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Selectional Asymmetries between CP and DP Suggest that the DP Hypothesis is Wrong

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Abstract

The primary motivation for the DP Hypothesis has been a claimed parallel with the clausal domain, where functional projections (at least IP and CP) dominate the lexical projection of the verb. However, the claimed parallels are not real. Verbs that select for clausal complements only select things that are high in the clause, plausibly on C (questions vs. declaratives, finite vs. non-finite, etc.); they never select V. In contrast, verbs that select for nominal arguments only select for N, and never for the functional elements like D. In form selection, each head in the clausal domain determines the form of the head of its complement. In contrast, within nominals, it is N that determines the form of everything else. These asymmetries indicate that the head of the clause is C, but the head of the nominal is not D, it is N. A review of other arguments that have been given for the DP Hypothesis indicates that none of them are compelling.

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1 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), Szabolcsi (1987), Löbel (1989), and Olsen (1989). Payne (1993) argues against the DP Hypothesis, but the arguments have generally been ignored.

The primary motivation for the DP Hypothesis was 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 Infl(ection) 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.

One strand of this research develops the notion of an *extended projection* (Grimshaw, 2005 [1991]; van Riemsdijk, 1998). According to this idea, IP and CP are extended projections of the verb (V), while DP (and other functional projections) are extended projections of N. The two domains then have a lexical head (V and N), with extended functional projections dominating them. Again, clauses and nominals are taken to be entirely parallel.

This paper argues that the claimed parallel between clauses and nominals is illusory. Conceptually, the motivation for determiners heading a projection that takes a complement and a specifier has disappeared given the development of Bare Phrase Structure (Chomsky, 1995): we do not expect functional heads to have to project a complement and a specifier, and non-projecting heads are expected to exist. Empirically, clauses and nominals are not parallel in any way. In selection, they differ in that C is selected in clauses (and V never is), but N is in nominals (and D never is). In the determination of form, they differ in that each head determines the form of its complement head in clauses, but the form of everything in a nominal is determined by N. The conclusion is that N must be the head of the (extended) nominal projection; in contrast, V is not the head of the clause in any sense, the functional heads are (in particular, C).

All of the facts laid out here are well-known; proponents of the DP Hypothesis must address them. While I focus predominantly on English, I believe that the asymmetries are universal.

2 First Asymmetry: Complement Selection

Clauses and nominals differ in what is selected when a verb selects them (part of this argument against the DP hypothesis is made by Payne (1993)).

2.1 Clausal Complements

Verbs that select for clausal complements select only elements that are high in the clause, such as questions versus declaratives, finite clauses versus nonfinite clauses, and subjunctive versus indicative clauses:

(1) *Questions versus declaratives:*
    a.   Sue thinks that the world is flat.
    b.   * Sue thinks whether the world is flat.
    c.   * Sue wonders that the world is flat.

      d.   Sue wonders whether the world is flat.

(2) *Finite versus nonfinite:*

      a.   Bertrand wants the world to be flat.

      b. * Bertrand wants that the world is flat.

(3) *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 *inflected* verb, so Infl or Tense, that is selected, not the main verb:

(4)   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. If a verb selects a question, it always allows either finite or non-finite clauses:

(5) a.   I don't know whether or not to work on that. (Baltin, 1989:(52))

      b.   I don't know whether or not I should work on that. (Baltin, 1989:(53))

Payne (1993) (citing A. Zwicky) points out that subjunctives seem to be a 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 *that$_{Indic}$* and a distinct *that$_{Subj}$*, meaning that it is possible to maintain that selection of clauses involves only selection for C.

In other languages, verbs may select for V2 clauses (as in German; e.g., den Besten, 1983), or illocutionary force (exhortative in Korean, imperative in Japanese). In all such cases, what is selected is high in the functional layer of the clause, and plausibly located in 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 do not head the embedded CP, contra Rizzi, 1997). All of these can generally appear in any complement CP whose other functional elements they are compatible with.

I 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.

