# Selection, Idioms, and the Structure of Nominal Phrases with and without Classifiers
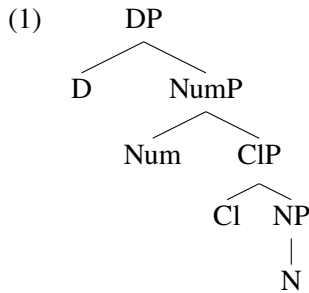
**Abstract**

It is common to hypothesize that in classifier and non-classifier languages alike the various functional heads (determiner/demonstrative, numeral, classifier) each head their own projection, so that the maximal projection of the nominal phrase is not NP but something like DP. We evaluate the predictions this makes regarding selection and verb-object idioms in English, a non-classifier language, and in Korean and Vietnamese, two classifier languages. These predictions are not upheld, and nominals act very differently from clauses and PPs, which are headed by functional heads. Selection and idioms show that the maximal projection of the nominal must be a projection of the lexical N itself, not a functional element. We develop such an analysis of nominals, and show how it accounts for data that was taken to motivate the DP Hypothesis.

## 1 Introduction

The DP Hypothesis, which claims that the head of the nominal projection is not N, but a functional projection D, appears to have gained such widespread acceptance in the field that articles and textbooks now regularly use the label "DP" to refer to nominal phrases, rather than "NP." The basic claim of this theory—that lexical Ns are dominated by a sequence of functional projections—has also been adopted in studies of classifier languages. One of the most common approaches to the structure of the nominal phrase in classifier languages is to hypothesize that the various functional elements—demonstrative (D), numeral (Num), and classifier (Cl)—all head their own projections. Each of these heads projects, so that the maximal projection of a noun is not NP but DP (determiner or demonstrative phrase[1]). The following structure is quite common (see Simpson 2005, Wu and Bodomo 2009, Cheng and Sybesma 2012, among others):

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[1]We abstract away from the question of whether demonstratives are the same category as determiners, and whether that category is the D of the DP Hypothesis proposed for languages with determiners. See the works cited for some discussion. See also Allegranza (2006) and van Eynde (2006), who argue that there really is no category D.

(1)
```
        DP
       /  \
      D    NumP
           /  \
        Num    ClP
               /  \
             Cl    NP
                   |
                   N
```

Other publications add even more projections (e.g., Bartlett and González-Vilbazo 2013).

In this paper, we compare the DP Hypothesis as applied to English and to classifier languages against a different hypothesis, where the head of the nominal is the lexical head N (the NP Hypothesis). We adopt the structure proposed for English by Payne and Huddleston (2002) and adapt it to classifier languages as follows:

(2)
```
        NP
       /  \
      D    N̄
           /  \
         ClP    N
         /  \
      Num    Cl
```
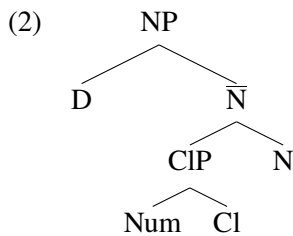
In this structure, the maximal projection of the nominal is a projection of the lexical head N, not any of the functional heads. There are three levels: the head N, the maximal projection NP, and intermediate projections which we label "N̄," of which there may be more than one (see Payne and Huddleston 2002, Payne *et al.* 2013; see also Allegranza 2006).[2] We assume that the numeral and classifier together form a sub-constituent, but this is not crucial to the arguments (see, e.g., Li and Thompson 1981, Tang 1990, Nguyen 2008, Zhang 2011, Bale and Coon 2014).

We compare the DP Hypothesis and the NP Hypothesis on a variety of phenomena, spending the most time on selection and verb-object idioms. We argue that all of this evidence supports the NP Hypothesis over the DP Hypothesis. Selection, in particular, is simply incompatible with the DP Hypothesis. In the DP Hypothesis, verbs must not select Ns, they must select Ds. D selects NumP, Num selects for ClP, and so on (Bartlett and González-Vilbazo 2013). This must be the case given the usual assumption that selection is strictly local, such that heads can only select their complements and their specifiers (Pollard and Sag 1994, Landau 2010, Sag 2010). In a structure like that in (1), it is impossible for there to be any selectional relation between a verb and the N head within its nominal complement. We show that this is incorrect, and that the

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[2]Payne and Huddleston 2002 do not use the label "N̄" for this intermediate projection, because the X̄ label means something particular in classical X-Bar Theory, namely a constituent that includes the head and its selected arguments only. The intermediate projection in nominals does not appear to distinguish between arguments and adjuncts. We nevertheless label it N̄, though with the caveat that this does not correspond perfectly to many versions of X-Bar Theory.

head of the sister of a verb must be N, not D or any other functional head. We also present data from a survey of verb-object idioms in English and classifier languages that argues for the same conclusion: the functional elements in idioms are generally not part of the idiom, and can be freely interchangeable. In contrast, in V-PP idioms, the P can never vary while the V and the complement of P are fixed. Idioms require a strictly local relationship between items that form the idiom; our findings regarding verb-object idioms therefore require that the head of the complement of the verb be N, not D, Num, or Cl.

We begin in section 2 by examining the issue of selection in detail, and compare nominals to clauses. There we show that the facts of selection are only compatible with the NP Hypothesis. In contrast, the head of the clause is a functional projection. Section 3 then presents a detailed study of verb-object idioms in English, Korean, and Vietnamese, comparing them to V-CP and V-PP idioms. Section 4 then shows how the NP Hypothesis can account for various facts that have typically been analyzed in DP terms, and in particular facts that have been used to argue for the DP Hypothesis. All of the facts are compatible with the NP structure. Moreover, recent work on head movement clearly favors the NP Hypothesis.

Throughout this paper, we treat both non-classifier languages like English, and classifier languages, concentrating on Korean and Vietnamese (these three languages are spoken natively by the three authors). The arguments hold for languages of both types, and indicate that the head of the nominal in every language is N, not D or any other functional head.

## 2   Selection

We begin with the issue of selection, and the problem it raises for the DP Hypothesis. First, we introduce some background on the DP Hypothesis.

The DP Hypothesis is the conjecture that the head of the nominal phrase is not N; instead, the NP projection is dominated by one (or more) functional heads that actually head the phrase, one of which is D (Determiner). Early suggestions of this hypothesis include Jackendoff (1972), Hogg (1977), Brame (1981, 1982), Szabolcsi (1983); among early proponents of this theory are Hudson (1984), Fukui (1986), Fukui and Speas (1986), Hellan (1986), Abney (1987), Horrocks and Stavrou (1987), Szabolcsi (1987), Löbel (1989), and Olsen (1989).

The primary motivation for the DP Hypothesis has always been a conceptual parallel with the structure of the clause, which was reworked by Chomsky (1986) as CP–IP–VP. The idea was that functional categories like C(omplementizer) and I(nflection) fit the X-bar schema, and head XPs with complements and specifiers; we should expect the same for functional heads like D. In addition, some researchers noted morphological parallels between clauses and nominals in agreement and case, which they took to suggest an NP-internal Infl, parallel to the clause. For a recent endorsement of the idea of a complete parallel between nominals and clauses, see Ritter and Wiltschko (2014, 1334).

We note two issues with this claimed parallel. The first is the apparent need to fit D into X-Bar Theory. In the case of clauses, postulating CP and IP was a response to a real problem: the categories S and S̄ had no heads. This was not the problem with D. Rather, the problem was that D seemed to occupy a specifier position, but specifiers in X-Bar Theory must be phrases, not heads. This is not actually a problem, though;

even in classical X-Bar Theory, it is possible to have single-word phrases:

(3)  NP
```
        NP
       /  \
     DP    N̄
      |     |
      D̄     N
      |
      D
```
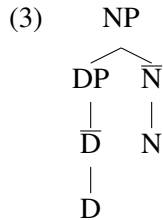
It might simply be the case that there are few elements (or even none) that combine with Ds to form DPs. But this is not unheard of: elements commonly referred to as "particles" are ones that take few or no modifiers or arguments, and many things of category Adverb mostly appear alone (e.g., *only*). Even in classical X-Bar Theory, then, there is no problem that the DP Hypothesis is a solution to, in contrast with clauses.

The second issue is selection. We will show here that selection seriously undermines the putative parallel between clauses and nominals. As has been pointed out by Baltin (1989), Payne (1993), Williams (2003), Sportiche (2005), and Bruening (2009), verbs and other selectors do not select for Ds, as the DP Hypothesis requires, or for any of the functional elements in the nominal. In contrast, in clauses, what is selected is the highest functional element. We show this in detail beginning with English, and then turn to the classifier languages Korean and Vietnamese. Section 2.3 addresses attempts to fix the DP Hypothesis to account for the facts, including the often-appealed-to notion of an extended projection (Grimshaw 2005 [1991], van Riemsdijk 1998). This notion does not describe anything in the clausal domain, and so is nothing but an ad hoc attempt to fix the failings of the DP Hypothesis in the nominal domain.

Before we begin, it is important to clarify what we mean by selection. We are concerned with selection in the broadest sense, encompassing semantic selection (s-selection), categorial selection (c-selection), selection for features (e.g., [finite]), and lexical selection (l-selection, Pesetsky 1992). We see no need to distinguish among these subtypes of selection. All of them are strictly local: particular selectors select particular elements to merge with. This selection may involve the specification of the semantic type of that element, its category, features it bears, or even particular lexical items (as in V selecting for particular prepositions, or as in idioms, below). We find all of these in selection, and our discussion in this section includes all of them, but focusing on category and feature selection. We are not aware of any reason to distinguish between these various subtypes for the purposes of our comparison here. (For discussion, see Pesetsky 1992; Pesetsky's attempt to eliminate c-selection is shown by Alrenga 2005 to be unsuccessful, and Pesetsky himself acknowledges that lexical selection and feature selection are necessary in addition to s-selection.)

## 2.1  English

Clauses and nominals differ in what is selected when a verb selects them. Verbs that select for clausal complements select only categories that are determined high in the clause, such as questions versus declaratives, finite clauses versus nonfinite clauses, and subjunctive versus indicative clauses:

(4)  *Questions versus declaratives:*

    a.    Sue thinks that/*whether the world is flat.

    b.    Sue wonders whether/*that the world is flat.

(5)  *Finite versus nonfinite:*

    a.    Bertrand wants the world to be flat.

    b.   * Bertrand wants that the world is flat.

(6)  *Subjunctive versus indicative:*

    a.    Sue asked that the answer be/*is two.

    b.    Sue thinks that the answer *be/is two.

Grimshaw (2005) claims that subjunctive selection is an instance of a verb selecting the form of the embedded verb. This is clearly not the case; it is the form of the *highest* verb, so Infl or Tense, that is selected, not the main verb:

(7)      I suggest that you **be/*are** studying when I return.

Furthermore, Baltin (1989) argues that verbs only need to select the complementizer, and nothing else. If a verb selects *for*, the clause is nonfinite, if *that*, it is finite. Payne (1993) (citing A. Zwicky) points out that subjunctives are an apparent problem for this view: both indicatives and subjunctives in English appear under *that*. However, plenty of languages have distinct subjunctive and indicative complementizers (e.g., Romanian); it is therefore not crazy to think that English has a $C_{Indic}$ and a distinct $C_{Subj}$, both of which are pronounced as *that*; if this is the case, then it is possible to maintain that selection of clauses involves only selection for C, and never for anything in the complement of C. Verbs that select clauses *never* select for the main verb, for modals, for auxiliaries, for negation, or for topic or focus phrases (suggesting that TopicP and FocusP are not actually high functional heads in CP, contra Rizzi 1997). All of these can generally appear in any complement CP whose other functional elements they are compatible with.[3]

We conclude that the verb is not the head of the CP in any sense, C is. It is what is selected for when verbs select clauses. Note that this is simply incompatible with Grimshaw's (2005 [1991]) idea of the clause as an extended projection of the verb: there is no sense in which CP, or any of the functional projections above VP, is a projection of the verb. We will return to this point in section 2.3.

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[3]A reviewer brings up selection of CP apparently changing when the higher clause is negative or a question, for instance where *if* is degraded with positive *know*:

(i)    a.  ? I know if this will work.

       b.    I don't know if this will work.

Such facts are discussed in Adger and Quer (2001) and McCloskey (2006) and given a plausible semantic account. They are therefore not a problem for the view of strict locality of selection that all the data presented here argues for (see especially Adger and Quer 2001 on this point).

In contrast to clauses, verbs that select nominal arguments *never* select for particular determiners, or numbers, or possessors, or anything else. Generally, if a verb admits a nominal, any sort of nominal is allowed: quantificational, deictic with demonstrative, definite or indefinite, numeral plus noun, adjective plus noun, and so on. For instance, Baltin (1989) points out that there is no verb that allows NPs without a possessor but not ones with a possessor (or vice versa); there is also no verb that allows indefinite NPs but not definite ones:

(8)   *Nonexistent selectional pattern:*
    a.    John glorped books. (Baltin 1989, (35))
    b.    * John glorped his books. (Baltin 1989, (36))

(9)   *Nonexistent selectional pattern:*
    a.    Samuel is streading a book.
    b.    * Samuel is streading the book.

One possible case of this is kinship *have*:

(10)    a.    I have a child.
        b.    * I have the/every child.

However, this is possibly some kind of existential construction; see Freeze (1992), among others. *Constructions* sometimes require indefinites (e.g., existential constructions) or definites (e.g., topic constructions), but particular verbs do not (note that *have* in other uses allows definites).

Number is often selected when a verb selects a nominal:

(11)    a.    I gathered the students.
        b.    * I gathered the student.
        c.    I gathered the French Club.
        d.    * I gathered the scissors. (where there's only one pair of scissors)
        e.    I gathered a butcher, a baker, and a candlestick maker.

But note that selection for number is generally semantic, not syntactic, as shown by the semantically plural but syntactically singular (11c) versus the semantically singular but syntactically plural (11d). It is not clear that number should be represented as a functional head separate from N (as in Ritter 1991); if it is, it is not clear what its content is in (11c), where the noun is formally singular, or in (11e), where each of the conjoined nouns is singular. It is more plausible to view semantic number as a property of the noun, given (11c) (but we acknowledge that number is a complicated topic that we cannot possibly do justice to here).

