

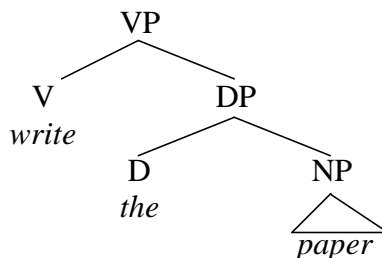
Extraction from Nominal Phrases in Polish and the Theory of Determiners

Gilbert C. Rappaport

1. Introduction

The Determiner Phrase (DP) hypothesis proposes that Noun Phrases (NPs) are complements of a functional category D(eterminer), which may be phonologically expressed, but need not be.* For example, the English Verb Phrase (VP) *write the paper* would have the following structure (with irrelevant details suppressed):

(1)



First developed in detail in Abney 1987, the DP hypothesis has been the focus of considerable research and controversy in Slavic linguistics.¹

The validity and form of the DP hypothesis is of paramount significance for linguistic theory. It represents a special case of a more general issue: the inventory, distribution, and nature of functional (i.e., non-lexical, sometimes called ‘non-substantive’) categories. If, as in much recent work in formal linguistics, we accept the program of limiting parametric variation among

*I wish to thank the following colleagues for their assistance, in varying forms: Piotr Banski, Wayles Browne, Mila Dimitrova-Vulchanova, John Dingley, Margarita Marinova, Krzysztof Migdalski, Risto Miikkulainen, Tomasz Orzechowski, Sandra Stjepanovic, Krzysztof Szafnicki, Piotr Wilczek, Ewa Willim, and three conscientious, albeit anonymous, reviewers.

¹The origins of the DP hypothesis precede Abney. See, for example, Szabolcsi 1983-4. The issues involved and basic arguments are reviewed, with special attention to Slavic, in Rappaport 2000b. DPs in various Slavic languages are assumed or supported, for example, in Babyonyshev 1998, Dimitrova-Vulchanova and Giusti 1998, Englehardt and Trugman 1998, 2000, Fowler and Franks 1994, Progovac 1998, and Rappaport 2000b. Arguing (to varying degrees) that these languages do not exhibit DPs are Corver 1992, Stjepanovic 2000, Willim 1997, 1998, and Zlatic 1997. Rozwadowska 1995, 1997 discusses the DP hypothesis, but frames her own detailed analysis of Polish NPs without it.

languages to the lexicon and assume that functional categories originate there and are inserted into syntactic structure ('merged') in the same way that lexical categories are, then the question of what justifies postulating a particular functional category in a given language becomes acute. While functional categories may in some cases be phonologically expressed (whether in the form of feature spell-out in situ or a lexical item moved to that position), they need not be, raising the question of what qualifies as evidence for their existence in the absence of such physical evidence. Furthermore, there are various modalities of the DP hypothesis. Should it extend to all NPs in all languages? If there is evidence for SOME DPs in a given language, does it follow that ALL NPs in that language are associated with a DP? Are there other functional categories associated with the lexical category Noun (e.g., Gender Phrase, Number Phrase, Case Phrase)? Is DP the projection of a D head taking an NP as its complement, or is it in some sense a super-projection, or extended projection, of a Noun head?

From an interesting and provocative cycle of articles by various linguists, there has emerged what we will call the *Parameterized DP (PDP) hypothesis*. This hypothesis, to be discussed in detail in the following section, suggests that a given language may or may not have DPs. Moreover, this parametric choice, which is associated with easily observable properties of utterances (i.e., the presence vs. absence of articles), has profound consequences for the kinds of extraction from nominal phrases permitted in the language.