2.2 Nominal Complements

In contrast, verbs that select nominal arguments *never* select for particular determiners, or numbers, or possessors, or anything else. Generally, if a verb admits an NP, any sort of NP is allowed: quantificational, deictic with demonstrative, definite or indefinite, number, adjective, 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; there is also no verb that allows indefinite NPs but not definite ones:

(6) *Nonexistent selectional pattern:*

      a.   John glorped books. (Baltin, 1989:(35))

      b. * John glorped his books. (Baltin, 1989:(36))

(7) *Nonexistent selectional pattern:*

      a.   Samuel is streading a book.

      b. * Samuel is streading the book.

One possible case of this is kinship *have* (suggested by S. Tomioka):

(8) 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 (existentials) or definites (topics), but particular verbs do not (note that *have* in other uses allows definites).

Number is often selected in nominals:

(9) 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)

(10) a. The students met.
     b. * A student met.
     c. A student and a professor met.

But note that selection for number is always semantic, not syntactic, as shown by the semantically plural but syntactically singular (9c) versus the semantically singular but syntactically plural (9d). It is not clear that number should be represented as a functional head separate from N (as in Ritter, 1991); if it is, what is its content in (9c), where the noun is formally singular, and in (10c), where each of the two conjoined nouns is singular? It is more plausible to view semantic number as a property of the noun, given (9c).

So, in contrast with clauses, the functional elements are never selected in nominals. Given that the most common assumption regarding selection is that it is strictly local, and in fact is probably limited to a sisterhood relation (for recent discussion, see Landau, 2007), these selection facts indicate that the head of the CP is in fact C, but the head of the NP is not D, it is N.

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 I am 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 I am aware of is the double-headedness of Radford (1993). 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.

The third attempt at a fix that I am aware of has NP generated inside VP, and DP generated outside VP; the two are put together by movement of the NP (Sportiche, 1997 and other talks[1]). Addressing this theory would take far more than the space allowed here, and I will not attempt it.

3 Second Asymmetry: Form Determination

Clauses and nominals also differ in how the form of each element within them is determined. (This asymmetry is noted by van Riemsdijk (1998), but it is ignored in that paper and clauses and nominals are treated as equivalent in being extended projections, CP of V.)

3.1 Clausal Domain

In the clausal domain, form determination is downward: each head determines the form of the head of its complement. C determines I, and each auxiliary determines the form of the next:

(11) *C determines I (finite vs. nonfinite):*
     a. I would like for the Jamaicans to win.

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[1]http://www.linguistics.ucla.edu/people/sportich/papers/SplitDPsSplitVPs.pdf

      b.   I expect that the Jamaicans will win.

(12)   *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:

(13)   a.   I broke the vase.
      b.   I was breaking the vase (when you came in).
      c.   I have broken the vase.
      d.   I might break the vase.
      e.   I want to break the vase.

The only exception that I am 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 conclusion from selection that functional heads head the CP projection.

3.2 Nominals

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

(14)   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:

(15)   *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 could not be correct, however, because a noun will just be incapable of combining with functional elements that mismatch:

(16)   a.   these scissors
      b. * this scissors

But there are no cases of verbs that cannot combine with certain functional elements; for instance, there is no hypothetical verb *geat* that only has finite forms, and lacks a nonfinite one:

(17)   *Nonexistent verb:*
      a.   I think that he geats. (finite)
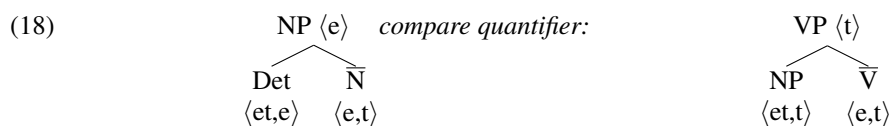   b. * I want to geat. (*nonfinite)

    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.

4 One Other Asymmetry, and a Note

One other asymmetry (pointed out to me by S. Tomioka) is that many languages lack a category of determiners, but none (so far as I know) lack something that can be identified as C. There is always something to mark embedded versus main clauses, questions versus declaratives, and so on.

This brings up another point, which is that the function of D is often claimed to be turning a predicate into an argument (e.g., Longobardi, 1994). But it seems odd to identify that function with the distinctions that are encoded by determiners (or "articles") cross-linguistically (e.g., Dryer, 2007). They typically have an *anaphoric* function, marking a nominal as previously mentioned in the discourse; or they mark nominals that are known to the speaker and hearer, or are inferable from context; or they mark specificity (a specific referent in the mind of the speaker). This seems to have little to do with predicates versus arguments.