There is yet another asymmetry between nominals and the clausal domain. In the clausal domain, we have seen various instances of categorial selection for CP above (with selection for particular values of C, like [interrogative]). In addition, some verbs also select for clauses that are smaller than CPs. Raising verbs, for instance, are typically analyzed as selecting bare IPs (with a value of [nonfinite]), since raising

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is incompatible with CP material (complementizers, wh-phrases).  Some other verbs are thought to select something even smaller, for instance VP. The following are some examples that have been argued to involve selection of bare VPs (Stowell 1983; examples (12a–d) are Stowell's):

(12)  a.  Mary had [VP her brother open the door].

  b.  Nobody heard [VP it rain last night].

  c.  I want [VP it understood that the order was given].

  d.  We all feared [VP John killed by the enemy].

  e.  I made [VP them leave the room].

Numerous verbs also select forms in *-ing* and do not allow infinitival *to* or anything that is known to be higher than VP (see Pesetsky 1992); these might also plausibly be analyzed as selection of (a particular value of) VP:

(13)  a.  She enjoyed [hearing the concerto].

  b.  * She enjoyed [to hear the concerto].

(14)  a.  He succeeded in [convincing her].

  b.  * He succeeded [to convince her].

Alternatively, these are gerunds, nominals formed from VPs.  If so, there is some nominal-forming head that selects for a VP. Either way, we see selection of VP. (For an analysis of restructuring or clause union as selection of VP, see Wurmbrand 2007.)

In other words, in the clausal domain, where it is hypothesized that there is a series of projections CP-IP-VP, we see selection for each of these projections: some verbs select CP, others select IP, others may select VP. Now, if nominals were truly like clauses and involved a series of projections DP-(NumP)-NP (or others), we should likewise see selection for each of these projections. The fact is that we never do. As stated above, if a verb (or other head) selects for a nominal, these functional elements vary, either freely or based on the choice of head noun (never the selecting verb). Some publications adopting the DP Hypothesis in fact argue that different nominal projections can have or lack the functional projections to different extents, for instance Déchaine and Wiltschko (2002) and Bošković (2014). It is striking, and totally unexpected in these theories, that verbs and other selectors *never* select for particular "sizes" of nominals in this sense, whereas they do seem to select different "sizes" of clauses.[4] Once again, the expectations of the DP Hypothesis are not met, and clauses and nominals are not parallel at all.

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[4]Pereltsvaig (2006) claims that such selection happens in Russian, with an aspectual prefix selecting a QP rather than a full DP. However, Pereltsvaig's account of the difference between DPs and QPs is based entirely on semantics and features, and does not depend on a difference between the two in syntactic category.  A reinterpretation of the Russian data might view the two types of nominals as syntactically the same but semantically and featurally distinct. As far as we can tell, this type of analysis would be compatible with all of Pereltsvaig's data.

Additionally, incorporated and "pseudo-incorporated" objects are sometimes posited to lack functional structure. As far as we can tell, however, this is not an issue of selection; one and the same verb can appear with either a full-fledged NP or an NP lacking functional material.

Turning to selection of form, we also find that clauses and nominals behave entirely unlike each other, as was noted by van Riemsdijk (1998). In the clausal domain, each head determines the form of the head of its complement. C determines Infl, and each auxiliary determines the form of the next. This is illustrated for English below (for a recent analysis of the English auxiliary system, see Harwood 2015):

(15) *C determines Infl (finite vs. nonfinite):*
    a.    I would like for the Jamaicans to win.
    b.    I expect that the Jamaicans will win.

(16) *Each auxiliary determines the form of the next:*
    a.    I might have been being handed some cocaine (when the police caught me).
    b.    (might: bare form; have: -en form; be (Prog): -ing form; be (Pass): -en form)

The main verb does not determine the form of the functional elements, they determine its form. The only exception that we are aware of is auxiliary selection with unaccusatives versus unergatives (Romance, Dutch). But in this case, auxiliary selection is not determined by the verb itself. The same verb will have one auxiliary in the active voice, and a different one in the passive voice. In addition, adding a PP can change the choice of auxiliary for the same verb (see, e.g., Hoekstra and Mulder 1990). In other words, auxiliary selection seems to be determined by several heads in the clause, and not by the particular verb.

In clauses, then, functional heads determine the form of other heads, consistent with the typical analysis where a functional head heads the CP projection, with each head taking the next as its complement.

In contrast, in nominals the form of everything else is determined by the head noun:

(17)    a.    too many/*much people
    b.    too much/*many rice
    c.    these/*this scissors

This is even clearer in languages like Spanish that are richer in inflection than English:

(18) *Spanish*
    a.    todos esos  lobos   blancos
            all    those wolves white
    b.    todas esas  jirafas   blancas
            all    those giraffes white

In Spanish, every element in the nominal phrase must agree with the head noun in gender and number (*lobos* is masculine plural, *jirafas* is feminine plural).

One might try to claim that it actually works the other way around: choosing a functional element in DP actually determines the form of N. This does not seem to be correct, however. In clauses, where this *is* how selection works, every verb will be able to combine with any of the functional elements that select its form. For instance, there is no hypothetical verb *geat* that only has finite forms, and lacks a nonfinite one:

(19)  *Nonexistent verb:*

    a.    I think that he geats. (finite)

    b.    * I want to geat. (*nonfinite)

In contrast, a noun will just be incapable of combining with functional elements that mismatch:

(20)    a.    these scissors

        b.    * this scissors

        c.    * too many rices

(21)    Spanish

        a.    todas las mesas ('all the tables')

        b.    * todos los mesas

If it were really the case that the functional elements in the nominal determined the form of N, in the same way that the functional elements in the clause determine the form of V, we would not expect this asymmetry.

The conclusion is that each functional element in the clausal domain is a head taking the next one as its complement (which determines its form), but this is *not* the case in nominals. In other words, clauses and nominals are not parallel at all. We can also note at this point that clauses do not behave as though they are headed by the lexical verb, as Grimshaw (2005 [1991]) claims when she analyzes the clause as an *extended projection* of the verb. In fact, the verb determines nothing outside of its own projection. There is no sense in which the higher functional projections are projections of the lexical verb. This is discussed in more detail in section 2.3. For now, we conclude that the facts of selection indicate that the head of the CP is in fact C, but the head of the NP is not D, it is N.

## 2.2   Selection in a Classifier Language: Korean

Classifier languages show the same clause-nominal asymmetry that English does, as we now show with Korean. The facts are similar in other classifier languages like Vietnamese, but we omit the data on Vietnamese for reasons of space. (We omit Vietnamese throughout the paper, but include the data in a separate appendix.)

Korean employs different sentence-final particles to mark clauses as declarative, interrogative, imperative, and exhortative (Ahn and Yoon 1989, Whitman 1989, Jung 1998, Bradner 2004, Pak 2004, among others). Verbs that select clauses as complements may select for particular types of these mood markers. For instance, the verbs meaning 'claim' and 'believe' only permit declarative clauses and do not allow interrogative clauses, while 'ask' and 'question' select for interrogatives and do not permit declaratives:[5]

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[5] Abbreviations: Acc: Accusative, Adn: Adnominal, Asp: Aspect, Cl: Classifier, Comp: Complementizer, Cop: Copula, Dat: Dative, Decl: Declarative, Def: Deferential, End: Ender, Evi: Evidential, Exhort: Exhortative, Fut: Future, Gen: Genitive, Hon: Honorific marker, Imp: Imperative, Int: Intimate marker, Neg: Negative, Nml: Nominalizer, Nom: Nominative, Part: Particle, Pl: Plural, Pol: Polite marker, Pres: Present, Pst: Past, Q: Question, Top: Topic.

(22) a. Lina-nun [Thomi-ka    ku  kapang-ul sa-ss-ta/*nya]-ko       cwucanghay-ss-ta
Lina-Top [Tommy-Nom that bag-Acc    buy-Pst-Decl/*Q]-KO claim-Pst-Decl
/mit-ess-ta.
/believe-Pst-Decl
'Lina claimed/believed that Tommy bought that bag.'

b. Lina-nun wuli-eykey [Thomi-ka    ku  kapang-ul sa-ss-nya/*ta]-ko       mwul-ess-ta
Lina-Top we-Dat      [Tommy-Nom that bag-Acc    buy-Pst-Q/*Decl]-KO ask-Pst-Decl
/cilmwunhay-ss-ta.
/question-Pst-Decl
'Lina asked/queried us whether Tommy bought that bag.'

As further examples, 'suggest' and 'persuade' select for an exhortative, while 'order' and 'direct' require an imperative:

(23) a. Lina-nun wuli-eykey [ku   kapang-ul sa-ca/*ta/*nya]-ko        ceyanhay-ss-ta
Lina-Top we-Dat      [that bag-Acc   buy-Exhort/*Decl/*Q]-KO suggest-Pst-Decl
/seltukhay-ss-ta.
/persuade-Pst-Decl
'Lina suggested to us/ persuaded us to buy that bag.'

b. Lina-nun wuli-eykey [ku   kapang-ul sa-la/*ca/*ta/*nya]-ko        myenglyenghay-ss-ta
Lina-Top we-Dat      [that bag-Acc   buy-Imp/*Exhort/*Decl/*Q]-KO order-Pst-Decl
/cisihay-ss-ta.
/direct-Pst-Decl
'Lina ordered/directed us to buy that bag.'

As in English, then, verbs that select clauses select something high in the clause, namely whatever head it is that determines declarative, interrogative, imperative, or exhortative mood (see Jung 1998 for a summary of views in the Korean literature on what this head is). Note that in Korean, embedded clauses are typically marked with a morpheme *-ko* (*-nun* if they are complements to nouns), which comes outside the mood marker. The morpheme *-ko* is generally assumed to be a complementizer (Choe 1988; Ahn and Yoon 1989; Whitman 1989; Yoon 1990; Sells 1995; Kim 1996; Jung 1998). However, it occurs with all mood markers, which is what is actually selected by embedding verbs. Since the morpheme *-ko* is invisible to this selection, it could not be a head occurring between the mood head and the higher verb; instead, it appears to be simply a morphological marker of subordination.

Verbs may also select for finite versus non-finite complements, as in English. Consider (24). In (24a), *ko siphta*, 'want, hope', in Korean takes a nonfinite form as its complement and not a finite form. (*Siph-* cannot stand alone without the embedded V-*ko*. Also, note that Korean has another verb meaning 'want', *wonhata*, which has different selectional properties from *-ko siphta*.)

(24)  a.   Chris-nun [ku   phija-lul   *mek*]-ko siph-ta/siph-ess-ta.
          Chris-Top [that pizza-Acc eat]-KO want-Decl/want-Pst-Decl

          'Chris wants/wanted to eat the pizza.'

     b.   * Chris-nun [ku   phija-lul   *mek-ess*]-ko siph-ta/siph-ess-ta.
          Chris-Top [that pizza-Acc eat-Pst]-KO want-Decl/want-Pst-Decl

          'Chris wants/wanted to eat the pizza.'

We assume that this involves selection of a null mood or similar head high in the clause, which then selects non-finite tense and so on.

As for heads lower in the clause, they are selected by higher heads in the same clause, as in English. This has already been illustrated by the examples above: In (22), the declarative mood head and the interrogative mood head select finite tense. In those examples, a tense morpheme appears on the verb (past, in these examples). In contrast, in (23), the exhortative and the imperative mood heads select non-finite forms, without any tense marking. Again, we see the highest functional head selecting the next functional head down (mood, something like C, selects T or Infl).

We also see selection of clauses smaller than full CPs. Causatives, for instance, do not permit mood or tense marking in their complement, as shown in (25). We assume that causatives involve selection of something like VP (or VoiceP).

(25)  a.   emma-nun [Hanky-lul   kongpwuha]-key hay-ss-ta.
          mother-Top [Hanky-Acc study]-KEY      do-Pst-Decl

          'Mother had Hanky study.'

     b.   * emma-nun [Hanky-lul   kongpwuha-ss]-key hay-ss-ta.
          mother-Top [Hanky-Acc study-Pst]-KEY      do-Pst-Decl

          'Mother had Hanky study.'

Just as in English, then, a higher verb selects the highest element in the clause (mood, in the case of Korean); mood selects the form of Infl or Tense; and so on. There is no embedding verb that selects for particular types of embedded verbs; no embedding verb that selects for a particular tense or aspect; etc. In the clausal domain, only the highest head is selected by an embedding verb, and each head selects the next head down. If a verb selects for a bare VP, then no mood or tense can appear at all (as with causatives).

In contrast, verbs that select nominals never select for particular functional elements. There is no verb that selects for a demonstrative, a numeral, or a classifier. If a verb selects a nominal phrase, any combination of these elements is allowed. This is demonstrated for mass and count nouns below:

(26)  a.   Mina-ka   (ku /sey   pyeng-uy) wain-ul   ma-syess-ta.
          Mina-Nom (that /three Cl-Gen)    wine-Acc drink-Pst-Decl

          'Mina drank (those/three bottles of) wine.'

     b.   Tim-i     (i    /twu thong-uy) pyenci-lul sse-ss-ta.
          Tim-Nom (this /two Cl-Gen     letter-Acc write-Pst-Decl

'Tim wrote (these/two) letters.'

As in English, the functional elements in the nominal domain are *never* selected by verbs. A verb either selects a nominal or it does not. If it selects a nominal, any combination of the functional elements demonstrative, numeral, classifier is allowed. This is in stark contrast with clauses, where verbs *only* select the highest functional element, and each functional element selects the next. There is also no verb that selects a bare NP, the way the causative selects a bare VP.

The conclusion from both English and Korean is that clauses are headed by functional elements, something like C (or Mood). The highest functional element selects the next functional element, until the lexical verb is selected. Nominals, in contrast, are *not* headed by functional elements. What is selected by a selecting verb is the lexical N itself, and the functional elements are irrelevant. This is true cross-linguistically, in classifier and non-classifier languages alike. Clauses and nominals are not comparable at all when it comes to selection, and the DP Hypothesis simply gets the facts wrong.

## 2.3   Attempts to Fix the DP Hypothesis

The issue of selection has been addressed in the DP Hypothesis. The first attempt at accounting for the selection of N that we are aware of involves percolation (Abney 1987). The features of N percolate up through the functional layers (in Abney, AP as well as DP). The problem with this account is that it does not explain why Ds and other things are *not* selected in nominals; they are there, and local, and should be available for selection. This theory would also have to explain why the features of V (or other things) do not percolate up to CP. In other words, it does not capture the asymmetry between clauses and nominals.