As coherent, logical, and ultimately promising as this hypothesis is, we will argue here against it, on both empirical and conceptual grounds. While empirical discussion would properly cut across a range of languages, we will focus on contrasting English, a language predicted by hypothesis to have DPs, and Polish, a language similarly predicted not to. We will show that extraction from nominal phrases is more similar in English and Polish than the PDP hypothesis

predicts. Moreover, far from supporting the PDP hypothesis, the extraction facts of Polish argue FOR the existence of DPs in this article-less language, because the observational generalizations on extraction follow in a straightforward fashion from adopting the DP hypothesis for Polish. The logic of generative grammar assumed here indicates that the situation represented by Polish is in fact the default, and a parallel is documented in the literature for Romance. English, in contrast, reflects a marked parametric option. While the distinction could be (in an earlier theoretical framework) attributed to a distinction in whether or not a verb can govern into a DP complement, the paper concludes by developing a Minimalist account of extraction from nominal phrases, which attributes the fairly subtle array of differences between English and Polish more naturally to the presence versus absence of one feature (the ‘EPP feature’) in the determiner head itself.

2. Background on Extraction from Nominal Phrases and the PDP Hypothesis

In this section we first review some basic issues and definitions, and then develop the PDP hypothesis in some detail.

2.1 Pied-Piping and the Left Branch Condition

A *stacked nominal phrase* is one whose head noun takes as its complement either another nominal phrase or a prepositional phrase. Stacking can be recursive. A classic example of a stacked nominal (originating with Ross 1967/1986: 121), is given as (2a); the most deeply embedded nominal phrase, indicated in italics, can be extracted, as shown in (2b):

- (2) a. The government prescribes [the height of the lettering on the covers of *the reports*].
- b. ✓The reports, [*which* the government prescribes [the height of the lettering on the covers of *t*]] ...

In many such cases it is possible, or even preferred, to move not just the *wh*-word, but a stacked nominal phrase containing it (most naturally the maximal one). Ross termed moving a category properly containing a category targetted for movement *pied-piping*. Maximal pied-piping in the case of (2b) is illustrated in (2c):

- (2) c. ✓The reports, [[the height of the lettering on the covers of *which*] the government prescribes *t*] ...

Ross discovered that there are contexts in which pied-piping is obligatory. In English, targetting for movement a left branch or a constituent contained in a left branch requires that the category containing the maximal left branch be pied-piped along with the targeted constituent, a fact which Ross attributed to a constraint on extraction he termed the *Left Branch Condition* (LBC). The paradigmatic example discussed by Ross (1967/1986: 128) is given in (3):

- (3) a. We elected [*the boy's* guardian's employer] president.
 b. *The boy [*whose* we elected [*t* guardian's employer] president]...
 c. ✓The boy [[*whose* guardian's employer] we elected *t* president] ...

It is important to keep in mind that the LBC and pied-piping are strictly speaking distinct phenomena. The LBC defines a context in which extraction from a nominal phrase is impossible. The result could simply be ungrammatical; pied-piping happens to make an alternate derivation available. Conversely, pied-piping is often possible in contexts not involving the LBC (e.g., 2b).

Ross noted that the LBC is not universal: though valid, according to him, in English, German, Danish, French, Italian, and Finnish, it does NOT hold of Russian or Latin. As for predicting the distribution of the LBC across languages, Ross observed the following (1967/1986: 146): “As far as I know, it is only in highly inflected languages, in whose grammar the rule of *Scrambling* appears, that the Left Branch Condition is not operative, but it is not the

case that it is not operative in all such languages ... [e.g., Finnish - GR]. At present, therefore, I am unable to predict when a language will exhibit the Left Branch Condition and when not.”

The notion of linear order in the LBC has always been suspect, since it overlaps in most cases under consideration with distinctions in grammatical function and phrase structure. In English, a category performing the grammatical function of a determiner or modifier typically precedes its head, while a complement typically follows; furthermore, the *government* and *c-command* possibilities of constituents following a head are not the same as those preceding that head. For example, contrast the following two sentences:

- (4) a. *the boy, whose we found [*t* guardian] drunk, ...
b. ✓ the boy, who(m) we found [the guardian of *t*] drunk, ...