Even if it is correct that D turns a predicate into an argument, this does not require the element doing the conversion to be the *head* of the phrase. It is generally accepted that semantic function-argument relations do not have to match syntactic head-complement/specifier relations. For instance, in generalized quantifier theory, a quantificational NP is a function taking the VP as its argument, but the NP is still an argument of the head V:

(18)　　　　　　　　　NP $\langle$e$\rangle$　*compare quantifier:*　　　　　VP $\langle$t$\rangle$

　　　　　　　　　　Det　　N̄　　　　　　　　　　　　NP　　V̄
　　　　　　　　$\langle$et,e$\rangle$　$\langle$e,t$\rangle$　　　　　　　　　$\langle$et,t$\rangle$　$\langle$e,t$\rangle$

There is no good reason, then, to view D as the head of the nominal projection, and the asymmetries with clauses noted above are good reasons not to.

5 Revisiting Arguments for the DP Hypothesis

Other arguments for the DP Hypothesis have of course been advanced; none of them are compelling. A survey of arguments can be found in Bernstein (2001).

5.1 X-Bar Theory

As discussed above, the idea that functional elements have to fit into the X-bar schema was a compelling argument for thinking that Ds have to have complements and specifiers. However, it is no longer with Bare Phrase Structure (Chomsky, 1995). In that theory, if a head does not select a complement or a specifier, it simply will not project them. Non-projecting functional heads are expected to exist.

5.2 Morphological Parallels

In many languages, possessors in nominals agree and are case-marked just like subjects in clauses:

(19)　*Hungarian* (Szabolcsi, 1983)

　　　a.　　az én-Ø　　　vendég-e-m
　　　　　　the 1.SG-NOM guest-POSS-1.SG
　　　　　　'my guest'

　　　b.　　(a) Mari-Ø　　vendég-e-Ø
　　　　　　(the) Mary-NOM guest-POSS-3.SG
　　　　　　'Mary's guest'

　　　c.　　Mari-Ø　　alud-t-Ø.
　　　　　　Mary-NOM sleep-PAST-3.SG
　　　　　　'Mary slept.'

If agreement and case are mediated by functional heads in clauses, this parallel suggests that similar functional heads are also present in nominal projections.

However, this evidence is offset by the many languages that mark subjects and possessors differently (like English). Moreover, in some languages where the morphological parallels exist, they are only morphological. Consider the Passamaquoddy data below:

(20)   *Passamaquoddy*
    a.   **k**-tus-**onu-wok**
        2-daughter-1.PL-3.PL
        'our (Incl) daughters'
    b.   **k**-nomiy-a-**nnu-k**.
        2-see-DIR-1.PL-3.PL
        'We (Incl) see them.'

Here, the order of the morphemes and the features encoded by the morphemes are the same on verbs and on nouns. However, the suffix *-(wo)k* marks the number of the head noun in the nominal case, but the number of the object on the verb. The head noun in the nominal is generally *not* thought to be structurally parallel to the verb's object in a clause, meaning that the syntactic agreement relations would have to be very different in the two cases. In addition, the order of the morphemes in the nominal is unexpected: the morpheme marking the number of the head noun is *outside* the morpheme marking the number of the possessor. I take this to show that the morphological parallels are *superficial*, and do not reveal deep structural properties. Instead, the parallels are probably a reflex of general economy principles: languages use the same grammatical elements for different functions.

5.3 Semantics: Arguments Versus Non-Arguments

Another argument for the DP Hypothesis comes from the view, described above, that D's function is to turn an NP predicate into an argument. Cross-linguistically, it is claimed, bare NPs, without determiners, are only used as predicates, but DPs, with overt determiners, are used as arguments. In other words, there are languages in which the presence of an article correlates with its use as an argument (Szabolcsi, 1987; Longobardi, 1994). This is only expected on something like the DP Hypothesis, it is claimed, combined with the view of D's function as creating arguments.

However, the correlation really does not go very far. There are many languages where bare singular NPs can be arguments, and there are even languages where predicates, too, require articles (English). In addition, as discussed above, even if the correlation were real, it would not require that D be the *head* of the nominal projection.

