

The DP Hypothesis Has No Defense: N-to-D Movement, Hybrid Agreement, and Conventionalized Expressions

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Abstract

The DP Hypothesis has recently come under intense criticism (Bruening 2009, Bruening et al. 2018). In the face of this criticism, several responses have been offered. This paper addresses three responses and shows that they are without force. First, N-to-D movement is not necessary in Shona, as Carstens (2017) claims. Second, patterns of hybrid agreement in Bosnian-Croatian-Serbian do not require the DP Hypothesis, as Salzmann (2018) claims. Third, patterns of conventionalized expressions show that there is a close syntactic relation, possibly selection, between a selecting head and N, contra Salzmann (2018). The patterns of conventionalized expressions are simply incompatible with the DP Hypothesis and require that the head of the nominal is N, not any functional head.

1 Introduction

The DP Hypothesis, which says that the head of the nominal is not N but a functional category D (or a sequence of functional categories), has come under recent scrutiny and criticism. Bruening (2009), Bruening et al. (2018) argue that asymmetries between nominals and other categories show that the head of the nominal must be N, not D. They further show that every analysis that has been stated within the DP Hypothesis can easily be stated within an NP structure as well. The one exception to this is N-to-D movement, something that is impossible if D is not a head taking NP as its complement. In support of the NP structure, most recent research has actually concluded that N-to-D movement does not exist (Alexiadou 2001, Dimitrova-Vulchanova 2003, Shlonsky 2004, Cinque 2005, 2010, Hankamer & Mikkelsen 2005, Willis 2006, Georgi & Müller 2010, Lipták & Saab 2014).

In the face of this criticism, several responses have been offered. First, Carstens (2017) argues that N-to-D movement is needed for Shona. Second, Salzmann (2018) argues that patterns of agreement in Bosnian-Croatian-Serbian (BCS) require a DP analysis. Third, Salzmann (2018) also contends that the asymmetries in selection detailed in Bruening (2009), Bruening et al. (2018) are not telling because there is no evidence for a direct relation between a selecting V and a head N. In this paper I address these three responses. I show first that Shona does not require N-to-D movement; second, that patterns of agreement in BCS do not require a DP analysis; and third, that

conventionalized expressions like idioms reveal that there is indeed a close relationship between V and a selected N, perhaps the *l-selection* relation of Pesetsky (1995). Conventionalized expressions show that the head of the nominal must be N and could not be D.

2 Shona N-to-D

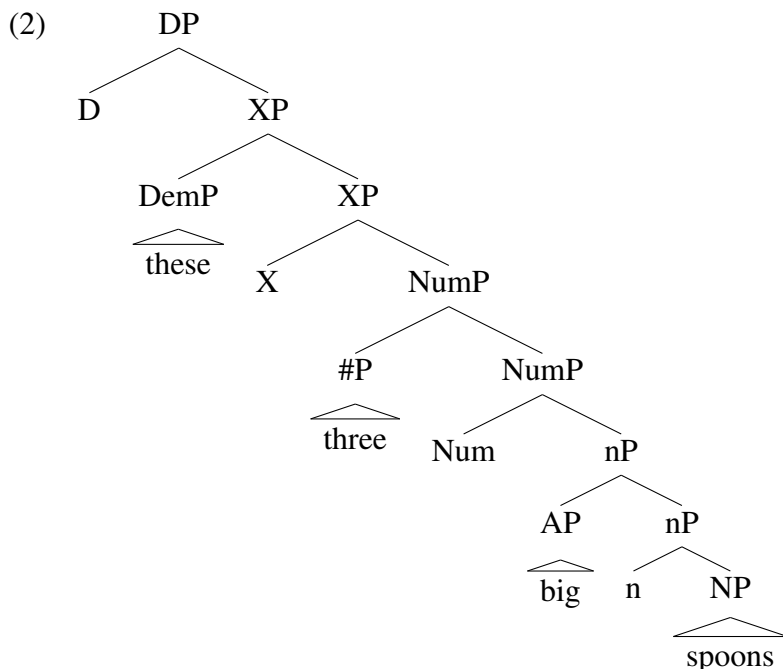
I begin with the argument for N-to-D movement. If it could be shown that N-to-D movement is necessary, then this would constitute an important argument for the DP Hypothesis. N-to-D movement could not exist if the head of the nominal is N.

