i>velk-é-ho</i>
big _{GEN} | - <i>t_i</i> - |

In Veselovská (2003) I analyse the genitive Case assigned by the inanimate *něco* (“something”) in (8d), which is another property which proves the latter’s head status. As long as the fronted pronominals need a head landing site at the left periphery of the nominal projection, the DP allows us to analyse these structures as examples of an N-to-D Movement.

In Chapters below IX and XI below movements of phrasal constituents are discussed and analysed as fronting motivated with a topic feature (Chapter IX) and a *wh*-/focus feature (Chapter XI). Both these analyses are based on the presence of a functional domain at the left periphery of the nominal complex.

4. COMPARING DISTRIBUTION - PRENOMINAL FIELD OF ENGLISH & CZECH

Looking at the ordering of elements in the field preceding the head Noun, with the exception some minor discrepancies, the Czech repertory is fully comparable to English. As in English, the position of adjective premodifiers (in both language apart from Romance patterns and idiosyncratic lexical entries) depends on their structural complexity obeying the **Left Branch Restriction**. The following English and Czech examples in (9a, b) show **light** APs (those bare or premodified) which precede the head Noun, and in (9c, d) **heavy** APs (those postmodified) which in both languages must standardly follow the head Noun.⁸

(9) Pre-/Post-nominal position for English and Czech APs

- | | | | |
|----|--|----|---|
| a. | (<i>velmi</i>) <i>vysoký</i> <i>muž</i>
(very) tall man | c. | * (<i>velmi</i>) <i>věrný</i> <i>své ženě</i> <i>muž</i>
* (very) faithful to his wife man |
| b. | ?? <i>muž</i> (<i>velmi</i>) <i>vysoký</i>
?? man (very) tall | d. | <i>muž</i> (<i>velmi</i>) <i>věrný</i> <i>své ženě</i>
man (very) faithful to his wife |

⁸ For the description of the Left Branch Restriction see Emonds (1976). A detailed discussion of the characteristics of the premodifying APs in contrast with those which appear after the head noun see in a more traditional framework also in Sproat and Shih (1991) who introduce the terms *light* versus *heavy* APs. For the space reasons I am not going to discuss here the examples with the complex AP divided into parts.

4.1 CZECH NATIONAL CORPUS

The Determiner field containing overt lexical entries is subject to specific word order constraints, too. For English even the traditional descriptive grammar manuals divide the prenominal attributes into Determiners which are peripheral and exhibit fixed ordering, and adjectival attributes, which follow the Determiners and show a less strict orderings. The Czech word order is said to be free and asking the speakers for preferences, one finds it very difficult to eliminate phonetic aspects related to the topic focus distinctions. Clearer data can, however, be obtained from corpora.

The following table (10) gives the numbers of chosen elements: demonstratives, possessives and light APs appearing pre-nominally and post-nominally.⁹ The data were taken from classical Czech literature of the 19th and 20th centuries, and they show that in spite of what the informants may believe, not more than 6.5% of the relevant entries were postnominal.¹⁰ With none of the tested lexical item, did either of the authors of 19th century (Neruda, Nĕmcová), who are known to use more archaic and marked styles, use the postnominal positions more frequent than the prenominal one. The amount of the marked orderings in (10) is fully comparable with English as given in e.g. Scott (2002) or with the Russian corpora data summarised in Pereltsvaig (2007).¹¹

(10) **Table:** ratio for pre-/post-N modification: DET / Poss / Adj

autor	pre-nominal			post-nominal		
	DET / Q	POSS	ADJ	DET / Q	POSS	ADJ
Čapek	53	20	200	0	4	21
Kvasnička	39	13	100	2	0	3
Michal	91	35	200	0	1	16
Motýl	30	4	100	0	0	1
Nĕmcová	88	40	200	5	4	22
Neruda	53	22	200	7	17	57
Olbracht	97	35	200	1	3	13
Pavlovská	67	49	200	0	0	5
Šabach	135	52	200	0	1	1
Viwegh	73	42	200	0	0	8
Votrubová	19	0	100	0	0	2
web item	12	8	100	0	0	2
Σ	757	320	2,000	15	30	151
				2%	9.5%	7.5%

pre-N : post-N	50:1	10:1	13:1	Σ 3,077:196 = 15:1 6.4% post-N
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Notice as well that in the table (10) the Czech demonstratives and quantifiers, which are the best candidates for the elements located in or around the functional Determiner projection, exhibit more strict ordering than possessives and adjectives, which are perhaps more sensitive to pragmatic phenomena and appear more likely in marked orders forced by topic-focus features.