5.4 Syntax: Extraction

This argument for the DP Hypothesis is due to Szabolcsi (1983, 1987, 1994). In clauses, Spec,CP is an escape hatch for movement out of CP. It appears that in Hungarian, a possessor can only be extracted out of a left-peripheral position within the nominal projection (based on case marking). According to Szabolcsi, this indicates a nominal CP, parallel to the functional CP in the clausal domain.

Even if this is correct, it is not an argument for the DP Hypothesis. In Chomsky's recent Phase Theory (Chomsky, 2000), elements that need to extract have to get to the edge of their *phase* in order to be visible for operations outside the phase. If nominals are phases, elements will have to get to the edge of the nominal in order to extract further, regardless of what the *head* of the nominal is.

5.5 Syntax: Ellipsis

This argument says that it is possible to have a uniform theory of the licensing of ellipsis by heads if D is a head taking NP as its complement. For an overview and references, see Lobeck (2006). I

will not go into this argument in any detail, but will simply assert that it is a very weak argument; it appears that the class of items that license ellipsis inside nominal phrases is not syntactically uniform. For instance, the plural demonstratives (*these, those*) license ellipsis, but the singular ones (*this, that*) do not. (It also requires a stipulation about "strong agreement," since the possessive *'s*, thought to be D, licenses ellipsis, but the definite and indefinite articles do not. Yet *'s* shows no more agreement than the definite and indefinite articles.)

5.6 Syntax: Word Order

Probably the most important argument for the DP Hypothesis is a parallel between the relative position of the verb and its adverbs and the noun and its adjectives. In the clausal domain, this positioning is accounted for by head-to-head movement, of the verb to higher functional projections (e.g., Pollock, 1989). If similar word order variation in the nominal domain is to receive the same treatment, it requires a similar architecture; in particular, we need something like N-to-D movement. Head movement is thought to only move a head to the next immediately dominating head; N-to-D movement therefore requires that D take NP as its complement.

N-to-D movement has been argued to take place in the Romance languages (e.g. Bernstein, 1993; Cinque, 1994; Longobardi, 1994), in Scandinavian languages (e.g. Delsing, 1988, 1993; Taraldsen, 1990), in Hebrew (Ritter, 1988, 1991), and in Romanian (Dobrovie-Sorin, 1987, as cited by Bernstein, 2001).
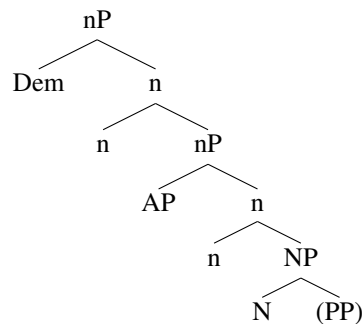
However, the existence of N-to-D movement is not uncontroversial. For instance, Cinque (2005) argues that there is no head movement inside nominals; if there were, word order typology could not be accounted for. For Scandinavian, Hankamer and Mikkelsen (2005) argue that N-to-D movement is not the right account of the word order possibilities (see also Embick and Marantz, 2008). The Romanian facts also have also been argued to require a different account (Dimitrova-Vulchanova, 2003). Given that there are counteranalyses in every case, the force of this argument is severely weakened.

6 Conclusion

None of the arguments for the DP Hypothesis are compelling. The asymmetries between clauses and nominals in selection and form determination show that the claimed parallels between clauses and nominals do not exist. They also indicate that the head of the nominal phrase is not D, but the head of the clause *is* C.

However, the pre-DP structure is not really adequate, either, which has probably accounted for the popularity of the DP Hypothesis since its proposal. I will suggest one possibility here, which I will not work out in any kind of detail. This is that the NP projection is dominated by nP Shells, where n is a head devoid of any content except for category (see Marantz, 1997:on nP):

(21)

```
                          nP
                         /  \
                      Dem    n
                            /  \
                           n    nP
                               /  \
                             AP    n
                                  /  \
                                 n    NP
                                     /  \
                                    N   (PP)
```

The various functional elements of the nominal, demonstratives, adjectives, articles/determiners, and so on, occupy specifiers of the nP shells, as in Cinque (2005). Obviously, this theory will need to be fleshed out and applied to real language data, but I will not do that here.

References

Abney, Steven Paul. 1987. The English Noun Phrase in Its Sentential Aspect. Doctoral Dissertation, Massachusetts Institute of Technology. Distributed by MIT Working Papers in Linguistics, Cambridge, Mass.