Carstens (2017) argues that N-to-D movement is necessary in the analysis of Shona. In Shona nominals, only Dem(onstrative) can precede the N, after N order is free (but Dem must be peripheral):

(1) *Acceptable word orders within Shona NPs* (Carstens 2017: (24))

- a. zvipunu zvikuru zvitatu izvo
spoons big 3 these
- b. izvo zvipunu zvikuru zvitatu
these spoons big 3
- c. zvipunu izvo zvikuru zvitatu
spoons these big 3
- d. zvipunu zvitatu zvikuru izvo
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- e. izvo zvipunu zvitatu zvikuru
these spoons 3 big
- f. zvipunu izvo zvitatu zvikuru
spoons these 3 big

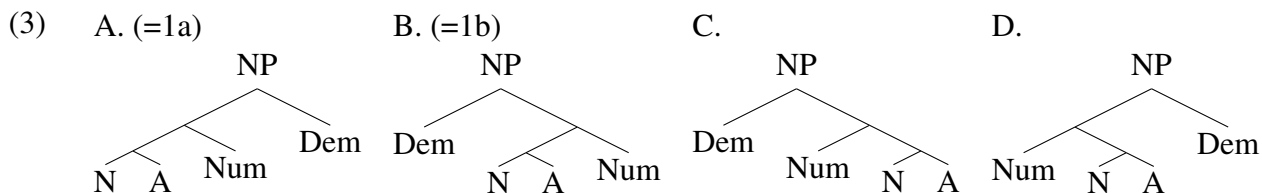
Carstens' analysis is shown below. There is a universal order of DP, XP, NumP, nP, and NP. The actual elements DemP, #P, and AP are adjoined to these projections, as follows:



DemP, #P, and AP can also be adjoined on the right rather than the left. Additionally, DemP can appear in Spec-DP instead of adjoined to XP. N moves to D obligatorily. These options combined with obligatory N-to-D movement derive all and only the licit orders, as the reader can verify.

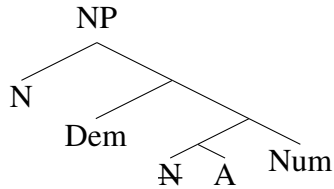
It is of course nearly impossible to show that N-to-D movement is necessary simply on the basis of word order. It is always possible to devise an alternative analysis of the word order facts that does without N-to-D movement. I will make this point by giving two alternative analyses, both of which derive the Shona word orders.

The first is to faithfully follow the system that Abels & Neeleman (2012) propose for deriving the attested orders of Dem, Num, A, and N cross-linguistically. Crucially, they do not adopt the DP Hypothesis. They propose that there is a universal hierarchy Dem>Num>A within the NP, but any or all of these elements can merge either on the left or on the right of the head N (which is sister to A). Additionally, some constituent within NP can move, but only leftward, and in addition, that constituent must include the head N. Within this system we can derive all and only the Shona orders as follows. First, A must merge on the right, but Dem and Num can be either on the right or the left:



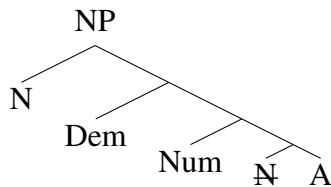
Second, if Num is on the left, as in (3C) and (3D), then there is a constraint requiring that something move. So (3C) and (3D) are not possible orders. N can always move by itself to any height, but if A moves with N then they cannot cross Dem. Movement of N or N+A in (3A) does not change order. Neither does N+A moving from (3B), since N+A cannot cross Dem and movement must be leftward. The only change that can be derived from (3B) is moving N by itself above Dem:

(4) (3B) + N moves (=1c)

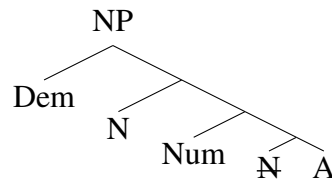


There are multiple movement options from (3C). Moving N+A above Num creates the same order as (3B). N can move by itself either above Dem or below it:

(5) (3C) + N moves (=1f)