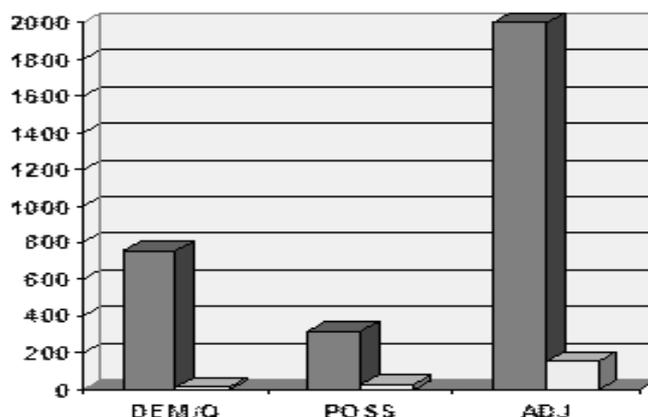
⁹ The examples were as follows: ADJ, e.g. *velká hora* (“big mountain”), *strašně velká hora* (“extremely big mountain”), DET: demonstratives, pronominals (without POSS), numerals, quantifiers, POSS: possessives, e.g. *můj/tvůj* (“my/your”), N-poss containing “/-ův/-in”, e.g. *Jeníkův/maminčin* (“John’s/mother’s”), post-nominal: does not include postmodified (heavy) APs, i.e. [_{AP} A + PP/VP/clause]

¹⁰ The names of the authors in the leftmost column in (10) refer to the books (and journals including a web article) which follow in the bibliography under the list of Corpora.

¹¹ Concentrating on adjectives, Scott (2002) claims a 10–11% tolerance for the marked orderings with English speakers. In Russian (including corpora) Pereltsvaig (2007) found a comparable 3–10% tolerance for word orders which do not follow the order predicted in the structure.

The summaries of the above results are repeated schematically in the following graph (11). The scheme compares the Pre-nominal (dark column) and Post-nominal (light column) positions of Czech Demonstratives, Possessives and light APs.

(11) Pre- vs. Post N modification in Czech NP/DP



5. FUNCTIONAL DOMAINS (DISTRIBUTION)

In the formal generative framework the distribution of individual lexical entries within the prenominal field of the NP/DP has been studied repeatedly in both English and many other languages. The distinctions between the ordering within the functional and lexical domains including the Slavic languages have been described already in Cardinaletti (1998) and Schoorlemmer (1998); the adjectival premodifiers are discussed in detail in Cinque (1994).

The following table (12) provides the results of a search comparing the ordering of demonstratives and adjectives in the Synchronic Representative Corpus (Syn2010). The corpus is a part of the Czech national corpus, and it has 121,667,413 positions. The first line gives the results for the combination of the most frequent Czech demonstrative *to* (“the/this” = Dem1) and adjective *vysoký* (“tall/high” = Adj1). The marked ordering with the AP preceding the demonstrative was attested in only 0.3%. The second line in (12) gives the results for all the Demonstratives (DEM) and all Adjectives (ADJ) based on the tagging within the corpus. The marked word order was attested in only 0.8% of the data.

(12) Czech National Corpus: Syn2010

type	number	lemmas		type	number	lemmas
Dem1 + Adj1	363 ¹²	<i>vysoký</i> + <i>to</i> + <i>N</i> (“tall + the”)	121:1 = 0.3%	Adj1 + Dem	1 ¹³	<i>to</i> + <i>vysoký</i> + <i>N</i> (“the + tall”)
DEM + ADJ	104,328 ¹⁴	Dem + Adj	122:1 = 8%	ADJ + DEM	795 ¹⁵	Adj + Dem

¹² Total findings: 456 (3.75 i.p.m.; with respect to (w.r.t.) the corpus) | Average Reduced Frequency (ARF): 277. Sorted out 363 relevant (from which 211 are in the superlative).

¹³ Total findings 3, from which 1 example is relevant.

¹⁴ Total findings: 112,909. From 500 random samples, there were 462 (92.4%) relevant. I.e. there were 104,328 relevant examples. There was not a single example of a combination *to/takové* + *celé* + *N* (“whole + the/this + N”) or *takový* + *další/mnohý* + *N* (“next + such/numerous + N”).

¹⁵ Total findings: 5,034. From 500 random samples, there were 384 (76.8%) relevant examples (from which there were 290 (75.5%) combinations *celé* + *to/takové* + *N* (“whole + Dem + N”) and 15 of *další/mnohý* + *takový* + *N* (“next/numerous + Dem + N”). Excluding those, only 79 examples were relevant, i.e. 15.8% from 5,034, which represents 795 examples (excluding the combinations mentioned above).