Is the difference in grammaticality the result of the difference in the linear position of the *wh* word in relation to the head of its nominal phrase before movement ([*whose guardian*] versus [*the guardian of whom*]) or a difference in configurational structure and/or grammatical function? Given that linear order would seem to be a relatively superficial phenomenon, assigned in Phonological Form as an artifact of the linearization of speech in time rather than in the syntax proper, it seems appropriate to pursue the latter course(s), although the question ultimately is an empirical one.

2.2 The PDP Hypothesis

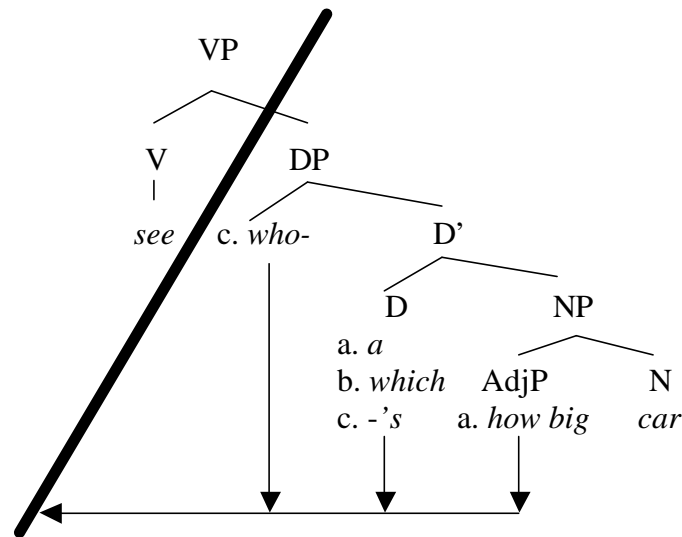
Corver 1992 developed an interesting and influential proposal that configurational structure, not linear order, decides whether or not nominal phrases permit the extraction of left branches, or *prenominal phrases*. In particular, Corver argued that it is the presence of a DP which blocks the extraction of prenominal phrases in some languages (e.g., English). It follows that languages which permit analogous extraction (he discusses in particular Polish and Czech) are

characterized by the absence of this functional category. Thus, the presence versus absence of a DP is a cross-linguistic variable, a parameter of variation.

Corver looked at three cases of prenominal extraction from the English nominal phrase:²

- (5) a. *How big did you see [a *t* car] ?
 b. *Which did you see [*t* car] ?
 c. *Whose did you see [*t* car] ?

(6)



In the case of (5a)/(6a), movement of the Adjective Phrase *how big* would result in a violation of both *Subjacency* and the *Empty Category Principle* (ECP). Under the *Barriers* theory of Chomsky 1986, both the NP and the DP would be barriers: NP is an inherent barrier because it is not governed by a lexical category (it is governed by the functional category D), and DP is a barrier by ‘inheritance’, i.e., it immediately contains an inherent barrier. Movement across two barriers is a violation of *Subjacency*. Conceivably the Adjective Phrase could escape *Subjacency*

²The discussion to follow is greatly compressed and definitions are simplified. There are myriad formulations of government and theories competing with the *Barriers* theory (see especially Kayne 1984 and Rizzi 1990). We cannot, obviously, discuss all of them, and follow Corver in limiting ourselves to the ‘*Barriers* theory’ within the *Principles-and-Parameters* approach to *Generative Grammar* (Chomsky 1986). An alternative account within the framework of the *Minimalist* program will be developed in section 6.