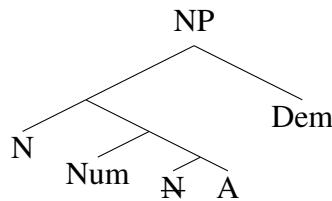
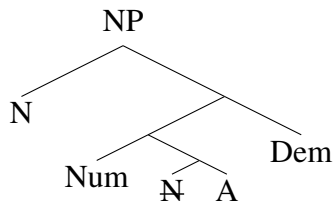


(3C) + N moves (=1e)



There are also multiple movement operations from (3D), but only one new order can be derived. Moving N+A above Num gives the same order as (3A). Moving N above Dem yields the order N Num A Dem (1d), but so does moving N above Num instead:

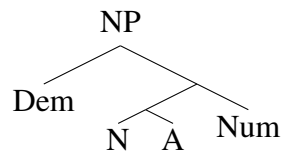
(6) (3D) + N moves (=1d)



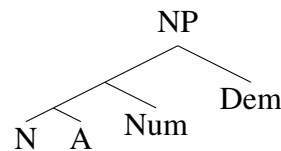
This first alternative therefore derives all and only the attested orders in Shona.

The second alternative does not follow Abels & Neeleman (2012) in every way, but departs from them in saying that movement can only be rightward, not leftward, and never includes N. First, following Abels & Neeleman (2012), there is a universal hierarchy Dem>Num>A. Second, Shona allows two base linear orders, both respecting this hierarchy:

(7) A. (=1b)



B. (=1a)



This already gives us the orders (1a) and (1b). Third, A and/or Num can move to the right. There is a constraint however, stating that if they cross Dem they both must move. This means that if Num moves, then A must as well. This derives all and only the attested orders:

(8)

<p>(7A) + A moves (=1e)</p>	<p>(7B) + A moves (=1d)</p>
<p>(7A) + cross (=1b)</p>	<p>(7A) + nest (=1e)</p>
<p>(7B) + cross (=1c)</p>	<p>(7B) + nest (=1f)</p>

As these two alternative analyses show, it is always possible to construct alternative analyses of word order. There is really an almost infinite space of possibilities, depending on one's starting assumptions. It is therefore not logically possible for Carstens to claim that Shona word order *requires* N-to-D movement; it certainly does not. The question will always be, what is the simplest, best-motivated analysis? Let us compare the three alternatives here.

Carstens' analysis has at least four relevant stipulations: (1) There is a universal hierarchy of functional heads to which dependents of N adjoin; (2) Dem can go in two locations; (3) dependents of N can adjoin on the right or the left; (4) N moves to D obligatorily in Shona. The universal hierarchy also includes much more structure than the other two analyses, including null heads that seem to do nothing other than to provide locations for the actual elements to adjoin. However, the analysis is couched within a framework of assumptions that posits such structure as a cross-linguistic universal, so one might view that as motivating it (but note that XP has no content and just seems to be a placeholder).

The alternative analysis that is faithful to Abels & Neeleman (2012) has 6 stipulations: (1) there is a universal hierarchy Dem>Num>A; (2) these elements can merge on the left or the right, except (3) A can only merge on the right in Shona; (4) movement must include N and must be leftward; (5) If N moves with A they cannot cross Dem; and (6) if Num merges on the left then movement must take place. This appears to be more stipulations than Carstens' analysis, but this is misleading, because stipulations (1), (2), and (4) are not particular to Shona but are part of a framework of assumptions that derives the attested cross-linguistic patterns. Carstens' framework of assumptions does not do that.

The second alternative proposed here has only four stipulations: (1) there is a universal hierarchy Dem>Num>A; (2) Num and A can only merge on the right in Shona; (3) Num and A

can move but only to the right; and (4) rightward movement must move both Num and A if the movement crosses Dem. It is also possible to embed stipulations (1) and (3) in an account of the cross-linguistic patterns, putting this analysis on a par with Abels & Neeleman (2012) in that respect (see Bruening 2018). It therefore seems to be at least as simple and well-motivated as Carstens’ analysis, and it is possibly simpler, since it does without all of the null structure that Carstens has.