The numbers and ratios in (12) show that the Czech lexical entries, which can be related to the functional domain, precede the attributive adjectives in a rather strict ordering. The violation can be perceived as ungrammaticality, which makes the Czech word-order fully comparable to English.

5.1 THE “D(P)” / FUNCTIONAL DOMAIN: DISTRIBUTION OF ENTRIES

In the preceding section I demonstrated the sharp distinction between the ordering of the lexical entries belonging to the projection of a lexical Noun (mostly adjectives) and the entries belonging to the determiner’s projection. In the following paragraphs I am going to show the constraints on the ordering of elements within the determiner field.

5.2 QUANTIFIERS AND DEMONSTRATIVES

Already in his main syntactic study dealing with English data, Jackendoff (1977) worked with a 3-slot template of functional category in the field which today could be called Determiner projection. He states that some elements are obligatory and that the unique central position contains articles as a typical entry. He also provides data showing typical lexical entries for fixed positions preceding and following the article (pre-D and post-D positions) – demonstrating specific Q: Quantifiers and Num: Numerals. The brief summary of his data is below in (13).

- (13)..... a. *half / all the four / many boys* c. *a/the/some/my/Mary’s boy*
 b. *(*many) the (*all) boys* d. **the my/*a some boy*

Looking for similar 3-slot template in Czech, the first clear distinction is in the lack of a unique central position occupied in English by articles and its alternates. The following example shows a noun with a range of potential determiners including a numeral, none of which is more obligatory than a lexical adjective *podezřelý* (“suspicious”).

- (14)..... a. *Je tam (jeden) (takový) (nějaký) (jakýsi) (podezřelý) chlápek*
 is there (one) (this) (some) (any) (suspicious) guy
 “There is such a suspicious guy over there.”

On the other hand, looking at the order of quantifiers and numerals (so called pre- and post-determiners) with respect to the demonstratives, there is not much of a variety. Although the examples below seem to suggest a kind of freedom among quantifiers and demonstratives, the interpretation described below varies with respect to each ordering and the alternates plausibly have distinct structures. The unmarked option is (15a), in which the bold demonstrative and possessive appear in between the general quantifier *všichni* (“all”) and in front of the cardinal *čtyři* (“four”), which is, as for the order of the quantifiers, the unmarked word order in English, too.¹⁶

- (15) a. *všichni (ti vaši) čtyři chlapci*
 all (the/your) four boys
 “All the four boys of yours.”
 b. *všichni/čtyři (ti vaši) chlapci*
 c. *(ti vaši) všichni/čtyři chlapci*

¹⁶ The uniqueness of DET/POSS in English is not an issue in this example. For these data see next sections, where also the orderings in (15b/c) are going to be described in more detail.

The following table (16) provides the corpus numbers supporting the unmarked characteristics of the English-like order in Czech. Searching for the ordering of Demonstratives (Dem), Quantifiers (Q) and Numerals (Num), the numbers show that the ordering as in (15a) – type A on the left in (16) – is a clearly more frequent combination than its opposite – type B on the right. The percentage of the occurrences of the non-English-like orderings is minimal – 0.5% for the combination Dem + Num and 3.0% for the combination of Q + Dem.

(16) **Corpus: Syn2010**

type A	found	lemmas	ratio of found	type B	found	lemmas
Dem+Num	205 ¹⁷	<i>ti+čtyři</i> ("the + four") (+ N)	200:1 0.5%	Num+Dem	1	<i>čtyři+ti</i> ("four+the") (+N)
Q+Dem	3,775 ¹⁸	<i>všechno+to</i> ("all + the") (+ N)	31:1 3.0%	Dem+Q	120 ¹⁹	<i>to+všechno</i> ("the+all") (+N)

The corpus data thus support the claim about the fixed position of the closest relative to article in Czech in the central slot of the peripheral functional field, which also contains quantifiers and numerals.

5.3 PARTITIVE VERSUS NON-PARTITIVE READINGS

In the example (15b/c) I demonstrated acceptable Czech examples of the ordering in which Quantifiers and Numerals *precede* the Demonstrative and Possessive, mentioning the interpretative distinction between the unmarked order and these structures. Using the English translations, the following examples show that the distinction is in the quantifier scope.²⁰

When the Demonstrative precedes the Numeral the unit refers to one definite set consisting of a given number of individual items. In (17) below the definite set of examples has three or four members in both languages.

- (17) *u těch tři anebo čtyř příkladů*
in those three or four examples
“in those three or four examples” (the +DEF set = 3 or 4 items)

On the other hand, when the Numeral precedes the Demonstrative, the Numeral counts (takes scope) over a closed set of definite elements. The example (18) does not state the number of the units within the set which is marked by the Demonstrative as definite. It refers to only three or four items of a potentially larger set.