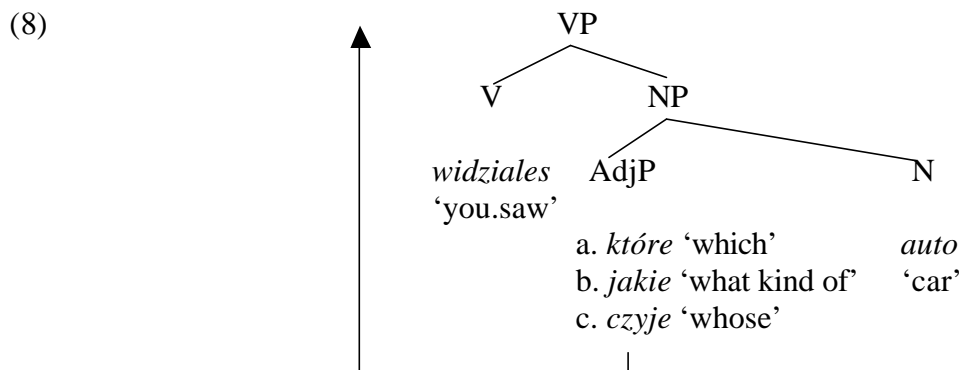
effects by adjoining to the NP or DP on the way. In any such event, however, the trace in the original position of the moved phrase would not satisfy the ECP, which requires that either of two conditions be satisfied. The trace must be lexically governed, which is not the case, since the phrase in question is an adjunct. Or the trace must be antecedent governed; for our purposes, it is sufficient to oversimplify and take this to mean that the trace is not separated by a barrier from its antecedent (a category which c-commands the trace and is coindexed with it). Either NP or DP could serve as this barrier, ruling out antecedent government. The movement of *which* in (5b)/(6b) is blocked by Subjacency and the ECP as well. Structure-preserving requirements prevent moving the head *which* to an intermediate specifier position, which is only for a maximal projection (this is sometimes called the Head Movement Constraint). Movement directly to the head Complementizer position outside the VP would result in a Subjacency violation, due to the necessity of crossing the boundaries of the VP and of the Tense Phrase (TP) assumed to contain it. The resulting trace would violate the ECP as well: it would be neither lexically governed nor antecedent governed. In accounting for (5c)/(6c), Corver follows Abney 1987 in maintaining that *whose* is not a constituent, since the word is spread over two categories: Specifier-of-D and the head D. Since only constituents can move, *whose* is frozen in situ.

None of these considerations applies to block movement in the corresponding Polish constructions:

- (7) a. ✓Które widziałeś [t auto] ?
which you.saw [t car]
'Which car did you see?'

- b. ✓ {Jakie /Jak duze} widziales [t auto] ?
 {what kind/how big} you.saw [t car]
 ‘{What kind of /how big a} car did you see?’
- c. ✓ Czyje widziales [t auto] ?
 whose you.saw [t car]
 ‘Whose car did you see?’

In the absence of the DP, the NP is not a barrier, since it is governed by a lexical item (the verb *widziales* ‘you saw’). Furthermore, Corver argues that the *wh* words in all three Polish sentences in (7/8) are Adjective Phrases, giving the following structure:³



In each variant, the trace of the AdjP is antecedent governed and therefore satisfies the ECP, since no barrier intervenes between the trace and its antecedent. Zlatic 1997 develops Corver’s idea that the existence of DPs is a parameter of variation across languages and argues at length that there is no evidence for a DP in Serbian/Croatian (similar in relevant respects to Polish and Czech, as discussed by Corver). As for predicting which languages have DPs and which do not, she suggests that DPs are found only in languages with articles.

There is another thread of research which broadens the range of constructions to be

³Although this assumption is required to make the PDP hypothesis work for non-DP languages, it has been made independently even for DP languages; cf. Giorgi and Longobardi 1991 who assume it for Italian, which the PDP hypothesis would predict to be a DP language.

considered. Culicover and Rochemont 1992 note that while the Barriers theory accounts for the impossibility of extracting a category from the adjunct of an NP in English (9a), that theory as presented in Chomsky 1986 had no account for why the adjunct itself could not move (9b):

- (9) You read [a book [on *the shelf*]].
- a. *What did you read [a book [on *t*]].
- b. *On what did you read [a book [*t*]].