The second attempt at a fix that we are aware of is the double-headedness of Radford 1993 (see also Beavers 2003). In this account, nominals have two heads, N and D. Again, this theory does not explain why Ds and other things are not selected in nominals, since they are entirely comparable to N. It also fails to explain why clauses behave differently from nominals.

A third attempt to account for selection in the DP Hypothesis was proposed by Sportiche (2005). Noticing that verbs never select for Ds, Sportiche proposed that in their base positions, nominals are simply Ns. They then move to locations higher in the tree where the Ds are generated, combining with them to become DPs. The problem with this account is that there is no place where the Ds could be generated, by Sportiche's own reasoning. Just as Vs never select Ds, neither do Voice, v, Aspect, Tense, C, or any other functional projections. There is no selectional relation between D and any projection higher in the tree. If D cannot be an argument of V because V never selects D, then there is no head anywhere in the tree whose argument D could be. The only head D enters into any relation with is N.

As a fourth attempt to salvage the DP Hypothesis, a reviewer suggests that perhaps selection is not strictly local. To our knowledge, this has never been proposed in the literature, and with good reason. As we saw in the clausal domain, selection *is* strictly local, with each head selecting the next. Similarly, if selection were not strictly local, we would expect all kinds of configurations to be licit that are not. For instance, prepositions like *despite* strictly select NPs and do not allow CPs:

(27)   a.   * Despite [$_{CP}$ that he never finished his PhD], . . .

b.    Despite [NP the fact that he never finished his PhD], . . .

If selection could be non-local in the way the DP Hypothesis requires, an NP in the specifier of CP or a nominal main predicate should be able to satisfy the selectional requirement of *despite*, but they cannot:

(28)    a.    * Despite [CP [NP which degree] he never finished], . . .
        b.    * Despite [CP that he is [NPa genius]], . . .

To give up the locality of selection is to give up most of the results of syntactic theory. We conclude that this is not an option.[6]

The final attempt to salvage the DP Hypothesis that we will discuss is the one most commonly appealed to. This is the notion of an extended projection (Grimshaw 2005 [1991], van Riemsdijk 1998). The DP is said to be an extended projection of the N, and so a higher verb can indirectly select the N by selecting for the whole extended projection. The problem with this hypothesis is that it boils down to an ad hoc attempt to fix the failings of the DP Hypothesis. As we have seen, it is simply not correct to view the clause as an extended projection of the verb. There is no sense in which the functional elements of the clause are really a projection of the verb. As we saw, it is the functional elements that are selected when clauses are selected, and each functional head determines the form of the one it selects. The verb does not determine anything outside of its own projection. This means that the notion of an extended projection is simply incorrect for clauses, and fails to capture anything about their behavior. In the nominal domain, it does seem that the entire nominal is a projection of the noun. This means that the DP Hypothesis *could* be correct, *if* we adopt the notion of an extended projection. However, since this notion describes nothing in the clausal domain, its use in the nominal domain is completely ad hoc: it becomes a device whose only purpose is to fix the failings of the DP Hypothesis. In addition, the idea of an extended projection suffers from the same problem as the percolation idea discussed above: there is no reason in the extended projection theory why D, Num, and Cl could not be selected. The notion of an extended projection is therefore unhelpful and ad hoc, and should be abandoned.

A reviewer argues that the notion of an extended projection is justified as part of the notion of a Hierarchy of Projections common in much current theorizing. The idea of a Hierarchy of Projections is most clearly spelled out in Adger (2010), but it is also part of all cartographic approaches (e.g., Rizzi 1997, Cinque 1999). The Hierarchy of Projections view says that there is a fixed hierarchy of functional projections in each domain, for instance clauses and nominals. The hierarchies proposed by Adger (2010) for English clauses and nominals are the following (the numeral simply indicates the place on the hierarchy):

(29)    (Adger 2010, 198, (39))

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[6]The same reviewer asks about negation, which is commonly posited to head a NegP that is only present in negative clauses (e.g., Pollock 1989). According to the reviewer, this ought to disrupt the selectional relation between whichever two heads flank NegP. Although this particular issue is not that troublesome (see disjunctive selection immediately below), we believe that there are other reasons not to posit a NegP that is comparable to TP, AspP, and so on. For some theories of negation that do without a NegP, see Kim and Sag (2002), Bruening (2010b).

a. $\langle$V,1$\rangle$ < $\langle$v,2$\rangle$ < $\langle$Pass,3$\rangle$ < $\langle$Prog,4$\rangle$ < $\langle$Perf,5$\rangle$ < $\langle$Mod,6$\rangle$ < $\langle$Neg,7$\rangle$ < $\langle$T,8$\rangle$ < $\langle$Fin,9$\rangle$ < $\langle$C,10$\rangle$

b. $\langle$N,1$\rangle$ < $\langle$n,2$\rangle$ < $\langle$Poss,3$\rangle$ < $\langle$Num,4$\rangle$ < $\langle$D,5$\rangle$ < $\langle$Q,6$\rangle$

Now, categories can be freely combined so long as they respect this hierarchy. The idea is that it would not be desirable to have each category select a long disjunctive list; rather, UG fixes a hierarchy, and Merge is free so long as it respects that hierarchy. For instance, T can freely combine with any of the categories below it (Neg, Mod, Perf, etc.).

According to the same reviewer, this Hierarchy of Projections also defines the domain for head movement and feature transmission, so it is independently necessary. Regarding head movement, the tensed verb can appear in any of the head positions within the clausal Hierarchy of Projections (depending on the language). Ditto for the N within the nominal hierarchy. Since the Hierarchy of Projections is thus independently necessary, we are justified in using it to account for the behavior of nominals within the DP Hypothesis.

Unfortunately, this independent justification is illusory. Anaphor binding and A-movement are constrained by the same locality condition as head movement and feature transmission (basically, CP). The Hierarchy of Projections has nothing to say about these. In contrast, a general theory of locality has the hope of explaining all of them under a single locality condition (e.g., the phase theory of Chomsky 2000). Since we need an explanation for the locality constraint on anaphor binding and A-movement, and this constraint will also account for head movement and feature transmission, there is no independent motivation for a Hierarchy of Projections. (Moreover, we will see in section 4.4 that there is no head movement in nominals.)

Furthermore, in Adger (2010), there are two modes of combination, Sel(ect)-Merge and HoP-Merge (for "Hierarchy of Projection Merge"). In Sel-Merge, a category selects a feature, say "[C]," and this feature is checked off by Merging it with a category with that feature (e.g., a CP). HoP-Merge simply combines two categories with no selectional relation between them; the only condition is that it must respect the Hierarchy of Projections, as described above. Now, it would obviously be better to have only a single type of Merge, rather than two. Sel-Merge can be shown to do all the work of HoP Merge, and in fact it can do the job *better* than HoP-Merge. This means that we can get rid of HoP-Merge, and without it there is no need for a Hierarchy of Projections.

We can get the same effect as HoP-Merge by allowing selection for a disjunctive list, which we need anyway for verbs that take either CP or NP but not both at once, for instance. To account for Adger's hierarchy above, we would say that C selects T; T selects any one of Mod, Perf, Prog, Pass, v; Mod selects any one of Perf, Prog, Pass, v; Perf selects any one of Prog, Pass, v; and so on. If T selects Prog (*She was running*), Prog does not select Perf, so we will never get the wrong result (*She was having run*). Disjunctive selection, then, captures the Hierarchy of Projections without a Hierarchy of Projections. Moreover, HoP-Merge is too permissive. It incorrectly permits C to merge directly with v or V, for instance, but to our knowledge this is never allowed, in any language. Reducing HoP-Merge to Sel-Merge does not have this problem: C does not select for v or V, it only selects for T. We would have to add selection to HoP-Merge anyway to account for this, and then we might as well just have selection.

Finally, the Hierarchy of Projections is, at best, just a description of the facts. Disjunctive selection

is also a description of the facts, but it is independently necessary (for verbs, e.g., and it would have to be added to HoP-Merge to stop C from merging with V). The Hierarchy of Projections also gets the facts wrong, without adding further stipulations.

Having said this, we do need an explanation for the order of functional elements in the nominal. At worst, one can copy the Hierarchy of Projections model and simply stipulate the order as part of UG. But rejecting the Hierarchy of Projections might instead lead us to investigate other explanations, and come to a better understanding of why the order is what it is. Note that a similar issue has arisen for adjectives and adverbs, which seem to appear in set orders across many languages (but with complications). One response has been to posit a hierarchy of projections (e.g., Cinque 1994, Cinque 1999), but another response does without this, and tries to account for the order in other ways (e.g., Martin 1969, Sproat and Shi 1988, Ernst 2002). It is possible that there are semantic reasons for the order of D, Num, Cl, and so on being what it is, or it could be that UG just specifies some of the things that go into an NP and what their order is. The important point for us is that the DP Hypothesis is unnecessary, whichever approach we choose. (For a more developed account of the functional elements in the NP, see Allegranza 2006.)

## 2.4  Summary

The facts of selection are incompatible with the DP Hypothesis. What verbs select is the lexical head N, not any functional projection in the nominal phrase. This is in sharp contrast with clauses, where verbs *only* select the highest functional projection. Nominals and clauses are not parallel at all, as the DP Hypothesis claims. We conclude from this that the head of the nominal projection must be N, not D or any other functional category.[7]

We turn next to a detailed investigation of verb-object idioms. As we will show, they follow the same pattern as selection generally: there is a relation between V and N, and no relation between V and any of the functional projections within its nominal complement. Verb-object idioms act very differently from V-PP and V-CP idioms, as we will see. Again, we take this to argue in favor of the NP Hypothesis and against the DP Hypothesis.

## 3  Idioms

In this section we expand the comparison with nominals from clauses to PPs. Complement PPs are generally regarded as having at least one functional head (namely, the P) between a selecting verb and the nominal complement of the P. In the DP Hypothesis, this is comparable to D occurring between the selecting V and an NP. We look at verb-object idioms in comparison with V-PP and V-CP idioms. As we will see, they behave very differently, indicating that D, Num, Cl are not functional heads in a hierarchy between V and N.

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[7]A reviewer argues that Ds must c-select an element of category N. This is probably correct. The reviewer further argues that this means that the D must project. The reviewer appears to be adopting Chomsky's (2000) algorithm for determining the label of a syntactic object, according to which the selector always projects. As discussed in Bruening (2010a, 533–534), Chomsky's labeling algorithm must be rejected. Adjectives also c-select category N and adverbs c-select other categories, but neither projects (see also Pollard and Sag 1994 on selection by adjuncts).

Idioms are relevant because, while they exhibit quite a bit of flexibility, they are also very constrained. In particular, the pieces of an idiom have to be very closely related to each other. One of the earliest attempts to capture this tight relation was the hypothesis that phrases that are interpreted idiomatically must be deep structure constituents, excluding all non-idiomatic material. This approach has been shown to be incorrect. For instance, Ernst (1981), Nunberg, Sag, and Wasow (1994), Nicolas (1995), O'Grady (1998), and others have pointed out that quantifiers, adjectives, and possessors that are not part of an idiom can come in between a verb and object that are interpreted idiomatically:

(30)    a.    pull <u>some discreet</u> strings
       b.    pull <u>a few</u> strings
       c.    pull <u>yet more</u> strings (Nunberg, Sag, and Wasow 1994, (5c))

(31)    (O'Grady 1998, (5a,c,d))
       a.    kick the <u>filthy</u> habit
       b.    leave no <u>legal</u> stone unturned
       c.    jump on the <u>latest</u> bandwagon

(32)    (O'Grady 1998, (4c–e))
       a.    lose X's cool
       b.    get X's goat
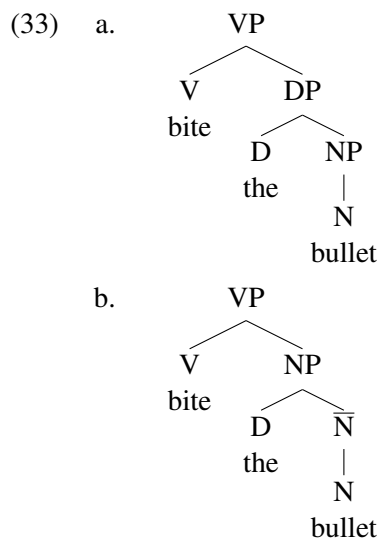       c.    fill X's shoes

Adjectives, quantifiers, and possessors form constituents with nouns; there is no constituent in these examples consisting of all and only the idiomatic material.

More recent approaches therefore adopt some sort of *dependency* or *selection* view. For instance, Baltin (1989) hypothesizes that idioms involve only the head of a phrase and the head of one of its complements. This is not quite right, because specifiers and adjuncts can also be part of an idiom; see below and Bruening (2010a). van Gestel (1995) says that idioms consist of the selection of a lexical head by another lexical head. Again, this is also not quite right, because idioms can include functional material, as we will see below. According to Koopman and Sportiche (1991, 224), a necessary condition on idioms is that, if X is the minimal constituent containing all the idiomatic material, the head of X is part of the idiom. This is correct, but it is also too weak. Two formulations that come the closest to empirical adequacy are O'Grady's (1998) *dependency* theory and Bruening's (2010a) *selection* theory. These impose very similar restrictions on idioms. Which is correct is not at issue here, what is important is that the condition is very local. Basically, for two elements X and Y to form (part of) an idiom, X and Y have to enter into a very tight local relationship, namely, some sort of selection-like dependency that is limited to sisterhood (or possibly a condition like the following: Y has to merge with a projection of X, or vice versa). Longer idioms are formed by a series of local relationships. For example, the idiom *NEG have a leg to stand on* ('not have any

basis or standing') involves a local relationship between NEG and a VP headed by *have*;[8] one between *have* and an NP headed by *leg*; one between this NP and an infinitival relative which we assume is headed by a null C; within this relative clause there is then a series of local relationships between C and *to*, *to* and VP, V (*stand*) and PP, P (*on*) and a gap (perhaps a null operator, as in Chomsky 1977).

As can be seen from this example, idioms can involve sequences of functional material in a clause (null C, infinitival *to*) and can involve a sequence from V through P to P's complement. Every single step within these sequences is extremely local. As we will see below, idioms cannot skip over material, and include only two things that are not in a local relationship. An example we will see below is that there is no idiom that includes a V and the object of a P, skipping the P.