- (18) *u tři anebo čtyř těch příkladů*
in [three or four those examples]_{GEN}
“in three or four **of** those examples” (3 or 4 of the +DEF set)

¹⁷ Tokens: 286 (2.35 i.p.m.; w.r.t. the corpus) | ARF: 157. Sorted out 205 relevant findings.

¹⁸ Tokens: 3,852 examples. From 500 arbitrarily chosen there were 491 relevant examples, all of which were +N. I.e. 3,775 relevant findings, all of which were +N.

¹⁹ Tokens: 740 (6.08 i.p.m.; w.r.t. the corpus) | ARF: 417. Sorted out 556 relevant examples, from which 120 Dem + Q + N, 436 Dem + Q without N (from which 300 were *to vše(ch)no*) (“it + all”) without N.

²⁰ An interesting account of plurality, based on the formal semantic theory was applied on semantic properties of some Polish nominal complexes below in Chapter IV.

In the English gloss of (18) I marked the genitive Case assigned by the Czech preposition *u* (“in”) and which appears on all agreeing elements inside the Czech nominal complex, suggesting a unified, single domain. The English translation, however, contains a preposition *of* not present in (17) above. A preposition signals a separate domain of the quantifier, which as a kind of head selects *of* as a head of PP. This “partitive” structure for English is described in detail in Jackendoff (1977, 1981). I propose that given a specific interpretation, and in spite of the uniform morphology, the Czech structure is equally complex, and contains at least two phrases.

5.4 QUANTIFIERS AND DEMONSTRATIVES AND POSSESSIVES

As for the ordering between the optional but possibly multiple elements in Czech, which in English occupy the (obligatory and unique) Central Determiner slot, the example (19) demonstrates the fixed order between Demonstratives and Possessives.²¹ The table in (20) shows corpus data to support the claim made in (19).²²

- (19) a. *ti vaši chlapci* b. **vaši ti chlapci*
 the your boys * your the boys

(20) Dem + Poss Orderings: Corpus: Syn2010

type A	found	lemmas		type B	found	lemmas
Dem + Poss	1,433 ²³	<i>ten + váš (+N)</i> (“the +your (+N)”)	0%	Poss + Dem	0	<i>váš + ten (+N)</i> (“your + the (+N)”)
DEM + POSS	11,641 ²⁴	Dem + Poss (+N)	466:1 0.2%	POSS + DEM	25 ²⁵	Poss + Dem (+N)

The fact that there is no tolerance for the reordering between the functional categories at the left periphery of a complex noun phrase suggests the template like characteristics of the field, which is typical for a string of functional heads.

Moreover, looking at the relative order of general quantifiers (Q) and cardinals (Num), each of which can appear either in front or after the Dem/Poss, we can see that if both are present, the order is fixed: universal quantifiers *všichni* (“all/both”) must precede the cardinals.²⁶

- (21) a. **čtyři/tři všichni*
 *four/three all
- b. *všichni (ti/vaši) čtyři (?ti/vaši) chlapci*
 all (the/your) four (the/your) boys
- c. **čtyři (ti/vaši) všichni (ti/vaši) chlapci*
 four (the/your) all (the/your)

²¹ A comparative descriptive study of the form and interpretation of Czech and English possessives can be found below in Chapter VII. For more theoretical discussion see also Veselovská (2001). Some other Slavic (Russian) possessives and esp. their equivalents are discussed and analysed in terms of so-called Possessive Raising in e.g. Zimmerling (2013).

²² The first line provides results of the search for a specific Demonstrative (Dem) and Possessive (Poss) *ti vaši* (“those your”) combined with a Numeral, the second line counts all Demonstratives (DEM) and Possessives (POSS) as tagged in the corpus. The ratio is given for the examples found and the percentage counts the occurrences of the unpredicted order.

²³ Tokens: 1,433 i.p.m.: 11.78; w.r.t. the corpus | ARF: 603 |

²⁴ Tokens: 11,641 i.p.m.: 95.68; w.r.t. the corpus | ARF: 5,661 |

²⁵ Tokens: 39 i.p.m.: 0.32; w.r.t. the corpus | ARF: 18. 14 entries irrelevant.

²⁶ For universal Qs the entries were : *všichni/oba* (“all/both”), for Numerals *tři/čtyři* (“three/four”)

The example (21a) shows that the Num + Q order is ungrammatical in Czech. (21b/c) demonstrate that when Q + Num co-occur with Dem/Poss, they appear in front of the Dem/Poss, or on the sides of the Dem/Poss combination. The corpus data supporting the generality of examples in (21) are provided in the table in (22) – showing the results of the search for the combinations of quantifiers *všichni/oba* (“all/both”) and Demonstratives/Possessives *ti/vaši* (“those/your”) with generic Numerals.