They argue, however, that the the DP hypothesis made it possible to account for the ungrammaticality of (9b) within the Barriers theory without further stipulation. Stjepanovic 2000 relates this observation to the fact that Slavic languages do not observe the LBC and notes that languages seem to block the extraction of both prenominal and postnominal adjuncts from nominal phrases (English and Bulgarian) or permit both (e.g., Serbian/Croatian); cf. the following analogous constructions:

- (10) a. English:
- *Which are you reading [*t* book]?
- *[From which shelf] did Peter read [books *t*]?
- b. Bulgarian:
- *Koja cetesh [*t* kniga]?
- *Ot koja lavica Peter cete [knigi *t*]?
- c. Serbian/Croatian:
- ✓Kuju citaš [*t* knjigu]?
- ✓Sa koje police je Petar procitao [knjige *t*]?

That is, the LBC is a special case of a more general phenomenon, in which the deciding factor limiting extraction is not linear order, but configurational structure, as Corver 1992 argued.

Extraction of both prenominal and postnominal adjuncts in English is blocked by the presence of a DP. In languages permitting such extraction, there must not be a DP. And the languages illustrated in (10) are consistent with Zlatic's suggestion that the presence versus absence of a DP is correlated with the presence versus absence of articles, because Bulgarian (like Macedonian) has articles in the form of the nominal enclitic *-t/-ta/-to*.

Combining these threads makes it possible to formulate the PDP Hypothesis as follows:

- (11) a. The presence/absence of a DP is a parameter of cross-linguistic variation. In the absence of a Determiner, possessives and demonstratives must be adjectival in category.
- b. A language with articles has the functional category D; a language without articles may not (weak form) or does not (strong form) have D's.
- c. Adjuncts of NP (whether to the left or right of the head) cannot be extracted in languages with DPs (i.e., with articles), because a violation of Subjacency or of the ECP would result.⁴

This is a reasonable and appealing picture. To simply associate the LBC with the presence of DPs would be diacritic; i.e., ad hoc and circular. The PDP hypothesis properly attempts to generalize the LBC to other movement phenomena, to general constraints on movement, and to independent evidence that DPs exist.

The remainder of this paper is devoting to arguing against the PDP hypothesis and to developing an empirically and conceptually superior alternative which crucially incorporates DPs in Polish as much as in English. Our observations fall essentially into three categories, and

⁴The PDP hypothesis makes no direct predictions for extraction from complement and specifier positions. Such phenomena depend rather on auxiliary assumptions and definitions.

they will correspondingly be presented in the next three sections. In section 3 we look at the extraction of post-nominal adjuncts and complements from nominal phrases in argument position. We will argue that the basic situation is that neither is extractable. In each case, however, there are well-defined conditions under which extraction appears to be possible, probably the result of a restructuring rule such that the moved constituent is not actually extracted from a nominal phrase. The fact that the default is inextractability from NP argues FOR DPs in Polish, *pace* the PDP hypothesis. The same conclusion is suggested by the fact that predicate nominals permit extraction which is blocked from nominals in argument position, since there is independent evidence that predicate nominals need not be DPs even in languages which require DPs in argument positions. In section 4 we show that extraction is possible for possessors and external arguments of deverbal nouns, whether they express morphological agreement or not, and whether they are prenominal or postnominal. We will suggest that these categories are specifiers of a functional category Possessor, and attribute their extraction to their high structural position in the nominal phrase. In section 5 we look at other cases of extraction traditionally ascribed to the absence of the LBC, and see that they also involve, directly or indirectly, the specifier of a functional category associated with an NP: either the DP or a Quantifier Phrase. Thus, the conclusion of section 4 can be generalized to these cases as well. While a formal proposal is developed as the discussion proceeds in terms of the ECP and Barriers, more recent work within the Minimalist Program (Chomsky 1998, 1999) makes it possible to propose a simpler and conceptually preferable approach to the observed patterns of extraction.