It is of course difficult if not impossible to decide which analysis is better simply by counting the number of stipulations and making a judgment about simplicity and cross-linguistic applicability. The point of this exercise is to show that there are viable alternatives to Carstens’ N-to-D analysis of Shona word order that do not assume the DP Hypothesis and do not have N-to-D movement. The two analyses that I have proposed are both couched within approaches to cross-linguistic patterns of word order and so are not entirely ad hoc. Both they and Carstens’ N-to-D analysis include some stipulations particular to Shona, but since languages vary in their word order, this is unavoidable. Stipulating that N-to-D movement takes place in Shona is not more explanatory than the stipulations of the two alternatives. The overall point is that N-to-D movement is not necessary in Shona, as Carstens claims.

Carstens also claims that N-to-D movement is necessary to account for a putative cross-linguistic generalization that she advances. This is that only languages with N-initial NPs have clause-level agreement in gender (like Bantu and Semitic languages). Her explanation for this putative generalization is that gender is a property of the N, not the D; the only way to make gender visible outside of DP is for the N to raise to D and amalgamate with it. Therefore we need N-to-D to account for the cross-linguistic generalization. However, it can easily be shown that there is no such generalization. BCS, next, clearly has clause-level agreement in gender (see 9–10), but Ns follow adjectives in BCS, meaning they have not raised to D. Other languages also falsify the generalization: Tsez subjects and verbs agree in noun class (like Bantu), but all modifiers precede N (Comrie et al. 1998).

To summarize this section, there is no convincing case for N-to-D movement. It is not necessary for Shona, and there is no cross-linguistic generalization regarding gender that it is needed to explain. The vast majority of recent evidence indicates that N-to-D movement does not exist (see references above). This is consistent with the head of the nominal being N, not D.

3 BCS Hybrid Noun Agreement

In BCS, certain nouns can have distinct formal gender and semantic gender. Agreement can target either. However, there is a constraint: Once agreement targets semantic gender, it cannot switch back to formal gender for agreement relations that are structurally higher. For instance, the noun *vladi-*, ‘bishop’, is formally feminine but typically refers to male individuals. If an adjective in the NP agrees in formal gender (F), then the predicate can agree in either formal (F) or semantic (M) gender. However, if the adjective agrees in semantic gender (M), then the predicate must also (the “%” indicates that not all speakers permit agreement mismatches):

(9) (Puškar 2017: 6, (6))

- a. Star-e vladik-e su se posvađal-e/i.
old-F.PI bishop-PI are Refl argue.Prt-F.PI/M.PI

‘Old bishops had an argument.’

- b. % Star-i vladik-e su se posvađal-i/*e.
old-M.PI bishop-PI are Refl argue.Prt-M.PI/F.PI
‘Old bishops had an argument.’

Salzmann (2018) argues that this constraint follows from the DP Hypothesis and therefore constitutes an argument in its favor. Analyzing the example in (10), Salzmann argues that the demonstrative is D; as a head it can block agreement relations with other heads that it c-commands (the N). In the NP Hypothesis, this could not be stated. Agreement from outside NP would always have to target the maximal projection NP, and, on the assumption that a head and its maximal projection always have the same features, there would be no way to permit NP-internal and NP-external agreement to diverge, much less account for the constraint that holds when they do.

- (10) Ovi star-e vladike su me juče posetil-i/*e.
these.M.PI old-F.PI bishop-PI are me yesterday visited-M.PI/*F.PI
‘These old bishops visited me yesterday.’

The analysis that Salzmann proposes is slightly more complicated. It includes the hypothesis that agreement for semantic gender is agreement in more features than agreement for formal gender (because semantic agreement includes the feature [Human]). Agreement for more features can look past things with fewer features, but not vice versa. So in (9a), a predicate seeking semantic features can look past an A with only formal features to the head N which has both, but in (9b) and (10), a predicate seeking formal features cannot look past an A or a D that has semantic features (only the head N has both).

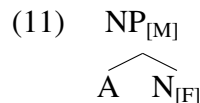
One thing to note about this analysis is that it requires A to be a head that c-commands NP, just like D, to account for the blocking effect of A in (9). This is an analysis that has largely been discredited (see Hankamer & Mikkelsen 2005: 95–96 and references there).