With this in hand, we can look at how verb-object idioms behave in comparison with clauses and PPs. Consider a simple verb-object idiom in English like *bite the bullet* ('make oneself do something or accept something difficult or unpleasant'). This would have two different analyses in the DP Hypothesis versus the NP Hypothesis:

(33)   a.

```
              VP
            /    \
           V      DP
         bite    /  \
               D     NP
              the     |
                      N
                    bullet
```

   b.

```
              VP
            /    \
           V      NP
         bite    /  \
               D     N̄
              the     |
                      N
                    bullet
```

In the DP Hypothesis, the verb *bite* does not enter into a local relationship with the N, it only enters into a local relationship with the D. On the DP Hypothesis, then, we expect verb-object idioms to involve all of V-D-N in the idiom. That is, in the idiom *bite the bullet*, the determiner *the* must be an integral part of the idiom. In contrast, in the NP Hypothesis, the V *bite* and the N *bullet* enter into a local relationship directly. The D could be part of the idiom by virtue of entering into a local relationship with the N, but it would not have to be. We might expect it to be like optional modifiers, which can be freely inserted because they do not disrupt the local relationship between V and N:

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[8]This abstract NEG can be spelled out in various ways: by the sentential negator *not*, or by combining with the indefinite article on the object (*have no leg to stand on*). We will not present a complete theory of how this might work, but refer the reader to the literature on negative indefinites, for instance Abels and Martí (2010), Penka (2012), and the references there. Note again that having NEG enter into a local relationship with VP (perhaps selection) does not require that NEG project. See note 7.

(34) Should ODI bite the **open access** bullet for its journals?[9]

(See also the examples in 30–32.) We would then expect other determiners to be able to replace *the*, within the confines of the determiner system of English.

We can also compare verb-object idioms to V-PP idioms, where every theory posits a functional head (at least one) between the verb and the nominal complement of the P:

(35)
```
        VP
       /  \
      V    PP
          /  \
         P   NP/DP
```
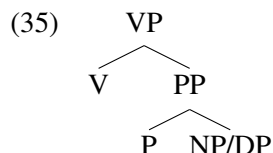
Every theory would expect P to have to be part of the idiom in such cases, if the V and the complement of the P are. This is because the V does not enter into a local relationship with the NP or DP here, but only with the P.

We will also compare verb-object idioms to idioms involving clauses. We will also make all these comparisons in classifier languages as well as English.

Before we turn to this comparison, we have to clarify how we identify an idiom. We consider phrasal idioms to be two or more words that, just when combined with each other, do not have the meaning that is expected from the combination of their constituent parts, but some other meaning. It is crucial that this meaning only arises when the parts co-occur. For example, *get X's goat* is a phrasal idiom because the verb *get* does not have its literal meaning of acquisition in this idiom, nor does *X's goat* refer to an animal. Just when combined, they produce the meaning 'drive X to anger/annoyance'. The verb *get* does not have this meaning in any other context, nor does *X's goat*. This particular idiomatic meaning only arises when the V and the NP combine together; it is not there with different choices of NP or different choices of V. So, *get X's goat* does not have the same meaning as *get X's sheep/cow/hen* or *have/take/bring/steal X's goat*. A good illustration of the role of combination in determining meaning is the three idioms *hit the sack* (go to bed), *get/give the sack* (be fired or fire someone), *leave holding the sack* (abandon to take all the responsibility). Here, the NP *the sack* has three different meanings triggered by the other words that it combines with.

In contrast, the expression *a little bird told X Y* is not a phrasal idiom, because the verb, *told*, has its literal meaning in this expression. In addition, the NP *little bird* can mean an anonymous source of information with different verbs. It is attested in *a little bird said/emailed/broadcast/leaked/etc.* The NP even occurs without any verb of communication, as in *Had Varys's little birds failed him for once?* (George R.R. Martin, *A Clash of Kings*).

So, the deciding criterion for counting something as a verb-object idiom is that the non-literal meaning only arises when the verb and the object combine together, and is not present with different choices of V or different choices of NP, as just illustrated. The question will then be whether the idiomatic meaning is still present with different choices of D (or Num, or Cl).[10]

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[9]https://oxfamblogs.org/fp2p/should-odi-bite-the-open-access-bullet-for-its-journals-response-to-last-weeks-academic-spring-rant/

[10]It should be noted that some idioms permit more than one particular word. For example, *clutch at straws* is also widely attested

### 3.1 V-PP Idioms

We will begin with our two comparison cases, V-PP idioms and idioms with CPs. Beginning with English V-PP idioms, we find basically two classes of these idioms. In the first, V, P, and N are all part of the idiom (some of these are from O'Grady 1998, 295, 297, 300):

(36)
| | | | | | |
|---|---|---|---|---|---|
| a. | bark up the wrong tree | f. | knock on wood | k. | start from scratch |
| b. | beat around the bush | g. | pay through the nose | l. | stick to X's guns |
| c. | fall in line | h. | read between the lines | m. | swim against the current |
| d. | get to first base | i. | sit on X's hands | | |
| e. | jump on the bandwagon | j. | slip through X's fingers | | |

The idiom may also include another NP or an open slot for an NP, but this is not relevant, only the V and PP are:[11]

(37)
| | | | | | |
|---|---|---|---|---|---|
| a. | feed X to the lions | e. | leave X in the lurch | i. | take X to task |
| b. | keep X under Y's hat | f. | pull the wool over X's eyes | j. | take X to the cleaners |
| c. | kick X to the curb | g. | sell X down the river | k. | throw X to the wolves |
| d. | lay X on the line | h. | send X to the showers | l. | throw X under the bus |

In all of these cases, the P is an integral part of the idiom. Replacing it with another P loses the idiomatic meaning, or means that the speaker got the idiom wrong (e.g. *bark at the wrong tree*, *start with scratch*, *read around/among the lines*, *send X toward the showers*, *pull the wool across X's eyes*).[12]

In the second category, the V and P are fixed, but the nominal complement of the P is an open slot. Again the presence of another NP is not relevant. (Some of these are from O'Grady 1998, 300–301.)

(38)
| | | | | | |
|---|---|---|---|---|---|
| a. | beat the bushes for X | g. | light a fire under X | m. | take a back seat to X |
| b. | cast a pall on X | h. | Neg hold a candle to X | n. | take a gander at X |
| c. | do a number on X | i. | pay lip service to X | o. | throw the book at X |
| d. | give it to X | j. | pull the plug on X | p. | turn a blind eye to X |
| e. | give rise to X | k. | shed light on X | | |
| f. | give voice to X | l. | sink Y's teeth into X | | |

---

as *grasp at straws*. There are also "families of idioms" like *beat the crap out of*. Here the verb can be one of several verbs like *beat* and *kick*, and the noun can also vary within a limited range, as *crap*, *shit*, *tar*, etc. We will avoid such idioms in our study, to make the comparison as clean as possible. Note that the existence of such idioms does not call into question the view that there must be a tight local relationship between two items in an idiom; that relationship can simply specify more than one item.

[11]Idioms like *send X to the showers* indicate only that there is a tight local relationship between the V and the PP. This is compatible with numerous structural analyses for such VPs, including a ternary branching one, a layered one ([[send X] to the showers]), or a VP shell (Larson 1988). It is not important here which is correct.

[12]O'Grady (1998, 280–281) cites the example of 'skating on thin ice' occurring as 'skating over/close/to/over (sic) thin ice', but here the idiom seems to be just 'thin ice'. It occurs frequently as 'on thin ice' or just 'thin ice' in numerous book and song titles; in fact, in the first 50 hits for "on thin ice" using google and the first 50 hits for "thin ice" (no preposition; searches performed 12/21/2013), the verb 'skate' does not occur even once. In contrast, the verbs 'walk' and 'tread' occur with the PP 'on thin ice' a few times. When there is a P, it is usually 'on', but one occurrence of 'across' did occur in these 100 hits (with no verb).

Once again, the P is a crucial part of the idiom. Replacing it with another removes the idiomatic meaning (*light a fire on/beside X*, *throw the book over/beneath X*, *do a number with X*, etc.).

We do not find any idioms where V and the object of the P are fixed, but the P can vary. This is a striking contrast with the second class, in which V and P are fixed, but the object of the P can vary. This contrast indicates that open slots are certainly allowed (and idioms do not have to be constituents), but every element of the idiom must be in a tight local relationship with some other element of the idiom, as described above.

In Korean, one of our classifier languages, the facts are similar: two classes of V-PP idioms are attested, and the P is always a crucial part of the idiom. In the first class, illustrated by the following data, there are many idioms in Korean in which the V, P, and NP are all fixed.

(39)   a.    son   aney/*eyse/*twieyse neh-ta
               hand inside/from/back     put.in-Decl
               'to take control of'

       b.    nwun-ey ttuy-ta
               eye-in    to.be.seen-Decl
               'to stand out'

       c.    ankay sokey mwuthi-ta
               fog    inside be.buried-Decl
               'Facts are eventually not revealed'

       d.    pal-ey chay-ta
               leg-in  get.kicked-Decl
               'to be prevalent, widespread'

       e.    kolswu-ey      samuchi-ta
               bone.marrow-in pierce-Decl
               'to distress'

       f.    kwi-ey ilk-ta
               ear-in   familiar-Decl
               'to have heard of'

       g.    tok aney   mola-neh-ta
               jar  inside drive-put.in-Decl
               'to keep someone on a tight leash'

       h.    mwulmang-ey olu-ta
                fame-in       rise-Decl
               'to be a strong candidate'

       i.    cali-ey  nwup-ta
               place-in lie-Decl
               'to be ill'

j. ip    aneyse payngpayng tol-ta
mouth inside  spinningly   turn.around-Decl

'to be on the tip of one's tongue'

k. son   aneyse cwumwulu-ta
hand inside  massage-Decl

'to take control of'

Example (39a) shows that the P is not allowed to vary: *aney*, 'inside' cannot be replaced with another P and still be intepreted idiomatically. The same holds for the rest of the examples in the data above.

Like English (37), the first class of V-PP idioms in Korean may also include another NP as an open slot. The following are some examples (these idioms all come from Kim 2015).

(40)　a. X-lul   kasum-ey/*ulo/*pwuthe   sayki-ta
X-Acc chest-in/by.means.of/from engrave-Decl

'to bear X in mind'

b. X-lul   nwun aphey twu-ta
X-Acc eye    front  put-Decl

'to confront/reach X'

c. X-lul   sonakwi-ey neh-ta
X-Acc webbing-in put.in-Decl

'to control/obtain X'

d. X-lul   ip-ey     tam-ta
X-Acc mouth-in contain-Decl

'to speak (about) X'

e. X-lul   hanul-ey mathki-ta
X-Acc sky-in    entrust-Decl

'to leave the fate of X to Heaven'

f. X-lul   ekkey-ey   ci-ta
X-Acc shoulder-in carry-Decl

'to take responsibility for X'

Korean, like English, also has the second class of V-PP idioms, where the V and the P are fixed by the complement of P is an open slot. Once again, the P is a crucial part of the idiom, and replacing it with some other P results in losing the idiomatic meaning.[13] (These idioms also come from Kim 2015; note that *-eykey* is used when the noun is animate and *-ey* is used when it is inanimate.)

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[13]These idioms all have the postposition *-ey(key)*, which is often used where some languages have dative case. A number of researchers have shown that *-ey(key)* patterns more like a postposition than a case marker. See, for example, O'Grady 1991, Urushibara (1991), Lee (1996).

(41) a. X-ey(key) chim-ul noh-ta
X-in(to) needle-Acc put-Decl
'to warn X'

b. X-ey(key) kwi-lul cwu-ta
X-in(to) ear-Acc give-Decl
'to overhear X'

c. X-ey(key) tol-ul tenci-ta
X-in(to) stone-Acc throw-Decl
'to criticize X'

d. X-ey(key) paykki-lul tul-ta
X-in(to) white.flag-Acc lift-Decl
'to give away X'

e. X-ey(key) kkoli-lul chi-ta
X-in(to) tail-Acc wag-Decl
'to seduce X'

f. X-ey(key) saykki-lul chi-ta
X-in(to) baby-Acc yield-Decl
'to increase X'

We can conclude from the idiom data in both English and Korean that V and P enter into a direct, local relation. This enables them to form part of an idiom. V and the nominal complement of a P do not enter into a direct relation, crossing but not involving the P. This is exactly what standard analyses of PPs would expect.

## 3.2 Idioms with CPs

As discussed at length above, a standard comparison for proponents of the DP Hypothesis is CPs. Nominals are supposed to be like clauses, with a sequence of functional heads. Above we saw that they behave very unlike each other with regard to selection. We now see the same thing with idioms.

Most strikingly, *there are no V-CP idioms*, in either English or Korean. We have been unable to find a single idiom of this form. Such an idiom might look like *say the wolves came*, maybe with a meaning like 'deceitfully pretend danger is nigh'. A possible example is *think X walks on water*, which is used, to mean 'view X as better than everyone else'. However, the verb *think* does not seem to be part of the saying here. People often also say, *in his mind, X walks on water*, or *X walks on water as far as she is concerned*. We have been unable to find an idiom where a verb forms an idiom with its CP complement. This is in striking contrast with V-NP idioms, which are common (note *cry wolf*, which is similar in meaning to the non-existent *say the wolves came*).

There *are* idioms in English that include CPs, those CPs are just not complements. There are a few idioms with finite CPs as adjuncts:

(42) a.     strike [while the iron is hot]

       b.     close the stable door [after the horse has bolted]

       c.     count X's chickens [before they hatch]

       d.     cross that bridge [when X comes to it]

       e.     be that [as it may]

       f.     [when hell freezes over]

       g.     [until the cows come home]

A few others include a non-finite CP, primarily as an infinitival relative:

(43) a.     NEG have a leg [to stand on]

       b.     NEG have a pot [to piss in]

       c.     a tough row [to hoe]
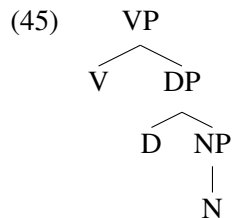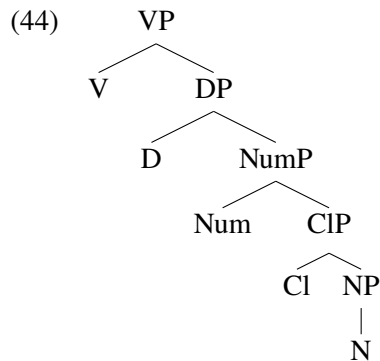
       d.     play hard [to get]

*Play hard to get* is the only example we have found where the CP might be a complement, but if it is a complement, it is complement to an adjective, not a V.