Baltin, Mark R. 1989. Heads and projections. In *Alternative Conceptions of Phrase Structure*, ed. M. R. Baltin and A. S. Kroch, 1–16. Chicago: The University of Chicago Press.

Bernstein, Judy. 1993. Topics in the Syntax of Nominal Structure across Romance. Doctoral Dissertation, The City University of New York.

Bernstein, Judy. 2001. The DP Hypothesis: Identifying clausal properties in the nominal domain. In *The Handbook of Contemporary Syntactic Theory*, ed. M. Baltin and C. Collins, 536–561. Oxford: Blackwell.

den Besten, Hans. 1983. On the interaction of root transformations and lexical deletive rules. In *On the Formal Syntax of Westgermania*, ed. W. Abraham, 47–131. Amsterdam: John Benjamins.

Brame, Michael. 1981. The general theory of binding and fusion. *Linguistic Analysis* 7:277–325.

Brame, Michael. 1982. The head-selector theory of lexical specifications and the nonexistence of coarse categories. *Linguistic Analysis* 10:321–325.

Chomsky, Noam. 1986. *Barriers*. Cambridge, MA: MIT Press.

Chomsky, Noam. 1995. Bare phrase structure. In *Government and Binding Theory and the Minimalist Program: Principles and Parameters in Syntactic Theory*, ed. G. Webelhuth, 383–439. Cambridge, MA: Blackwell.

Chomsky, Noam. 2000. Minimalist inquiries: The framework. In *Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik*, ed. R. Martin, D. Michaels, and J. Uriagereka, 89–155. Cambridge, MA: MIT Press.

Cinque, Guglielmo. 1994. On the evidence for partial N-movement in the Romance DP. In *Paths Towards Universal Grammar: Studies in Honor of Richard S. Kayne*, ed. G. Cinque, J. Koster, J.-Y. Pollock, L. Rizzi, and R. Zanuttini, 85–110. Washington: Georgetown University Press.

Cinque, Guglielmo. 2005. Deriving Greenberg's Universal 20 and its exceptions. *Linguistic Inquiry* 36:315–332.

Delsing, Lars-Olof. 1988. The Scandinavian noun phrase. *Working Papers in Scandinavian Syntax* 42:57–79.

Delsing, Lars-Olof. 1993. The Internal Structure of Noun Phrases in the Scandinavian Languages. Doctoral Dissertation, University of Lund.

Dimitrova-Vulchanova, Mila. 2003. Modification in the Balkan nominal expression: An account of the (A)NA: AN(*A) order constraint. In *From NP to DP, Volume 1: The Syntax and Semantics of Noun Phrases*, ed. M. Coene and Y. D'Hulst, 91–118. Amsterdam: John Benjamins.

Dobrovie-Sorin, Carmen. 1987. A propos de la structure du groupe nominal en Roumain. *Rivista di Grammatica Generativa* 12:123–152.

Dryer, Matthew S. 2007. Noun phrase structure. In *Language Typology and Syntactic Description, Volume 2: Complex Constructions*, ed. T. Shopen, 151–205. Cambridge: Cambridge University Press, second edition.

Embick, David, and Alec Marantz. 2008. Architecture and blocking. *Linguistic Inquiry* 39:1–53.

Freeze, Ray. 1992. Existentials and other locatives. *Language* 68:553–595.

Fukui, Naoki. 1986. A Theory of Category Projection and its Application. Doctoral Dissertation, Massachusetts Institute of Technology.

Fukui, Naoki, and Margaret Speas. 1986. Specifiers and projection. In *Papers in Theoretical Linguistics*, ed. Naoki Fukui, Tova R. Rapoport, and E. Sagey, volume 8 of *MIT Working Papers in Linguistics*, 128–172. Cambridge, Mass.: MITWPL.

Grimshaw, Jane. 2005. Extended projection. In *Words and Structure*, ed. Jane Grimshaw, 1–73. Stanford: CSLI. Originally circulated as a manuscript in 1991.

Hankamer, Jorge, and Line Mikkelsen. 2005. When movement must be blocked: A reply to Embick and Noyer. *Linguistic Inquiry* 36:85–125.