3. Patterns of Extraction: Postnominal Adjuncts and Complements

The goal of this section is two-fold. First, we will evaluate the predictions that the PDP hypothesis makes for English and Polish. After distinguishing the effects of a well-known and

enigmatic restructuring phenomenon found in both languages, we will conclude that these two languages are much more similar in the relevant extraction properties than the PDP hypothesis would have it. Moreover, the pattern common to both languages suggests the presence of DPs in both languages. Second, to facilitate the comparison, we will along the way tailor some auxiliary assumptions and definitions associated with the ECP to the empirical material at hand. We begin with extraction from adjunct position (*Adjunct-of-N*), and then turn to extraction from complement position (*Comp-of-N*), in each case contrasting English and Polish.

3.1 Extraction from Adjunct Position

Recall what the PDP hypothesis predicts for extraction from *Adjunct-of-N*, under the assumption that English embeds its NPs in a DP and Polish does not. A trace in adjunct position is by definition not lexically governed. Consequently, it would satisfy the ECP only if antecedent governed. As explained in section 2.2, a DP would block the antecedent government of such a trace by creating intervening barriers of itself and of the NP it contains, inducing a subjacency violation as well. In the absence of a DP, there would be no barrier to prevent the antecedent government of a trace in adjunct position or to induce a subjacency violation, so that extraction should be permitted.⁵

Adjuncts-of-N in the form of a *PrepP* cannot be extracted in English:

- (12) a. *Where are you selling [books *t*]? *Answer: On that table.*
b. *When are you describing [a demonstration *t*]? *Answer: On Tuesday.*

While in (12) the *PrepP* is itself the target of movement, it is equally unacceptable to extract a

⁵It is well-known that extraction from definite Noun Phrases is much worse than from indefinite Noun Phrases (the so-called Definiteness Effect; see, for example, Diesing 1992 for discussion and references). We will control for this factor (and others) by limiting examples to extraction from indefinite (non-presuppositional) NPs in the direct object position.

PrepP by pied-piping when it is the complement of the PrepP which is actually targeted. Since pied-piping is generally more natural in relative clause constructions than interrogatives, we limit our examples to the former:

- (13) a. *The table on which you are selling [books *t*] is over there.
 b. *The electric company, from which the dog bit [a man *t*], is replacing the wiring.

Nor can Adjuncts-of-N in the form of bare-NP adverbs (see Larson 1985 for discussion) be extracted in English:

- (14) a. *Where did he describe [a rally *t*] for the newspaper? *Answer: Somewhere on campus.*
 b. *When are you ill from [a party *t*]? *Answer: Last night.*

These results are expected under the PDP hypothesis, as outlined above.

The PDP hypothesis predicts that Polish, without a DP, will permit the extraction of such adjuncts. In fact, however, analogous extractions of PrepPs are as bad in Polish as in English.

This is illustrated in (15) and (16):

- (15) *Gdzie kupiles [książke *t*] u Prószyńskiego? *Answer: Na tamtym stole.*
 where you.bought [book *t*] at Prószyński (book store) on that table
 ‘Where did you buy [a book *t*] at the Prószyński book store?’ *Answer: ‘On that table.’*
- (16) a. *Z czym postrzelili przed domem [chłopca *t*]? *Answer: Ze skakanka.*
 with what shot in.front.of house [boy *t*] *With jump.rope*
 (‘With what did they shoot [a boy *t*] in front of the house?’ *Answer: ‘With a jump rope.’*)
 b. *O jakich włosach poznales [dziewczyne *t*] na imprezie?
 with what.kind.of hair you.met [girl *t*] at party

Answer: O złotych włosach.
with golden hair

(‘With what kind of hair did you meet [a girl *t*]? *Answer: ‘With golden hair.’*)

And neither can bare-NP Adjuncts-of-N be extracted:

(17) a. **Jakiego wyznania podziwiasz [ludzi *t*] najbardziej? Answer: Buddyjskiego.*

what_{Gen} religion_{Gen} you.admire [people *t*] most Buddhist_{Gen}

(‘Of what religion do you admire [people *t*] the most?’ *Answer: ‘Of the Buddhist (religion).’*)

b. **Kiedy on opisał [demonstracje *t*] dla gazety. Answer: 6-go czerwca.*

when he described [demonstration *t*] for newspaper 6th_{Gen} of.June

(‘When did he describe [a demonstration *t*] for the newspaper?’

Answer: ‘On the 6th of June.’)

There are examples in which the extraction of Adjuncts-of-N are apparently permitted in Polish. For example, Willim 1998 cites the following grammatical constructions:

(18) a. *Od kogo czytasz [list *t*]?*

from whom you.read [letter *t*]

‘From whom are you reading [a letter *t*]?’

b. *Z kim nagrywasz [rozmowy *t*]?*

with whom you.record [conversations *t*]

‘With whom are you recording [a conversation *t*]?’

We propose assimilating such construction to parallel English cases known in the literature. For example, there are acceptable English constructions contrasting with (13):

- (19) a. The actor, about whom John read [a book *t*] ...
 b. The car in which you like [the gears *t*] ...

It has been suggested that there is no proper extraction from NPs at all (cf. the ‘NP Constraint’, discussed in Horn 1974 and Bach and Horn 1976), and that apparent cases (from so-called ‘quasi-NPs’) entail a restructuring of an NP so that a PrepP moves from being an NP constituent to a VP constituent, from which position it can be fronted. Cattel 1979 has shown that identifying which NPs are quasi-NPs is not an easy task; for example, contrast (19b) with (20):

- (20) *the car, in which you like [the girl *t*] ...
 *the car, on which you like [the wheels *t*] ...

While the precise conditions of the restructuring mechanism remain obscure, it is conditional (among other things) upon the choice of the verb; contrast the Polish examples in (18), for example, with (21):

- (21) a. *Od kogo zniszczyles [list *t*]?
 from whom you.destroyed [letter *t*]
 (‘From whom did you destroy [a letter *t*]?’)
 b. *Z kim starles na tasmie [rozmowe *t*]?
 with whom you.erased on tape [conversation *t*]
 (‘With whom did you erase on tape [a conversation *t*]?’)

Moreover, when these same NPs are isolated from the same verb found in (18), extraction is not possible:

- (22) a. *Od kogo czytasz [koniec listu *t*]?
 from whom you.read [end of.letter *t*]
 (‘From whom are you reading [the end of the letter *t*]?’)

- b. *Z kim nagrywasz [kazde slowo rozmowy t]?
 with whom you.record [every word of.conversation t]
 ('With whom are you recording [the beginning of a conversation t]?')

Thus, we assume that in the general case PrepP and bare-NP adjuncts to N cannot be extracted in either English or Polish. Apparent exceptions have undergone a restructuring rule at either the syntactic or lexical level, dependent on the choice of lexical verb and a proximate structural position to that verb, such that no extraction from NP is in fact involved.

This conclusion contrasts with what would be expected from the PDP hypothesis, which predicts a sharp distinction between these two languages on this point. But if the corresponding extractions are blocked in English by the presence of a DP, the Polish facts suggest that NPs are associated with a DP in this language as well. This is our first piece of evidence for the existence of DPs in Polish.

3.2 Extraction from Complement Position

The application of the ECP to Comp-of-N is less clear than it is to Adjunct-of-N. We will use English to clarify the conditions under which a trace can stand in the former position. The result of this discussion will resemble that of adjunct extraction: contrary to the PDP hypothesis, English and Polish have essentially the same properties.