(22) Q + Dem + Poss Orderings: Corpus: Syn2010

type A	found	lemmas		type B	found	lemmas
Q+NUM	3,162 ²⁷	<i>všechn/oba</i> +Num (“all/both+Num”)	1,581:1 0.06%	NUM+Q	2	Num+ <i>všechn/oba</i> (“Num+all/both”)
Q+Dem/ Poss+Num	21 ²⁸	<i>všechn+ten/váš</i> +Num (“all+the/your+Num”)	0%	Num+Dem/ /Poss+Q	0	Num+ <i>ten/váš</i> + <i>všechn</i> (“Num+the/your+all”)
Q+Num +Dem/Poss	2	<i>všechn+ Num + ten/váš</i> (“all+Num +the/your”)	0%	Num+Q +Dem/Poss	0	Num+ <i>všechn +ten/váš</i> (“Num+the/your+all”)

If Czech has a universal DP projection, which can be a sister to another functional projection of Q, we can expect a similar to English hierarchy within the field of premodifiers. In Veselovská (forthcoming) I show corpus data supporting the universal semantic hierarchy of Adjective premodifiers. The study searches for the data in Czech national corpus to demonstrate that the orderings inside Czech nominal complexes are as restricted as those in English (as in Scott, 2002) and Russian (as in Pereltsvaig, 2007) and the individual strings follow the same specific hierarchy. In the same time, the Czech data in this study fully confirm the striking distinction between the strict orderings of elements in the functional domain and the more relaxed orderings in the modifier domain.

5.5 ELEMENTS PRECEDING D

Looking more closely at the DP structure, the initial position of the Determiner field can be preceded intervened by several lexical entries, all of which rank among the vaguely defined group of quantifiers or Adjectives. Assuming the English *such* can be located in front of the Central Determiner (as in *Such a man is dangerous*), the following provides some of the most common ones in English.

(23) *many/no/some/few such friends/events*

While looking to the corpora for the data presented in the tables above, the most frequent Czech items appearing in front of the demonstrative, the repertory seems to be similar to English.

- (24) a. *celou tu dobu* whole the period “the whole period”
 b. *další taková událost* next such event “a next event like that”
 c. *mnohý takový právník* manyfold such lawyer “many a lawyer like that”
 d. *jiné takové indexy* other such indices “other indices like that”
 e. *žádná taková škola* no such school “no school like that”
 f. *samotný tento vývoj* selfs this development “this development itself”

²⁷ Lemma *všechn* (inclusive “all”) and lemma *oba* (“both”). Tokens: 3,162 i.p.m.: 25.99 | ARF: 1,758.

²⁸ Tokens: 21 i.p.m.: 0.17; w.r.t. the corpus | ARF: 10

If the category D is a functional head, it plausibly selects a restricted range of elements for its specifiers. Given that the repertory of specifiers is similar in English and Czech, I conclude that the same functional head should be present in the two languages.

6. SUMMARY

In this study I have listed the reasons why the universal DP hypothesis can be a suitable analysis of the Czech nominal projection, as well as appropriate for English. I have provided arguments in the areas of:

- (a) **Semantics**, mentioning the D/N-semantics, interpretability of semantic roles, evidence based on parallelism between VP/IP and NP/DP and a structural subject position for the Czech Possessive Nouns.
- (b) **Morphology**, providing examples of Czech lexical entries which can be related to the functional domain of N (the D-field) – and which apart of a specific morphology – show also some head-like properties with respect to e.g. case assignment and agreement patterns.
- (c) **Syntactic distribution** – demonstrating the distributional properties of the lexical entries plausibly related to the Determiner field, I have compared the data from English with Czech showing similarities which signal the presence of a similar functional domain above the NP.

Although Czech speakers often believe in a free word order with no limits in their mother tongue I have demonstrated several results of corpora searches which illustrate relatively strict rules attested in the ordering inside complex noun phrases. These rules, together with all the other arguments listed above, argue in favour of a universal DP analysis, as it predicts the similarities between languages which would otherwise remain unexplained.

It remains to be seriously addressed why some of the marked orderings sound acceptable to the Czech native speakers, although they are not in fact attested in corpora. Some more formalised theory of pragmatic factors seems to be needed, which would have a potential to predict the distinctions between languages and which would allow the analysis of language structures to be based on more reliable evaluations of the data.

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