A bigger problem for Salzmann’s argument is that numerous successful analyses of hybrid agreement have been proposed, none of which actually require the DP Hypothesis. These include Landau (2016), Matushansky (2013), Pesetsky (2013). All of these authors do adopt the DP Hypothesis, but it is a straightforward matter to translate their analyses into a theory where N is the head of the nominal. These theories all have in common the idea that a feature that is not present on the head N can be introduced into the structure in a higher position; once it is introduced, everything structurally higher has to agree with that feature and cannot instead agree with the feature on N. I will present a modification to the version of this account by Pesetsky (2013), as it is the simplest.

In this analysis, an N like *vladik*-, ‘bishop’, comes with a formal [F] feature. However, because the NP headed by this noun can refer to male human individuals, a semantically interpretable [M] feature can be introduced at any point within the NP. This feature, being semantically interpretable, overrides the uninterpretable [F] feature. Any agreeing element that is merged below the point of introduction of the [M] feature agrees with the inherent [F] feature of the head noun; anything merged above that point instead agrees with [M], since at that point it overrode the [F] feature.

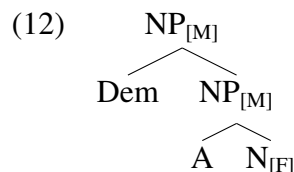
Take the example in (9a). When all agreement is [F], the feature [M] was never introduced at all. All agreeing elements then have no choice but to agree with the feature [F]. When the A agrees

with [F], but the predicate agrees with [M], the [M] feature is introduced at the topmost NP node:¹



Agreement is limited to c-command (or sisterhood, in a unification-based analysis of agreement as in the version by Matushansky 2013). The only gender feature that A c-commands is [F], so it agrees in that feature. The predicate then c-commands the NP, which instead has the feature [M], so it agrees in [M]. In (9b), since the A agrees with the feature [M], that feature must have been introduced at the head N instead, and must have overridden the [F] feature at that point. The only feature then visible to the predicate is [M].

As for mixed agreement within the NP, as in (10), the [M] feature can be introduced above the A but below the Dem:



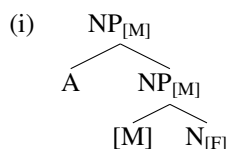
A will agree with [F], since that is what it c-commands, while Dem and the predicate can only agree with [M].

This analysis therefore captures the facts of hybrid agreement in BCS (and other languages, like Russian and Hebrew, where the pattern is the same) without the DP Hypothesis. The analysis requires no particular assumptions about the structure of the NP. There is no need for the formal intricacies of the analyses in Salzmann (2018) and Puškar (2017).² More generally, the DP Hypothesis is not necessary to account for the facts.

4 Conventionalized Expressions

Bruening (2009) showed that verbs select functional heads like C when they select clauses, but they never select functional heads like D when they select nominals. Bruening et al. (2018) extended this observation to other functional heads in nominals like numerals and classifiers. Both papers

¹An alternative is to follow Pesetsky (2013) and merge the feature with a projection of N as its sister, overriding the percolation of the feature of its sister to their mother:



This is equivalent, as far as I can see.

²One fact that this analysis does not account for is the difference between singular and plural. In BCS, hybrid nouns only show the possibility of either formal or semantic agreement in the plural. In the singular, they always agree as [M]. The simplest thing to say is that these nouns are both formally and semantically [M] in the singular. This is consistent with other facts in the language, where the formal gender of a noun can vary from the singular to the plural (Wechsler & Zlatić 2000).

conclude from this that the DP Hypothesis could not be correct, since it makes incorrect predictions for selection of nominals. In response, Salzmann (2018) argues that this discrepancy in selection is irrelevant, as there is no evidence that verbs ever select for formal properties of nouns.

I will address this response by pointing out the relevance of conventionalized expressions like the idioms in (13a) and the collocations in (13b) (idioms and collocations differ essentially in whether they are interpreted literally or not).