This discrepancy between CPs and nominals is striking in and of itself, but we can also note some facts about the CPs in the idioms that have them that will be relevant below. Most importantly, many of them are quite fixed. It is generally difficult to change anything within them. This is particularly true of the non-finite clauses, which seem to be completely fixed. Some of the finite clauses have dependent elements that vary with something in the matrix clause, like *X cross that bridge [when X comes to it].* Tense is also such a dependent element, being able to vary according to the matrix tense: *we crossed that bridge when we came to it*, *we struck while the iron was hot*, *they closed the stable door after the horse had bolted.* However, it is generally not so easy to change or add other functional elements, like modals or negation. Consider saying, *He struck while the iron wasn't hot.* This would be like replacing a lexical element, as in *He struck while the iron was cold*: it would be recognizable as working within the metaphor, but would be striking for departing from the usual form of the idiom. It can be done, but it is done for metalinguistic effect. We will see below that determiners behave very differently: they can be varied without disrupting the idiom in this way.[14]

## 3.3   Verb-Object Idioms: Predictions

Given what we have seen above, the DP Hypothesis leads to certain expectations. Consider the structures it posits for classifier languages and for determiner languages like English:

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[14]Some researchers have claimed that there is a locality constraint on idioms (Marantz 2001, Svenonius 2005). This is belied by the existence of the idioms in (42) and (43), which cross CP boundaries. One could not claim that the lack of V-CP idioms is due to a locality constraint, because CPs do enter into idioms, as adjuncts. Moreover, one could not claim that the V-CP/V-NP discrepancy in idioms follows from locality, because in most theories of locality, NPs constitute the same kind of local domain as CPs (cyclic nodes, phases, etc.). We believe that there is no locality constraint on idioms, there is just functional pressure for them to be small.

(44)

```
            VP
           /  \
          V    DP
              /  \
             D   NumP
                /    \
              Num     ClP
                     /  \
                   Cl    NP
                         |
                         N
```

(45)

```
        VP
       /  \
      V    DP
          /  \
         D    NP
              |
              N
```

Given what we saw above with prepositions, these analyses would expect that there will be no verb-object idioms where V and N are fixed, but the functional elements D, Num, or Cl can be freely varied and are not part of the idiom. We might even expect idioms where V and D, Num, or Cl are fixed, but N can vary, since we saw this with prepositions. The only way to construct an idiom involving V and N in the structures above is to build a sequence of local relations: V enters into a tight relationship with D, D with Num, Num with Cl, Cl with N. In English, V has to enter into a relationship with D in order to enter into a relationship with N. Verb-object idioms are therefore predicted to always involve D (and Num and Cl).

Note that it is not entirely clear what analyses like the above have to say about cases where the functional elements are absent. For instance, it is common in some classifier languages for objects to be bare Ns. There are two options: (1) the functional elements are present but null; (2) they are simply missing, and the maximal projection of the object is NP. On either option, if an idiom consists simply of V and N, analyses like the above predict that functional elements will not be able to appear. Either the null version is what V is in a relation with, and the null version should be obligatory, in the version where the functional heads are present but null; or the V can enter into a local relationship with a bare NP, in which case adding any functional elements will disrupt this local relation.

In contrast with the DP Hypothesis, the NP Hypothesis predicts that verb-object idioms do not need to involve the functional elements D, Num, Cl. The verb enters into a local relationship with N directly, and V-N idioms excluding D, Num, Cl should be common. The functional elements *may* be included, the same way idioms may include optional elements. For instance, adjectives can be included in V-NP idioms, as in *beat a dead horse*. Here *dead* is in a local relationship with *horse* and *horse* is in a local relationship with *beat*. Since D, Num, Cl do enter into local relationships with N, we might find cases where they are part of the idiom, but they should also be able to freely vary in other idioms, the way quantifiers, adjectives, and

possessors were shown to above.

We now turn to testing these predictions, beginning with the simpler case of English, and then turning to two classifier languages, Korean and Vietnamese (illustrating with Korean). As we will see, the expectations of the NP Hypothesis are upheld, while those of the DP Hypothesis are not.

## 3.4   English Verb-Object Idioms

Previous work on idioms in English has already noted that determiners can often vary. Nicolas's (1995) corpus study of adjectival modification noted many instances of non-canonical determiners being used, for instance *having the biggest field day of all* for *have a field day*. Lebeaux (2000) claimed that idioms divide into two groups depending on whether the determiner is fixed or not (but we will see below that nearly every determiner can vary). Svenonius (2005) suggested that determiners are never part of verb-object idioms, as did Bruening (2010a, note 11). One indication of this is that, as noted by Moon (1998, 114), verb-object idioms with a determiner can often be rephrased as compounds without one:

(46)   a.   break the ice — ice-breaker (Moon 1998, 114)

   b.   bury the hatchet — hatchet-burying (Bruening 2010a, note 11)

The most extensive study to date is that of Riehemann (2001). Riehemann investigated a corpus of English for attested uses of idioms, and one of the questions she asked was whether determiners can vary. For our purposes, we divide the idioms she investigated as follows:

(47)   *Determiners found to vary:*
| | | | | | |
|---|---|---|---|---|---|
| a. | bite the bullet | j. | keep tabs on | s. | rear its head |
| b. | break the ice | k. | lead the field | t. | run the show |
| c. | break the mold | l. | level the playing field | u. | saw logs |
| d. | bury the hatchet | m. | lose face | v. | sound the death knell |
| e. | call the shots | n. | lose ground | w. | spill the beans |
| f. | cat out of the bag | o. | make waves | x. | strike a chord |
| g. | clear the air | p. | pay dividends | y. | take a back seat to |
| h. | close ranks | q. | pay the piper | | |
| i. | deliver the goods | r. | raise hell | | |

(48)   *Determiners not found to vary:*
| | | | |
|---|---|---|---|
| a. | hit the ceiling/roof | e. | make tracks |
| b. | hit home | f. | shoot the breeze |
| c. | kick the bucket | g. | speak volumes |
| d. | look the other way | h. | take a powder |

As can be seen, the majority of idioms (25 out of 33) permit the determiner to vary.

Here we add to Riehemann's corpus study by investigating additional idioms and by taking a second look at the group that she found not to vary in her corpus. We use the internet as a corpus, again focusing on

verb-object idioms, although we also include some V-P-NP and V-NP-P idioms. We do not include the ones that Riehemann already found to vary, because we already know that they do. We divide up the idioms we look at according to the determiner that appears in their canonical form, as follows. For reasons of space, we include our findings immediately in the form of some attested examples. We begin with idioms that have a definite determiner in their canonical form:[15]

(49)  *Definite*

  a. bark up the wrong tree: "Have you ever barked up a wrong tree?"; "you're barking up another wrong tree"

  b. beat the bushes for: "I beat some bushes for your contact details"

  c. beat around the bush: "Lets beat around this bush no more"; "You people beat around more bushes than an army of gardeners"

  d. bite the big one: no other determiner found

  e. bite the dust: no other determiner found

  f. bring home the bacon: "I still need to bring home some bacon occasionally."

  g. buy the farm: "many of us thought that perhaps Osama might, indeed, have bought that proverbial "farm" in the caves a few months ago"

  h. call off the dogs: "we might possibly call off some dogs and remain adequately safe AND informed"

  i. fly the coop: "Jones flew that coop and headed out of town to friendlier climes"

  j. foot the bill: "Who should foot that bill?"; "taxpayers must foot another bill"

  k. give someone the cold shoulder: "At least 1 industry is about to give Google a big cold shoulder"

  l. hit the ceiling/roof: no other determiner found

  m. jump the gun: "I figured, why not just jump that gun"; "Before you all jump another gun,"

  n. kick the bucket: no other determiner found

  o. look the other way: "The law enforcement agencies looked some other way because, after all, these were hijabi sisters just uttering some harmless little religious prayer in Arabic"

  p. pull the plug on: "It would take tremendous strength and belief in yourself to pull yet another plug on a relationship,"

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[15]It should be noted that in many of our examples where determiners and numerals are changed, the change has an effect on the interpretation of the verbal event. This effect can be specification to the particular case at hand ("let's beat around this bush no more"); indicating less than total involvement ("We might possibly call off some dogs"); repetition ("taxpayers must foot another bill"); and even anaphora ("the producer did the same number on B.J."). The literature on adjectival modification in idioms argues that many or even all instances of such modification are actually modification of the whole VP or event (see Ernst 1981 and Nicolas 1995). It might be that determiner variation does something similar. Regardless, the determiners, numerals, etc. can be altered, while the verb and the noun cannot.

q.  pull the wool over X's eyes: "Tol' ye to go home to the ole man, an' pull some more wool over his eyes!"

r.  rock the boat: "This'll rock some boats"

s.  sell down the river: "you just sold yourself down another river"

t.  shoot the breeze/the bull: "let's shoot some breeze"

u.  toe the line: "Pravda began to toe a line approved by Stalin and Kamenev"

As can be seen from these examples, determiners are not generally fixed in idioms. Of the idioms with the determiner *the*, we were able to find instances of different determiners with all but *bite the big one*, *bite the dust*, *hit the ceiling/roof*, and *kick the bucket*. We also found instances of different determiners with *look the other way* and *shoot the breeze*, which Riehemann (2001) did not find varying in her corpus.

Idioms with indefinite determiners showed a similar malleability, other than *come a cropper* and *have a ball*:

(50)  *Indefinite*

a.  beat a dead horse: "it's moronic for a public figure to beat that dead horse of a joke"

b.  carry a torch for: also occurs frequently as "carry the torch for"

c.  cast a pall on: "first let me cast the usual pall on proceedings"

d.  come a cropper: no other determiner found

e.  cut X some slack: "let's not cut him too much slack"

f.  do a number on: "the producer did the same number on B.J."

g.  drop X a line: also occurs as "drop X the line"

h.  have a ball: no other determiner found

i.  have a bone to pick with: "I have no bone to pick with you"

j.  have an axe to grind with: "I myself have no axe to grind on this matter,"

k.  NEG hold a candle to: "The 1996 version with Leonardo DiCaprio and Claire Danes was okay, but it doesn't hold even ONE candle to this version."

l.  sing a different tune: "Betcha if your family was threatened by their actions you'd be singing some different tune."

m.  smell a rat: "Do we all smell many rats connected with this legislation?"

n.  turn over a new leaf: "The Bulletin herewith announces its intention to turn over many new leaves."

There are also a number of idioms that have a bare singular noun in their canonical form. Of these, Riehemann (2001) found *lose face*, *lose ground*, and *raise hell* occurring with other determiners. We find the same with other such idioms, except for *hit home*:

(51)  *Bare singular*

    a.    close up shop: "international banks have not totally closed up the credit shop"

    b.    eat crow: "Critics of 'new' hunting season may have to eat some crow"

    c.    eat humble pie: "Obama might eat some humble pie,"

    d.    hit home: no other determiner found

    e.    make head or tail of: "He spoke so rapidly that I could make no head or tail of his speech"

    f.    mean business: "This guy means some serious business."

    g.    pass muster: "creativity has to pass some muster as practical"

    h.    talk turkey: "Let's talk some serious turkey!"

    i.    turn tail: "the defenders would just turn their tail and run the other way"; "That's a very good moment to turn the tail and run like crazy"

Finally, idioms that take bare plurals in their canonical forms can also appear with other determiners, as Riehemann (2001) found for *close ranks*, *keep tabs on*, *make waves*, *pay dividends*, and *saw logs*. We also find other determiners with *make tracks* and *speak volumes*, which Riehemann did not find in her corpus:

(52)   *Bare plural*

    a.    build castles in the air: "Mother Meade had built many castles in the air."

    b.    cut corners: "This is What Happens When Companies Cut Too Many Corners and Don't Give a Damn"

    c.    make tracks: "so me and Walker made some quick tracks to the truck while Ben held rear guard for us"

    d.    speak volumes: "Which speaks some volumes about Pocock"; "my silence speaks no volumes"

To summarize, we looked at 48 idioms in addition to the 25 that Riehemann found occurring with other determiners. Only seven were not found with determiners other than those that appear in their canonical form: *bite the big one*, *bite the dust*, *hit the ceiling/roof*, *kick the bucket*, *come a cropper*, *have a ball*, and *hit home*. This means that in 66 out of 73 verb-object idioms, or 90%, the determiner is not fixed.

Moreover, even the idioms that seem to be completely fixed and to only occur with a designated determiner, like *kick the bucket*, turn out not to crucially involve the determiner. From this idiom has been derived an NP *bucket list*, from which has been derived a verb *to bucket-list* ('to do things that are on your list of things to do before you kick the bucket, because you expect to kick the bucket soon'). The determiner has simply vanished when the NP part of the idiom has been extended to new idioms. Obviously, it was not a crucial part of the idiom. Similarly, determiners are dropped from idioms in headlines and in telegraphic speech ("Fred Phelps Kicks Bucket," "Joan Rivers Bites Big One," "Officials Look Other Way on Immigration"). In the case of *bite the big one* and *look the other way*, the determiner can be dropped without affecting the meaning of the idiom, but the adjective cannot.
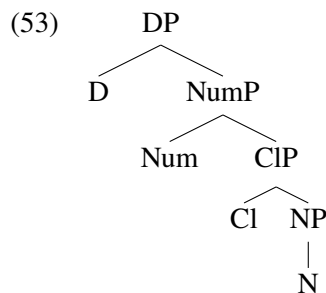
This pattern indicates that verbs relate directly to Ns, not to Ds. This means that the head of the sister of V must be N, not D. The same holds for P: its sister must be a projection of N, not D. Determiners in

idioms behave like optional modifiers (adjectives, possessors, relative clauses), which can be left out, added, or replaced with another; the typical rules for determiner use will determine what is appropriate.[16] Most crucially, determiners do not behave like the functional element P in PPs.

## 3.5  Classifier Languages: Korean and Vietnamese

We also carried out a study of verb-object idioms in two classifier languages, Korean and Vietnamese. The full data are included in the appendices. Here we present the findings and selected examples illustrating those findings, using Korean only. The same pattern holds in Vietnamese, but we omit the data for reasons of space.