Hellan, Lars. 1986. The headedness of NPs in Norwegian. In *Features and Projections*, ed. P. Muysken and H. van Riemsdijk, 89–122. Dordrecht: Foris.

Hoekstra, Teun, and René Mulder. 1990. Unergatives as copular verbs: Locational and existential predication. *The Linguistic Review* 7:1–79.

Hogg, Richard M. 1977. *English Quantifier Systems*. Amsterdam: North Holland.

Hudson, Richard. 1984. *Word Grammar*. Oxford: Basil Blackwell.

Jackendoff, Ray S. 1972. *Semantic Interpretation in Generative Grammar*. Cambridge, MA: MIT Press.

Landau, Idan. 2007. EPP extensions. *Linguistic Inquiry* 38:485–523.

Lobeck, Anne. 2006. Ellipsis in DP. In *The Blackwell Companion to Syntax*, ed. M. Everaert and H. van Riemsdijk, volume 2, 145–173. Oxford: Blackwell.

Löbel, Elisabeth. 1989. Q as a functional category. In *Syntactic Phrase Structure Phenomena*, ed. C. Bhatt, E. Löbel, and C. Schmidt, 133–158. Amsterdam/Philadelphia: John Benjamins.

Longobardi, Giuseppe. 1994. Reference and proper names: A theory of N-movement in syntax and Logical Form. *Linguistic Inquiry* 25:609–665.

Marantz, Alec. 1997. No escape from syntax: Don't try morphological analysis in the privacy of your own lexicon. In *Proceedings of the 21st Annual Penn Linguistics Colloquium*, ed. A. Dimitriadis et al., number 4:2 in Penn Working Papers in Linguistics. Philadelphia: University of Pennsylvania.

Olsen, Susan. 1989. AGR(eement) in the German noun phrase. In *Syntactic Phrase Structure Phenomena*, ed. C. Bhatt, E. Löbel, and C. Schmidt, 39–49. Amsterdam/Philadelphia: John Benjamins.

Payne, John. 1993. The headedness of noun phrases: Slaying the nominal hydra. In *Heads in Grammatical Theory*, ed. G. G. Corbett, N. M. Fraser, and S. McGlashan, 114–139. Cambridge: Cambridge University Press.

Pollock, Jean-Yves. 1989. Verb movement, universal grammar, and the structure of IP. *Linguistic Inquiry* 20:365–424.

Radford, Andrew. 1993. Head-hunting: On the trail of the nominal Janus. In *Heads in Grammatical Theory*, ed. G. G. Corbett, N. M. Fraser, and S. McGlashan, 73–113. Cambridge: Cambridge University Press.

van Riemsdijk, Henk. 1998. Categorial feature magnetism: The endocentricity and distribution of projections. *Journal of Comparative Germanic Linguistics* 2:1–48.

Ritter, Elizabeth. 1988. A head-movement approach to construct-state noun phrases. *Linguistics* 26:909–929.

Ritter, Elizabeth. 1991. Two functional categories in noun phrases: Evidence from Modern Hebrew. In *Perspectives on Phrase Structure: Heads and Licensing*, ed. S. D. Rothstein, volume 25 of *Syntax and Semantics*, 37–62. New York: Academic Press.

Rizzi, Luigi. 1997. The fine structure of the left periphery. In *Elements of Grammar*, ed. L. Haegeman, 281–337. Dordrecht: Kluwer.

Sportiche, Dominique. 1997. Reconstruction and constituent structure. Talk presented at MIT, October 1997.

Szabolcsi, Anna. 1983. The possessor that ran away from home. *The Linguistic Review* 3:89–102.

Szabolcsi, Anna. 1987. Functional categories in the noun phrase. In *Approaches to Hungarian, Volume 2: Theories and Analyses*, ed. I. Kenesei, 167–189. Szeged: JATE.

Szabolcsi, Anna. 1994. The noun phrase. In *Syntax and Semantics, Volume 27: The Syntactic Structure of Hungarian*, ed. F. Kiefer and K. É. Kiss, 179–274. San Diego: Academic Press.

Taraldsen, Knut Tarald. 1990. D-projections and N-projections in Norwegian. In *Grammar in Progress: GLOW Essays for Henk van Riemsdijk*, ed. J. Mascaró and M. Nespor, 419–431. Dordrecht: Foris.

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