- (13) a. kick the bucket, bite the big one (both meaning ‘die’)
- b. keep a promise, pay attention

First, conventionalized expressions have been shown to require a close relationship between the syntactic items that comprise them, like constituency, dependency (O’Grady 1998), or selection (Bruening 2010). Bruening (2010), Bruening et al. (2018) suggest that the relevant relation might be the *l-selection* of Pesetsky (1995), which is selection for particular lexical items. Bruening (2019) surveys the syntactic relations that can hold between the items in such expressions and shows that they are all combinations of extremely local relations. For instance, there are predicate-argument relations like the following:

- (14) Arguments of V
 - a. V NP: answer the door, back the wrong horse
 - b. V NP P X: break the news to X, beat the bushes for X
 - c. V X NP: give X permission, do X a favor, cut X some slack
 - d. V NP NP: give it a rest, give the devil his due
 - e. V NP PP: Y bring a tear to X’s eye, build castles in the air
 - f. V X PP: bring X to justice, feed X to the lions
 - g. V (NP/X) Infinitive: lead X to believe Y, let sleeping dogs lie
 - h. V (NP) CP: tell me it isn’t/ain’t so, X teach X’s grandmother to suck eggs
- (15) Arguments of P and Adj
 - a. P NP: against the law, behind the eight ball
 - b. Adj NP/PP: worth a fortune, loaded for bear

There are also local modification relations like the following:

- (16) Modification
 - a. Adjective-Noun: active ingredient, cold feet
 - b. N PP: call of duty, elephant in the room
 - c. Possessor N: beginner’s luck, Davy Jones’s locker
 - d. N Relative Clause: the least X can do, a bitter pill to swallow

For the complete list of syntactic relations, see Bruening (2019).

Importantly, conventionalized expressions are always continuous, meaning that longer ones consist of a sequence of local relations. There are open slots, but they do not introduce discontinuities. Attested open slots are either left branches, like possessors, subjects, and objects, or they are the lowest complement:

- (17) Left Branch—Possessor:
 - a. X's old man
 - b. break X's heart
- (18) Left Branch—Subject:
 - a. as best X can
 - b. the last thing X want
 - c. the least X can do
 - d. X looks like X has seen a ghost
- (19) Left Branch—Object:
 - a. call X names, give X the benefit of the doubt
 - b. bring X to justice, drag X over the coals, set X on fire
 - c. give X to understand Y
 - d. tell X where to get off
- (20) Lowest Complement:
 - a. well aware of/that X
 - b. barely able to X
 - c. God's gift to X
 - d. have a bone to pick with X
 - e. have no idea that X
 - f. have a hard time X-ing
 - g. X cut X's teeth Y-ing
 - h. has had enough of X, had better X, might as well X

These open slots do not introduce discontinuities. In the possessor case, the local relation is between two items, like an A and an N that it modifies, or a V and its NP object; the possessor being open does not disrupt either local relation. In the subject case, for instance *the last thing X want*, the local relation between the N *thing* and the relative clause that modifies it is not disrupted. Within the relative clause, there is presumably a null C that combines with a TP which combines with a VP. The subject being open does not disrupt any of these local combinations. The same holds for a medial object: *names* combines with *call* as its argument in (19a), for instance. The lowest complement also does not introduce a discontinuity, obviously, as it is the last element in a chain of local relations. (Material is also open at the *top* of many if not most of these expressions.)

Importantly, discontinuities are not attested where some head in the middle of a sequence of heads is an open slot. Since functional elements are what is relevant to the DP Hypothesis, I will show this for some functional elements. First, what is attested and indeed common is a fixed verb selecting a fixed preposition which then selects an open N as lowest complement (most of these have a fixed NP argument of V in addition to a fixed P):

- (21) Common: Fixed.V—Fixed.P—Open.N
 - a. light a fire under X
 - b. carry a torch for X

- c. cast a pall on X
- d. keep in touch with X
- e. run the risk of X

(22) Does not exist: Fixed.V—Open.P—Fixed.N

What does not exist is a sequence of a fixed verb with an open slot for a preposition and then a fixed NP. Looking beyond PPs, what we commonly find is a sequence of fixed functional heads (possibly also including fixed lexical heads) with an open lexical element as the lowest complement. For instance, all of the following expressions include functional elements like negation, aspect, and modals, but have an open slot for something with a lexical head as the lowest complement:

- (23)
- a. Negation: NEG breathe a word about X_{NP} , NEG bet on X_{NP}
 - b. Aspect: has had enough of X_{NP} , had better X_{VP}
 - c. Modal: might want to X_{VP} , would do well to X_{VP} , would rather X_{VP} , can't afford $X_{NP/CP[-fin]}$, can't help X_{VP} -ing, can't stand $X_{NP/VP}$, might as well X_{VP}