First, some background. Korean is an agglutinating SOV language whose nominal phrase includes demonstratives, numerals, and classifiers which may occur in that order. To remind the reader, a frequently proposed structure for such nominal phrases is the following:

(53)
```
            DP
          /    \
         D     NumP
              /    \
            Num    ClP
                  /   \
                 Cl    NP
                        |
                        N
```

This structure could be applied straightforwardly to Korean, given nominal phrases like the following:

(54)    ku  twu kay-uy  mokkeli          [Dem-Num-Cl-N]
        that two Cl-Gen necklace

        'those two necklaces'

However, word order in Korean is relatively free, and Num-Cl-Dem-N order is also possible:

(55)    twu kay-uy  ku  mokkeli          [Num-Cl-Dem-N]
        two Cl-Gen that necklace

        'those two necklaces'

Possessors and adjectives can also be added, in various different word orders:

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[16]Even the structure can be changed: for instance, open possessor slots, as in *cook X's goose*, can be rephrased as postnominal PPs under the right conditions: "Aviation officials may *cook the goose of* opponents of policy of culling birds to make airways safer" (headline). Note that here a determiner has sprung up, where the usual formulation of the idiom has a prenominal possessor and no determiner. This follows the pattern of determiner use in the language generally. This makes sense only if verbs select NPs, not DPs.

(56) a. kunye-uy panccakinun ku twu kay-uy mokkeli      [Poss-Adj-Dem-Num-Cl-N]
     she-Gen sparkling     that two Cl-Gen necklace

     'those two sparkling necklaces of hers'

   b. panccakinun kunye-uy ku twu kay-uy mokkeli      [Adj-Poss-Dem-Num-Cl-N]
     sparkling     she-Gen that two Cl-Gen necklace

     'those two sparkling necklaces of hers'

   c. kunye-uy twu kay-uy ku panccakinun mokkeli      [Poss-Num-Cl-Dem-Adj-N]
     she-Gen two Cl-Gen that sparkling     necklace

     'those two sparkling necklaces of hers'

There are a few constraints on order. Only Num and Cl may follow the head N. In addition, nothing may intervene between Num and Cl.

When Num and Cl appear to the right of the head N, the case that the whole NP receives follows the classifier and may also appear on the head N, as in (57a). Either or both case morphemes can be dropped under certain conditions. In contrast, when Num and Cl precede the N, the Cl is marked with genitive case, while the case the whole NP receives is marked on the head N (57b).

(57) a. Yuna-ka mokkeli(-lul) twu kay(-lul) po-ass-ta.      [N-Num-Cl]
     Yuna-Nom necklace(-Acc) two Cl(-Acc) see-Pst-Decl

     'Yuna saw two necklaces.'

   b. Yuna-ka twu kay(-uy) mokkeli-lul po-ass-ta.      [Num-Cl-N]
     Yuna-Nom two Cl(-Gen) necklace-Acc see-Pst-Decl

     'Yuna saw two necklaces.'

The order in (57a) is generally regarded as quantifier floating (see Lee 1989, Kang 2002, Ko 2005 and the references cited there). We will ignore this order for the most part, as all but one of the idioms we discuss occur in the order with genitive case in (57b).[17]

There has been disagreement in the literature on the structure of the nominal phrase in Korean (and Japanese, a syntactically similar language). Some works argue that there is no DP structure in Korean and Japanese (e.g., Fukui 1986, Lyons 1999, Fukui and Takano 2000); however, Park (2008) and Jung (1998) analyze Korean nominals as DPs. Our data indicate that the DP Hypothesis is incorrect for Korean, and indeed in general.

Turning to idioms, our main sources for Korean idioms are (i) the online dictionary of the National Institute of the Korean Language (`http://stdweb2.korean.go.kr/section/idiom_list.jsp`); (ii) the electronic version of the Korean dictionary (`http://www.sejong.or.kr/`); (iii) a print idiom dictionary of the Korean language (Lee, Koo, and Lee 2008); and (iv) naturally occurring data found on the internet using Google and Naver searches. For Vietnamese, we used an online dictionary of idioms (`http:`

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[17]Classifiers can also be dropped, especially in colloquial speech and with human nouns. See Lee and Ramsey 2000 and Sohn 2001.

`//tudienthanhngu.com/`), a print dictionary of Vietnamese idioms and proverbs (Hoang 1997), and natural data found on the internet using Google, from different contexts including forum conversations, blogposts, and online newspapers. Examples found on the internet were checked with a number of native speakers of both languages.

Our survey of idioms reveals that a large number of idioms in both Korean and Vietnamese involve a verb and its object, and the object may also include various functional and non-functional elements. We divide object-verb idioms in Korean and verb-object idioms in Vietnamese into two classes according to the occurrence of functional elements. Class 1 includes object-verb or verb-obect idioms with bare nouns and no functional elements, while Class 2 includes object-verb or verb-object idioms with one or more functional elements in the object (out of Dem, Num, Cl).[18]

In what follows, we give a few examples of each class with the idiom's use in a sentential context. The idiomatic parts are italicized; in each case, only those parts are fixed, while everything else can be altered.

First, Class 1 involves object-verb idioms in Korean and verb-object idioms in Vietnamese where the idiom includes only N and V. This class of idioms is well attested in both Korean and Vietnamese. Appendix A lists sixty-five Korean idioms in Class 1 and Appendix B lists sixty-nine idioms in Vietnamese, and we do not pretend that these lists are exhaustive. Here we illustrate with a small handful of examples from Korean (the full list is in Appendix A):

(58)  Class 1: N-V

   a.   choysen-ul taha-n  ne-eykey *tol*-ul     *tenci*-l          salam-un   amwuto eps-ul
        best-Acc   do-Adn you-Dat stone-Acc throw-Adn.Fut person-Top anyone  not.exist-Acc
        kes-i-ta.
        Nml-Cop-Decl
        'There would not be anybody that criticizes you who did your best.' (throw a stone = criticize)

   b.   il.il.kwu     kwukup.cha-ka     *cho*-lul    *tatwu*-e   talli-ko iss-ta.
        one.one.nine emergency.car-Nom second-Acc dispute-e run-ko  exist-Decl
        'The 119 ambulance is running in a very urgent situation.' (dispute a second = be very urgent)

   c.   moin    salam-tul-i     motwu *hye*-lul   *naytwul*-ess-ta.
        gathered person-Pl-Nom all     tongue-Acc wave-Pst-Decl
        'All gathered people were very astonished.' (wave a tongue = get astonished)

   d.   ku cong-un    *temtheki*-lul *ssu*-ko   cwukim-ul tangha-yess-ta.
        that servant-Top worry-Acc   wear-and killing-Acc suffer-Pst-Decl
        'That servant got all the blame, and was killed.' (wear worry = get blamed)

   e.   na-nun *chel.phan*-ul *kkal*-ko     ku namca-eykey kopaykha-yess-ta.
        I-Top   iron.pad-Acc spread.out-and that guy-Dat        propose-Pst-Decl

---

[18]Vietnamese has a large number of idioms on the pattern V N V N (something like a serial verb construction), but, to keep matters simple, we only look at V N idioms in the data in the appendix. However, because there are so few idioms of Class 2, with a functional element included as part of the idiom, we do bring in a few V N V N idioms in the discussion of that group in the appendix.

'I was brash, and proposed to the guy.' (spread out iron pad = be brash)

The idioms of Class 2 include N, V, and one or more of the functional elements of the nominal phrase (D, Num, Cl). We have found a relatively small number of idioms of Class 2, namely fourteen in Korean and seven in Vietnamese. All fourteen of these Korean idioms include a numeral as part of the idiom, and one consists of Num-Cl-N-V. We have not found any idioms which seem to include a demonstrative. Some examples follow. Examples (59a–59b) are examples of idioms consisting of Num-N-V; the rest are listed in Appendix A. Example (60) is the sole Num-Cl-N-V idiom, in which a verb, the head N of its object, and a numeral accompanied by a classifier are interpreted idiomatically.

(59)   Class 2: Num-N-V

    a.   *han wumwul*-man kkwucwuni *pha*-sey-yo.
        one well-only     steadily     dig-Hon-Pol

        'Focus on one matter!' (dig one well = focus on one matter)

    b.   ne-nun sinsa-losse   ettehkey *twu mal*-ul   *ha*-ni?
        you-Top gentleman-as how     two word-Acc do-Q

        'How can you as a gentleman change your mind so easily?' (do two words = change one's mind easily)

(60)   Class 2: Num-Cl-N-V

    Hana-nun mikwuk-eyse *twu mali thokki*-lul  motwu *cap*-ass-ta.
    Hana-Top America-in   two Cl   rabbit-Acc all      catch-Pst-Decl

    'Hana accomplished what she has planned in America.' (catch two rabbits = accomplish)

Note that adverbs and quantifiers can be added in between the idiomatic object and verb (59a, 60). Additionally, inflectional endings like those on the verb, and case markings on the object, vary according to the context; for instance in (59a), the accusative case marker is replaced with the morpheme meaning 'only'.

As noted above, the DP analysis of nominal phrases makes the prediction that in idioms functional elements should be fixed. This is not what we find, however. Among the sixty-five idioms of Korean provided in Appendix A, we find that twelve can occur with functional elements; twenty-six can occur with non-functional elements; and seven can take both functional and non-functional elements in the NP. Adding these additional elements does not alter the idiomatic interpretation under consideration; rather it often adds an implication that a part of an idiomatic meaning is emphasized to some extent (as noted in note 15).

The same is attested in Vietnamese. Of the group of 69 V-N idioms in Appendix B1, we find that (i) 28 idioms are immutable and fixed; (ii) 12 idioms can add non-functional elements like possessors and adjectives; (iii) 4 idioms can have functional elements (D, Num, Cl) added to them, but not non-functional modifiers; and (iv) 25 idioms can include both functional and non-functional elements in the NP.

To illustrate, some N-V idioms in Korean can occur with demonstratives. The Korean idiom *hanulul cciluta*, 'to poke a sky', allows a demonstrative to precede the noun, retaining the idiomatic interpretation:

(61)  i    mal-ul    tha-nun  swunkan, yelepwun-uy messulewum-un **ce**   *hanul*-ul *cci*-lul
      this horse-Acc ride-Adn moment  you.Pl-Gen niceness-Top    that sky-Acc poke-Acc
      kes-ip-nita.
      Nml-Cop-Decl.Def

      'At the moment you ride on this horse, you will look much nicer.' (poke a sky = have a great
      force.)

Next, some N-V idioms can add numerals and classifiers in the NP. For example, in Korean the bare
noun *khongpap*, 'rice with beans', can be preceded by the numeral *yeltays*, 'fifteen', along with a classifier:

(62)  ku  nom-un **yel.tays kulus-uy** *khong.pap* cengto    *mek*-eya   cengsin chali-l
      that guy-Top ten.five bowl-Gen rice.bean   thereabouts eat-should mind    wake.up-Adn.Fut
      nom-i-ta.
      guy-Cop-Decl

      'That guy will be a normal person if he goes to prison around fifteen times.' (eat rice with beans
      = go to prison)

Additionally, some N-V idioms in Korean permit a wh-Num *myech*, 'how many', followed by the classi-
fier *kay*, a general classifier used to count inanimate objects; the result is a rhetorical wh-question.

(63)  a.  tangsin halapeci-kkeyse-nun totaychey wuli nala    yeksa-ey **myech    kay**-uy
          your    grandfather-Hon-Top ever      our  country history-in how.many Cl-Gen
          *hoyk*-ul   *ku*-u-si-n       kes-ip-nikka?
          stroke-Acc draw-u-Hon-Adn Nml-Cop-Q.Def

          Literal: 'How many strokes did your grandfather ever draw to our country's history?'; id-
          iomatic: 'Your grandfather made a number of great contributions to our country's history.'

      b.  kulekeyo. cengmal **swusip kay**-uy *hoyk*-ul    *ku*-u-sy-ess-ta       malha-yto
          Yes       really  tens   Cl-Gen stroke-Acc draw-u-Hon-Pst-Decl tell-even.if
          kwaen-i          ani-kess-sup-nita.
          exaggeration-Nom Neg-Fut-Hon-Decl.Def

          Literal: 'Yes, even if we say that he drew tens of strokes, that is not an exaggeration at all';
          idiomatic: 'Yes, he made numerous contributions.'

Such a question can also be answered by adding a numeral and classifier, as in (63b).[19]

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[19]Note that it is also possible for the object part of the idiom to be a null anaphor in examples like (63b). See Nunberg, Sag,
and Wasow (1994) on anaphora with idiom chunks. This possibility still falls within the restriction to local relationships: in (63b),
the verb *ku*, 'draw', is in a local relationship with the object, *hoyk*, 'stroke', and triggers an idiomatic interpretation; it can do this
when 'stroke' is accessed indirectly through a null or overt pronoun that activates the same lexical content as *stroke*, too. The same
holds for anaphora with VPs in English, as when A says, "The shit will hit the fan tonight," and B replies, "Yes, it certainly will."
In B's reply, the null VP still invokes the same lexical items and the same selectional relations, giving rise to the same idiomatic
interpretation.

More examples of Korean N-V idioms with demonstratives, numerals, and classifiers added are given below. We assume, based on Sohn (2001, 353), that a quantifier like *motun*, 'every', is category Num.

(64)  a.  Lee sacang-i **motun** *santhong*-ul *kkay* noh-ass-ta.
Lee boss-Nom every   container-Acc break put-Pst-Decl

'The boss Lee ruined everything.' (break a container = ruin)
(example modified from Tongeun Shin 2013, *The Wabper*

  b.  emma-ka    atul-hantey **yang** *son*-ul    ta *tul*-ess-ta.
mother-Nom son-Dat      both  hand-Acc all hold.up-Pst-Decl

'The mother gave up her son.' (hold up hand = give away/up)

  c.  kwucheycekulo malha-myen kimyohan senswu-nim-kkeyse    keyim-kye-ey **han** *hoyk*-ul
specifically      tell-if       kimyohan player-Hon-Nom.Hon game-field-in one  stroke-Acc
*ku*-u-sye-ya        ha-pnita.
draw-u-Hon-should do-Decl.Def

'Specifically speaking, the player Kim, Yohan should make a crucial contribution to the game field.' (draw a stroke = make a crucial contribution)

  d.  kyengki-uy sung.phay-nun    **ku** *ttwukkeng*-ul *yel*-e-pwaya al-ke-ya.
game-Gen   victory.defeat-Top that lid-Acc        open-e-try   know-Fut-Int

'We will know the result of the victory or defeat of the game once the game is done.' (open lid = find out a result)

If the N in an N-V idiom is countable, a numeral and classifier can be added:

(65)  han salam-i    **yele**    **kay**-(uy) *kamthwu*(-lul) *ssu*-nun   kes-un    po-ki    coh-ci
one person-Nom numerous Cl-Gen   hat-Acc        wear-Adn Nml-Top see-Nml good-ci
anh-ta.
Neg-Decl

'It does not look good that one person has a lot of authority.' (wear a traditional hat = have authority)

Notice that the addition of functional elements (e.g., totality expressions, numerals, and wh-words) makes the idiomatic interpretation become more emphatic and prominent in both Korean and Vietnamese. Different functional elements can be added to make the emphasis stronger or weaker. An example was the answer to the rhetorical question in (63b), where the addressee answers the question by specifying the number of strokes. The effect of this is to intensify the idiomatic interpretation.