The lowest lexical XP can be open, while the functional stuff above it is fixed. What we do not find is expressions with fixed lexical material at the bottom, fixed material at the top (lexical or functional), but with open functional material in the middle:

(24) Does not exist: Fixed.Lexical/Functional—Open.Functional—Fixed.Lexical

To make this point more clearly, let me point out some conventionalized expressions that include a verb plus an embedded clause. Here are some such expressions:

- (25)
- a. know what the score is (*or* know the score)
 - b. NEG X know where X's head is (at)
 - c. X know which side X's bread is buttered on
 - d. know which way the wind blows
- (26)
- a. X teach X's grandmother to suck eggs
 - b. wait for the other shoe to drop
- (27)
- a. tell X where to get off

In all of these cases, the functional elements in the embedded clause are fixed. In particular, C is completely fixed: as a finite interrogative in (25), as a non-finite declarative in (26), and as a non-finite interrogative in (27).

None of these examples have an open lowest complement, but when we look at expressions that are entire clauses (but not selected by a V), what we find is that the functional material is fixed while the lowest complement (NP, CP, or VP as in 23 above) is open:

- (28) Questions
- a. What's up with X_{NP} ?
 - b. Whatever happened to X_{NP} ?
 - c. Where would we be without X_{NP} ?
 - d. Who would have thought X_{CP} ?

- e. What/something is eating X_{NP}
- (29) Embedded or Main Declarative CP
- a. the fact remains X_{CP}
 - b. to say nothing of X_{NP}

In all of these cases, the functional material is a fixed part of the expression and does not vary (the only variation that seems possible is using past instead of present tense).

Putting these together, what we see is that the following pattern is common:

- (30) (Fixed.Lexical) [Fixed.Functional [Open.Lexical]]
- a. Fixed.Verb [Fixed.P [Open.N]]
 - b. (Fixed.Verb) [Fixed.C ... [Open.N/C/V]]

The pattern that does not exist is the following:

- (31) * Fixed.Lexical [Open.Functional [Fixed.Lexical]]
- a. * Fixed.Verb [Open.P [Fixed.N]]
 - b. * Fixed.Verb [Open.C ... [Fixed.N/C/V]]

Now consider nominals. If the DP Hypothesis is correct, a verb taking a nominal as its complement is exactly like a verb taking a CP as its complement. V should select D and some sequence of functional heads eventually leading down to a lexical N, exactly the way a V selects C and some sequence of functional heads leading down to a VP (or lower). Given what we have just seen, what we should expect to find, then, is a great many expressions consisting of a fixed V, a fixed D, and an open N. We should never find a fixed V and a fixed N but open D. However, Bruening et al. (2018) show that the facts are just the opposite. In the vast majority of verb-nominal expressions, only the V and the N are fixed, while the D can vary. This is true even when the D has a canonical form. In such cases it can actually freely occur in a different form. The following examples illustrate some verb-object expressions that canonically occur with the definite determiner; in these attested examples, the determiner takes some other form instead:

- (32)
- a. jump the gun: “before you all jump another gun”
 - b. bark up the wrong tree: “Have you ever barked up a wrong tree?”; “you’re barking up another wrong tree”
 - c. bring home the bacon: “I still need to bring home some bacon occasionally.”
 - d. sell X down the river: “you just sold yourself down another river”
 - e. pull the wool over X’s eyes: “Tol’ ye to go home to the ole man, an’ pull some more wool over his eyes!”
 - f. toe the line: “Pravda began to toe a line approved by Stalin and Kamenev”

As Bruening et al. (2018) discuss, the effect of varying the determiner is typically to make the event unique or not. Consider the two expressions *bite the bullet* (‘decide to do something difficult or unpleasant’) and *dodge a bullet* (‘manage to avoid a difficult situation’), which in their canonical forms have the same N but distinct determiners. In *bite the bullet*, there is assumed to be a unique, identifiable unpleasant situation, whereas in *dodge a bullet* there are assumed to be potentially

many. These assumptions can be changed by using different determiners: “we’ll have to bite one of these bullets,” “we had to bite yet another bullet”; in the other direction, “we dodged that bullet,” “if we can dodge this bullet,” “I dodged the real bullet” (amply attested on-line). What this indicates is that the choice of determiner is open, not selected; what determiner it is is determined by the typical rules for English determiner use, not by selection.

As Bruening et al. (2018) show, then, the pattern with verb-object expressions is the following:

- (33) a. Common: Fixed.V—Open.D—Fixed.N
 b. * Does not exist: Fixed.V—Fixed.D—Open.N

They show that this is true in classifier languages, too, substituting (demonstrative-)numeral-classifier sequences for D.

This makes nominals exactly the opposite of what we expect from clauses and PPs. There we saw that open functional material in the middle of a sequence of fixed items was unattested, while open lexical material below fixed functional material was common. Analyzed according to the DP Hypothesis, nominals are outliers and the exact opposite of everything else. The DP Hypothesis requires nominals to exhibit an otherwise unattested discontinuity. In particular, verb-object expressions have to be a sequence $V—D—N$ but where only V and N are part of expression while D is open. We do not see this elsewhere; in particular, conventionalized expressions have to be continuous. Open slots are left branches, either arguments or modifiers, they never disrupt local relations between heads. On the DP Hypothesis, they would have to.

In contrast, if the head of the nominal is N, then nominals are behaving exactly like every other category: a verb selects an NP headed by N, while left branches within the N (the determiners, numerals and classifiers) can be open. Verb-object expressions are continuous on this view, with no discontinuity, exactly like we see everywhere else.

Let me make one final observation. This is that when a VP or CP is an open position as the lowest complement, its form is strictly determined by the selecting element. Below are some examples, with the required form indicated:

- (34) VP
 a. can’t help X_{VP-ing}
 b. X cut X’s teeth Y_{VP-ing}
 c. had better $X_{VP-bare}$
 d. might want to $X_{VP-bare}$
- (35) CP
 a. can’t afford $X_{NP/CP[-fin,decl]}$ (e.g., can’t afford [to see movies])
 b. Who would have thought $X_{CP[fin,decl]}$?
 c. the fact remains $X_{CP[fin,decl]}$

If the DP Hypothesis were correct, we would then expect that when a nominal is the open lowest complement, the form of D would also be strictly determined. It is not. N heads do not really have different forms to select, and so the attested state of affairs is what we expect if N is the head.³ This is what is behind Salzmann’s (2018) observation: Ns are not comparable to Cs and

³Note that one could say that different case forms are the different forms of N that are selected, comparable to bare versus *-ing* with VPs and finite versus non-finite with CPs. If that is correct, then we do see strict selection for different forms of N.

Vs in having different forms that can be selected. Ds do, so if the DP Hypothesis were correct, we should see them being selected. The fact that we do not indicates that N, which lacks different forms, is actually the head and is what is selected by selecting heads.

To summarize this section, one of the main conceptual motivations for the DP Hypothesis was a claimed parallel between nominals and clauses. With regard to conventionalized expressions, the two are not parallel at all. (They are not parallel in any respect, as Bruening 2009 and Bruening et al. 2018 show.) Importantly for Salzmann's (2018) argument, V and N do enter into a close syntactic dependency. This becomes clear looking at conventionalized expressions, where all such expressions consist of continuous sequences of close syntactic relations. It is possible but not crucial that the close syntactic relation involved might be *l-selection*, or selection for a particular lexical item. Whatever we call this close syntactic relation, conventionalized expressions show us that V and C enter into one, as do V and P, so V does in fact enter into such relations with functional material. However, when we look at nominals, it is clear that the close syntactic relation is between V and N, not between V and D. This is incompatible with the DP Hypothesis. The only possible conclusion is that the nominal complement of V is headed by the N itself.

5 Conclusion

In this paper, I have shown that three recent defenses of the DP Hypothesis fail. There is no argument for N-to-D movement, and in fact most evidence indicates that it does not exist. Hybrid noun agreement in BCS (and other languages) does not require the DP Hypothesis, and in fact multiple analyses of the agreement patterns have been proposed that work well in a structure where the head of the nominal is N, not D. Finally, conventionalized expressions show that verbs do in fact enter into close syntactic relationships with Ns, but never do with Ds. The first two points simply defeat arguments in favor of the need for the DP Hypothesis, but the third goes farther and indicates that the DP Hypothesis is not just unnecessary, but untenable. The head of the nominal really has to be N, not D.

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