For comparison, many idioms in Korean and Vietnamese also permit optional modifiers like adjectives and possessors to be added. Examples from Korean follow:

(66)  a.  kutul-un sikminci thongchi-ey **saylowun/cainhan** *makak*-ul    *tulenay*-ess-ta.
they-Top colony   reign-in     new/mean        horse.leg-Acc bring.out-Pst-Decl

'They disclosed the hidden/mean details of their colonization.' (bring out a horse leg = dis-close hidden details) (https://prezi.com/schunikn6saj/presentation/)

b.    ne-nun **emma(-uy)** *sok*-ul      elmana    *kulk*-eya     elun-i      toy-kess-ni?
     you-Top mother(-Gen) stomach-Acc how.much scratch-indeed adult-Nom become-Fut-Q

'How much do you have to worry your mother to become an adult?' (scratch stomach = make someone worry)

It is also common to find that some idioms can add both lexical non-selected elements (adjectives and possessors) and functional elements (demonstratives or numerals). The following examples illustrate such manipulations to idioms in Korean:

(67)    a.    **i**    **cakun** *kan*-ul    elmana     *coli*-ess-nun-ci.
           this small   liver-Acc how.much boil.down-Pst-nun-End

'I have been very nervous.' (boil down liver = be very nervous)

b.    Kim sacang-i    **motun telewun** *temtheki*-lul *ssu*-ko     saimha-yess-ta.
     Kim boss-Nom every    dirty      worry-Acc   wear-and resign-Pst-Decl

'The boss Kim had all the blame shifted on to himself and resigned.' (wear worry = get blamed)

c.    na Kim.sicang-i     **pwuceng kongcikca-uy motun** *ssi*-lul    *malli*-kess-ta.
     I   Kim.mayor-Nom corruption official-Gen    every   seed-Acc dry-Fut-Decl

'I, the mayor Kim, will get rid of all the officials' corruptions.' (dry seeds = get rid of)

This kind of addition is also widely attested in Vietnamese; as mentioned earlier, out of the 69 idioms that consist only of V and a bare N, we found a total of 25 that permit both lexical elements (adjectives and possessors) and functional elements (demonstratives or numerals) to be added in the NP. Examples are given in the appendix. Another 4 permit just functional elements. This is 29 that permit D, Num, Cl to be added without disrupting the selectional relationship between V and N that is necessary for the idiomatic meaning. The predictions of the DP Hypothesis do not appear to be correct. Rather, functional elements pattern with non-functional elements like adjectives and possessors in not being fixed in verb-object idioms.

The conclusion that we draw is that numerous idioms with a bare N in both Korean and Vietnamese do permit functional elements to appear with the N, without affecting the availability of the idiomatic reading. The prediction of the DP Hypothesis (that D, Num, Cl would not be able to occur) is not correct. The functional heads D, Num, Cl rather seem to pattern like non-selected adjectives and possessors, which are also typically not part of object-verb idioms but can be added to them. They do not pattern like Ps, which are always fixed.

We now turn to Class 2, the object-verb idioms in Korean and the verb-object idioms in Vietnamese that include one or more of D, Num, Cl as part of the idiom. As noted above, in Korean we have found fourteen idioms in Class 2, listed in Appendix A2. In Vietnamese, we have found only seven idioms of this type, listed in Appendix B2.

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In Korean, all fourteen idioms in Class 2 include a numeral; one also adds a classifier. All fourteen, it turns out, permit the numeral to be replaced with another numeral or to be left out if the conditions are right. Once again, manipulating the idiom in this way typically intensifies the idiom. In the following examples, the numeral 'two' can be replaced with 'three', and 'one' with 'two':[20]

(68)  a.  Hana-nun mikwuk-eyse *twu mali thokki*-lul motwu *cap*-ass-ta.
        Hana-Top America-in two Cl rabbit-Acc all catch-Pst-Decl

        'Hana accomplished what she had planned in America.' (catch two rabbits = accomplish)

    b.  phalli-uy sashiptay wekhing-mam **sey** *mali thokki*-lul *cap*-ta.
        Paris-Gen forties working-mother three Cl rabbit-Acc catch-Decl

        'Working mothers in their forties in Paris accomplish many things.'
        (`http://www.ohmynews.com/nws_web/view/at_pg.aspx?CNTN_CD=A0001334135`)

(69)  a.  *han wumwul*-man kkwucwuni *pha*-sey-yo.
        one well-only steadily dig-Hon-Pol

        'Focus on one matter!' (dig one well = focus on one matter)
        (`http://www.passg.com/board/board.php?type=view&seqno=1299&BRDCODE_CHR=001&page=`
        `&search_select=&keyword=&brd_type=sugang`)

    b.  **twu** *wumwul pha*-nun cwung.ki-tul
        two well dig-Adn middle.business-Pl

        'Small and medium-sized business are focusing on more than one thing.'
        (`http://www.fnnews.com/news/201303181734385875`)

We provide two more examples below to show that idioms that include a numeral permit that numeral to be replaced with another:

(70)  a.  ne-nun sinsa-losse ettehkey *twu mal*-ul *ha*-ni?
        you-Top gentleman-as how two word-Acc do-Q

        'How can you as a gentleman change your mind so easily?' (say two words = change one's mind easily)

    b.  sinsa-losse ettehkey *twu mal* **sey** *mal* **yele** *mal*-ul *ha*-ni?
        gentle.man-as how two word three word many word-Acc do-Q

        'How can you as a gentleman change your mind so easily?' (literal: 'say two words, three words, many words')
        (similar example at `http://news.kukmin.tv/news/articleView.html?idxno=828`)

(71)  a.  Chelswu-nun *yang tali*-lul *kelchi*-n-ta.
        Chelswu-Top both leg-Acc span-Pres-Decl

        'Chelswu is a two-timer.' (span two legs = date more than one person at a time)

---

[20]An anonymous reviewer disputed some of the data in this section, so we provide some links to naturally occurring examples.

b. seysang pwulkongphyeng.ha-ci. nwukwu-n **sey** *tali* **ney** *tali*-to *kelchi*-ko
world unfair.do-End someone-Top three leg four leg-even span-and

pwulep-ta.
jealous-Decl

'The world is unfair. Some people date with even three or four partners at one time, and I am jealous of it.' (literal: 'span three legs, four legs')
(similar example at `http://news.zum.com/zum/view?id=029201307087742103&t=0&cm=newsbox&v=2`)

Numerals can also be left out, and a possessor like the reflexive *casinmanuy* inserted instead:

(72)  a.  *han wumwul*-man kkwucwuni *pha*-sey-yo.
one well-only steadily dig-Hon-Pol

'Focus on one matter!' (dig one well = focus on one matter)

b.  **casin.man-uy** *wumwul*-ul *pha*-sip-si-o.
self.only-Gen well-Acc dig-Hon-Hon-Imp

'Focus on only one thing!' (example modified from Chelswun Lim 2014, *Il cwuilmaney paywunun sacanghak impmwun*

These examples show that functional elements that typically occur in certain idioms can be omitted, and they can also have other functional elements intervene between them and the selecting verb. As stated above, this is inconsistent with the predictions of the DP Hypothesis for classifier languages, which predicts that functional elements will not be able to vary in object-verb or verb-object idioms.

In Korean, the one idiom that includes a classifier does not permit that classifier to be replaced with another:

(73)  *twu mali*/*calwu *thokki*-lul cap-ta
two Cl/Cl rabbit-Acc catch-Decl

'to accomplish' (literal: 'catch two rabbits')

However, this is a fact about classifiers, not idioms. A literal sentence with the noun 'rabbit' also only permits one classifier:

(74)  Mina-ka twu mali/*calwu thokki-lul cap-ass-ta.
Mina-Nom two Cl/Cl rabbit-Acc catch-Pst-Decl

'Mina caught two rabbits.'

It is therefore not surprising that the classifier cannot be changed in the idiom, either. (One thing to note about idioms is that nouns that are part of idioms always have the classifier that is appropriate to them in their literal use.)

To sum up the findings regarding Class 2, idioms that include a V, N, and one or more of D, Num, Cl can actually have the functional elements replaced or left out in many cases. These idioms do not behave like V-PP idioms, where P is always fixed. We also find no cases where D, Num, or Cl are fixed while the N can vary, in contrast with V-PP idioms.

## 3.6 Summary Regarding Idioms, and a Possible Response

Our survey of idioms in Korean and Vietnamese reveals the same patterns that we saw in English: verb-object idioms and object-verb idioms consist for the most part only of V and N, and functional elements can be added or changed in between, contrary to the predictions of the DP Hypothesis. We also find that idioms that appear to include one of D, Num, or Cl can often have those elements replaced with another or left out.[21] Additional functional elements that are not part of the idiom can also be added. These findings are inconsistent with the DP Hypothesis, where the only local relationship that exists between a verb and its object is between the verb and the functional projections. Importantly, verb-object idioms do not behave like V-PP idioms. We take this to indicate that the functional heads in the nominal do not dominate NP the way they do in PPs.

Now, a proponent of the DP Hypothesis might try to explain our data by claiming that functional elements are free to be excluded from idioms, and in general are. This idea could be wedded either to the local relation theory that we advocated, or perhaps to a theory where idioms are underlying constituents (where possessors and modifiers might be introduced by functional elements, and hence can be excluded from the idiom). In the local relation account, a chain of local relations would hold from V through D, Num, Cl, to N, such that V and N can be interpreted idiomatically, but D, Num, and Cl do not have to be a fixed part of the idiom because they are functional heads. (Svenonius 2005 offers a theory similar to this.)

The problem with this alternative is that it is inconsistent with the behavior of PPs and CPs in idioms. Such a view predicts that there ought to be idioms that consist of a verb and the nominal object of its complement preposition, excluding the preposition. That is, the verb and NP would be fixed, but the preposition in between could vary. Along with 'beat around the bush', one should be able to 'beat in the bush' or 'beat through the bush', but such examples do not occur. As we found above, there are no idioms where V and N are fixed, while the P in between is not. In contrast, V-(NP)-P idioms, with an open slot for the complement of the P, are common. This is the exact opposite of what this alternative predicts.

This alternative also expect numerous V-CP idioms, consisting of a matrix verb plus the lexical content of its complement clause, minus all of the functional elements in the embedded clause in between. As we saw above, there is no such idiom. Idioms, then, constitute yet another case where clauses and nominals are not parallel at all. As just noted, V-N idioms, minus the functional material of the nominal phrase, are common. V-V idioms, minus the functional material in the clausal complement of the first verb, are conspicuously absent. Moreover, if the possessor in the nominal were really structurally analogous to the clausal subject, we ought to expect numerous V $X_{subject}$ V idioms, with an open slot for a subject, the same

---

[21]According to Kishimoto (2008, note 5), Japanese object-verb idioms do not allow demonstratives, numerals, classifiers, or adjectives at all. Only a bare N is ever allowed. Even this is inconsistent with the DP Hypothesis, since the DP Hypothesis requires that Vs be able to enter into local relations with functional elements.

way there are numerous V X$_{\text{possessor}}$ N idioms, with an open slot for a possessor (*get X's goat*, *fill X's shoes*). There are no V X$_{\text{subject}}$ V idioms. This discrepancy is totally unexpected in the DP Hypothesis.

While idioms tend not to include functional material, we believe that this is only a tendency, not a grammatical principle. Prepositions, in particular, are common, as are negation and non-finite *to*. Importantly, positing this hypothesized tendency will not help to salvage the DP Hypothesis: the DP Hypothesis still has no explanation for how a verb could enter into a local relationship with an N, ignoring all the functional projections in between.

# 4 Capturing Facts in the NP Hypothesis

We have seen that the DP Hypothesis is simply incompatible with the facts of selection and idioms. On the other hand, most of the literature of the last few decades on syntactic phenomena within the noun phrase has been couched within the DP Hypothesis. One might naturally think that any successes that have been achieved would require that hypothesis, and could not be captured in the NP Hypothesis, leaving us in a bind. In this section we demonstrate that this is not the case. In fact, most results are neutral between the two hypotheses and analyses that have been offered within the DP Hypothesis can be transferred without change to the NP Hypothesis. We demonstrate this here, concentrating on influential proposals and data that have been argued to require the DP Hypothesis. We also show that recent investigations of head movement also favor the NP Hypothesis.

## 4.1 Semantics and Licensing Empty Ds

We begin with the influential proposal that NPs are basically predicates that become arguments only in combination with Ds (Szabolcsi 1987, Longobardi 1994; cf. Chierchia 1998). It is a straightforward matter to transfer this hypothesis to the NP structure. There is no reason D has to be the head of the whole nominal in order to perform this function:

(75)

NP e
D $\langle\langle e,t\rangle,e\rangle$    $\overline{\text{N}}$
|
N
$\langle e,t\rangle$
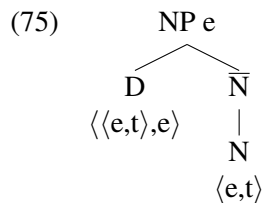
Compare generalized quantifier theory (Barwise and Cooper 1981), where an object quantifier is semantically a function that takes the V as its argument. In no theory of syntax does that make the object the head of the VP.

Longobardi (1994) also proposes that certain languages have null Ds that perform the function of turning a predicate into an argument. According to Longobardi, these null Ds require licensing through lexical government, typically by a verb. If one wished to maintain this theory, again it would not require the DP Hypothesis. In most theories of head government, a head may govern the specifier of its complement:

(76)

```
        V̄
       ╱╲
      V   NP
         ╱╲
        D   N̄
        Ø   |
            N
```
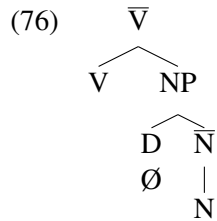
Since there is no barrier to head government between the V and the specifier of its complement, the V can license the null D here.

In other words, every aspect of Longobardi's theory is entirely neutral between the DP Hypothesis and the NP Hypothesis. The only exception is head movement, which we discuss below.

## 4.2 Pronouns as Ds

Other influential recent work has investigated the structure of pronouns cross-linguistically, building on Postal's (1966) arguments that pronouns have the distribution of Ds, not Ns (e.g., Elbourne 2001, Déchaine and Wiltschko 2002, Kratzer 2009). Again, most of the results of this work can be captured straightforwardly in the NP Hypothesis. For instance, analyzing pronouns as Ds does not require the DP Hypothesis, as the following illustrates:

(77)

```
          NP
         ╱╲
        D     N̄
    he/she/…   |
               N
```
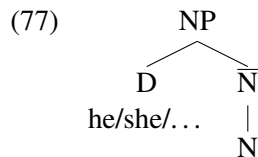
For Elbourne (2001), e-type pronouns are the result of NP ellipsis, stranding D. This is possible in the structure above: what would be stranded is the D, exactly as the specifier of CP is stranded in sluicing (Ross 1969). For Kratzer (2009), some features of pronouns start out in N, while others (specifically, [def]) start out in D. This can be stated in the structure above, too; the only difference is that the head movement from N to D that Kratzer suggests (p.222) could not take place in the NP structure. See more on head movement below.
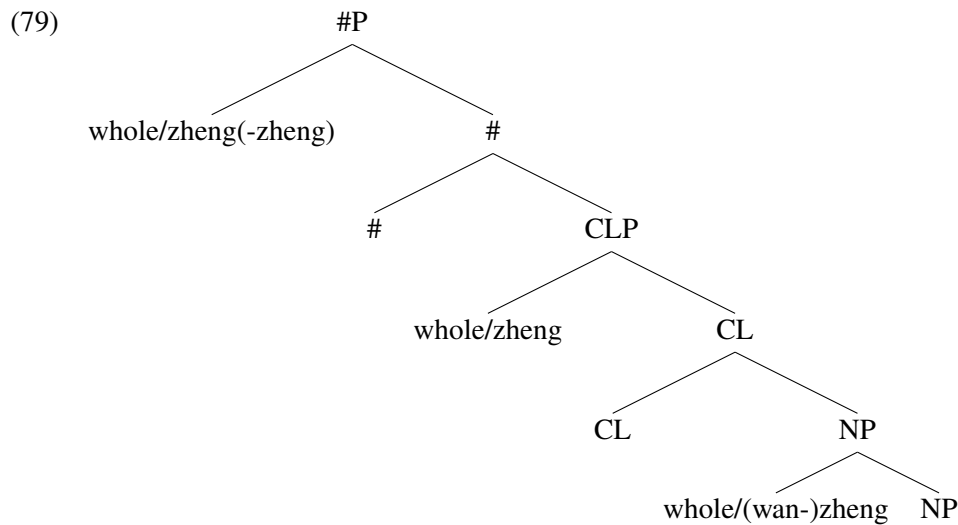
Déchaine and Wiltschko (2002) was mentioned briefly above; they hypothesize a very articulated structure with multiple functional projections (DP, ΦP, and NP). Some pronouns have the full range of projections, others only some of them. As discussed above, this is incompatible with the facts of selection, and so we reject it. This does not mean, however, that pronouns could not have varying levels of functional structure; that structure would just have to be located within a projection of N, as follows:

(78)

```
        NP
       /  \
      D    N̄
          / \
         Φ   N̄
             |
             N
```
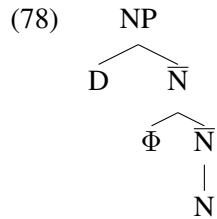
Again, DP analyses can generally be reformulated as NP analyses, if that is viewed as desirable.
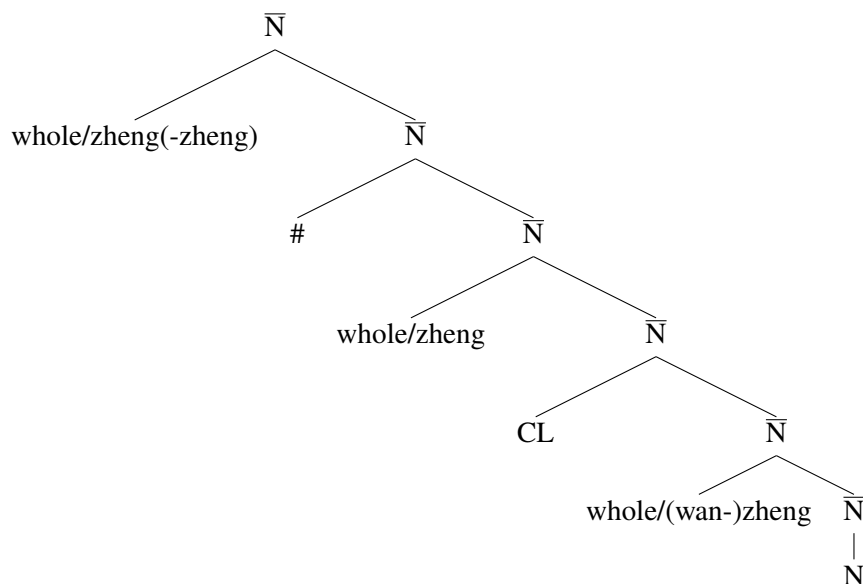
## 4.3 A Classifier Example

We now make the same point with a recent analysis involving a classifier language. Liao (2015) analyzes English as having the same classifier structure as Chinese at an abstract level, and different locations within this structure explain different readings of the modifier *whole* and its counterpart in Chinese. The structure Liao proposes is the following:

(79)

```
                          #P
                         /  \
          whole/zheng(-zheng)  #
                              /  \
                             #    CLP
                                 /   \
                          whole/zheng  CL
                                      /  \
                                    CL    NP
                                         /  \
                            whole/(wan-)zheng  NP
```

If *whole* or its counterpart in Chinese modifies CL, then a part-related reading obtains, but if it modifies either # or NP, then the reading is a whole-related one. Liao provides an account of this in both languages given the above structure.

These results remain wholly unaffected if the structure above is simply transformed into the NP structure:

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(80)

```
                        N̄
              ╱                    ╲
   whole/zheng(-zheng)            N̄
                          ╱             ╲
                         #              N̄
                                 ╱           ╲
                           whole/zheng        N̄
                                        ╱          ╲
                                       CL           N̄
                                            ╱            ╲
                                  whole/(wan-)zheng       N̄
                                                          │
                                                          N
```

In other words, analyses that have been expressed in terms of the DP Hypothesis are generally neutral between the DP Hypothesis and the NP Hypothesis (see also footnote 4 on the analysis of "small nominals" in Pereltsvaig 2006).

## 4.4  Head Movement

As far as we can see, the one aspect of DP analyses of nominal structure that is incompatible with the NP Hypothesis is head movement from N to D. Head movement is thought to only move a head to the next immediately c-commanding head; N-to-D movement therefore requires that D take NP as its complement. N could not move to D in the NP structure, because a head cannot move to its own specifier (or any specifier).

N-to-D movement has been posited in numerous languages. It has been argued to take place in the Romance languages (e.g., Bernstein 1993, Cinque 1994, Longobardi 1994, Dobrovie-Sorin 1987 as cited by Bernstein 2001), in Scandinavian languages (Delsing 1988, 1993; Taraldsen 1990, among others), and in Semitic languages (e.g., Ritter 1988, 1991).

However, more recent work has argued that N-to-D movement is *not* the right analysis, for any language. For instance, Cinque (2005) argues that there is no head movement inside nominals; if there were, word order typology could not be accounted for (see also Cinque 2010). For Scandinavian, Hankamer and Mikkelsen (2005) argue that N-to-D movement is not the right account of the word order possibilities (see also Embick and Marantz 2008). The Romanian facts have also been argued to require a different account (Dimitrova-Vulchanova 2003), as have the Hebrew and Arabic data (Shlonsky 2004). Lipták and Saab (2014) argue from ellipsis that there is no head movement in nominals in Spanish and other Romance languages. Alexiadou (2001), Willis (2006), and Georgi and Müller (2010) also argue against N-to-D movement.

We conclude from this recent research that there is no argument for the DP Hypothesis and against the

NP Hypothesis from head movement. Not only that, this recent literature actually indicates that the DP Hypothesis is on the wrong track. The DP Hypothesis expects N-to-D movement to exist, comparable to verb movement in clauses; if it truly does not, as all this recent work indicates, then the expectations of the DP Hypothesis are not upheld. In contrast, the NP Hypothesis predicts that N-to-D movement is impossible, and this prediction seems to be correct.

## 4.5   DP Languages Versus NP Languages

There is a current debate in the literature on the syntax of nominals concerning whether the structure of nominals is universal or not. This debate takes the form of one side arguing that nominals in all languages are or may be DPs (e.g., Longobardi 1994; Cinque 2005; Pereltsvaig 2007, 2013; Cyrino and Espinal 2015), while the other side argues that nominals in some languages are bare NPs, lacking DP structure, but nominals in other languages are DPs (Bošković 2008, 2012, 2014).

Our findings do not bear directly on this debate, although we have found that in one respect, a language with articles and no classifiers like English acts exactly the same as two languages without articles and full classifier systems. Rather, our findings indicate that if there is a difference between classes of languages, it could not be in the presence or absence of functional structure like DP. All of the data we have presented indicates that there is no such structure, in any language. We therefore suggest that the debate is not framed correctly. On the one side, Bošković's claim that languages with articles have DP while languages without articles do not simply could not be correct. On the other side, if there is a universal structure for nominals, it is NP, not DP. The functional elements must be dependents of NP (but it is possible that they do differ from language to language).

Throughout this section, we have seen that there are no impediments to the view that nominals in all languages are NPs. Analyses that have been stated in DP terms can be restated in NP terms. This is true of the references cited above for the universalist position, as well, much of which adopts Longobardi's view that D turns predicates into arguments (and codes referentiality). As we saw above, this view can be stated in NP terms with no loss. (See also note 4 on other functional elements within the NP.)

However, as just mentioned, the counter position could not be true: it could not be correct, as Bošković claims, that languages with articles have a DP structure, while languages without have only NP. Bošković does find that numerous syntactic facts seem to correlate with the presence of articles in a language; if these correlations are real, they are very significant and demand an explanation. However, Pereltsvaig (2013) notes numerous problems with both the empirical claims in Bošković's work and the theoretical analyses of the putative facts. To give one example, Bošković (2008, 2012) claims that only languages without articles allow left branch extraction from within the NP. Pereltsvaig (2013) argues that this is mistaken: apparent left branch extraction in languages like Russian is not extraction at all, and in fact left branch extraction is banned in those languages, too. Conversely, we note that Bošković's account of the lack of left branch extraction in article languages like English does not appear to be adequate. According to Bošković, a left branch in NP cannot escape the DP phase (in the phase theory of Chomsky 2000) in English because moving from the position of adjunct to NP to Spec-DP violates a ban on movement being too short (e.g, Bošković 1997, Abels 2003, Grohmann 2003). However, wh-phrase adjuncts in NP demonstrably *do* move to the left edge

of the nominal (e.g., Hendrick 1990):

(81) a. [NP[AP How expensive] a car] did you buy?
     b. [NP a [AP very expensive] car]

A wh-phrase as AP appears to the left of the indefinite article, while a non-wh-phrase AP appears to the right. Since the wh-phrase can get to the left edge of the nominal, it should be able to extract from it, in Bošković's system.[22]

   We conclude, first, that the empirical generalizations that motivate a difference between languages with and without articles are probably faulty, given the problems noted in Pereltsvaig (2013); and second, that the account of them in terms of some languages having DP and others just NP is problematic. We therefore see no impediment to a view of nominals where they are universally headed by the lexical head N.

## 4.6 Summary

This section has gone through some recent analyses of nominals that have been couched within the DP Hypothesis. We have shown that, quite generally, these accounts can be restated in the NP Hypothesis. The one component of such analyses that is not compatible with the NP Hypothesis is N-to-D movement, but recent research has indicated that this movement does not exist. This result favors the NP Hypothesis over the DP Hypothesis. We conclude that all of the facts unearthed so far are either neutral with respect to the two hypotheses or favor the NP Hypothesis. (For rejection of other arguments that have been given in favor of the DP Hypothesis, see Bruening 2009.)

## 5 Overall Conclusion

Our findings regarding selection and idioms are incompatible with the DP Hypothesis. Clauses and nominals are not parallel at all: clauses *are* headed by functional elements, but nominals are not. When verbs select nominals, they select only the head N. This is true in both classifier and non-classifier languages alike, and is consistent only with the NP Hypothesis, and not the DP Hypothesis. A comparison of verb-object idioms with V-PP and V-CP idioms pointed to the same conclusion: verbs enter into local relations with Ns directly, and not with functional heads like D, Num, and Cl.

   We also went through a sample of analyses that have been couched within the DP Hypothesis and showed that, in general, the facts of nominals and the important results that have emerged from analyzing them over the last few decades are neutral between the DP Hypothesis and the NP Hypothesis. Moreover, recent work on head movement upholds the prediction of the NP Hypothesis that N-to-D movement could not exist.

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[22]We also note that the explanations for different facts that Bošković proposes often contradict each other. For instance, Bošković claims that there is a difference between languages with articles and languages without in possible readings of the quantifier 'most'. In order to explain this difference, he posits covert movement of the superlative morpheme out of the DP in DP languages (see the diagram in Bošković 2012, 207, (83b)). This is exactly the type of movement he rules out in his account of left branch extraction.

Taking stock, the DP Hypothesis has no advantage over the NP Hypothesis, while the NP Hypothesis has a clear advantage with regard to selection, idioms, and head movement.

This does not mean that the NP Hypothesis can account for everything by itself. There are still numerous phenomena that are completely mysterious, like the facts of left branch extraction in English discussed briefly above. However, all such facts are equally mysterious on the DP Hypothesis. Since the DP Hypothesis is incompatible with well-motivated views of how selection operates in syntax, explanations of these mysterious facts should be pursued within the framework of the NP Hypothesis, not the DP Hypothesis. The widespread adoption of the DP Hypothesis was a mistake, and it should now be abandoned.

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