Comp-of-N in the form of a PrepP complement cannot be readily extracted in English; as above, we will use relative clause examples in order to maximize the acceptability of extracting the entire PrepP (the corresponding interrogatives will tend to be still worse):⁶

⁶It is notoriously difficult to distinguish PrepP complements and adjuncts. For those in nominal phrases, we will assume (as did Grimshaw 1990) that a complement cannot function as a post-copular predicate, while an adjunct can. Thus, the PrepP in (i) is an adjunct, while that in (ii) is a complement..

i) a book about John ~ The book is about John.

ii) the meaning of this expression ~ *The meaning is of this expression.

- (23) a. *The woman of whom you deny [any envy *t*] is on TV again.
b. *The city to which he searched for [a road *t*] is dangerous.

These constructions should violate Subjacency (with NP and DP being barriers). But they can be rescued by extracting only the complement of the Preposition, rather than pied-piping the entire PrepP:


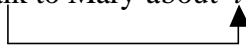
- (24) a. Whom did you deny [any envy of *t*]?
b. What city did he search for [a road to *t*]?

(24) should violate Subjacency as much as (23) does. Obviously some ‘fix’ for definition of Subjacency violations is required, and we will assume that an interim step of adjunction to NP is permitted, analogous to the adjunction to VP introduced in Chomsky 1986 to facilitate the extraction of the direct object (past VP and TP). So we need to turn to the ECP to account for the ungrammaticality of (23). Note also that the grammaticality of (24) contrasts with the impossibility of extracting the complement of an Adjunct-of-N PrepP, in the kind of constructions discussed by Culicover and Rochemont 1992:

- (25) a. *Which table are you selling [books on *t*]?
b. *Which company did the dog bite [a man from *t*]?

‘Fixing’ Subjacency as suggested above would admit (25) as much as ((23)- (24)), so we will assume that it is the ECP which distinguishes (24) from (23) and (25).

Kayne (1983:51-7) has argued that in the general case Prepositions are defective governors, in that they cannot properly govern a trace (ruling out ‘Preposition Stranding’). Constructions such as those in (26) are the result of a marked ‘reanalysis’ rule which permits the V to govern the trace object of the P (as indicated here with arrows) if the V governs the P:

- (26) a. Who did you vote for *t*?
- 
- b. Who did you talk to Mary about *t*?
- 

The impossibility of extraction from the PrepP Adjunct-of-N (25), then, represents the general case of P not properly governing its complement: since V does not govern P, no reanalysis is possible. We propose that, in contrast to (25), preposition stranding is possible in (24) for the same reason that it is in (26): a reanalysis rule has permitted a lexical governor governing P (in (24), N instead of V) to become a proper governor of the complement of that P.⁷ As for (23), Rizzi (1990: 106-10) argues that Ns, like Ps are defective governors (unlike the proper structural governors V and Adj). The ungrammaticality of (23), then, follows directly. Moreover, the presence of a DP blocks antecedent government, as in the case of adjuncts. Data on the extractability of a bare-NP Comp-of-N would be of interest, because this analysis would predict that they would be as unextractable as PrepPs in this position, but they are not to be found in English. Larson 1985:609 accounts for this fact in terms of the potential for ‘case clash’ between the case which a bare-NP assigns to itself and the case which its matrix noun would assign to that complement.

The PDP hypothesis predicts that extraction from Comp-of-N in Polish would, unlike in English, be acceptable: even though lexical government would fail in Polish as much as in

⁷Kayne actually concludes that N...P reanalysis, unlike V...P reanalysis, does not exist (p. 63), on the basis of constructions such as *Mary's recent reference to t in the paper*. Apparently A-Movement has different properties in this regard from the cases discussed here, involving A'-movement. Thus, we are drawing the parallel between (i) and (ii), both involving *wh* movement and preposition stranding, and distinguishing them from (iii):

- (i) Who did Bill recently refer to *t* in the paper.
- (ii) Who did Bill recently see [a reference to *t*] in the paper.
- (iii) *What did Bill die after? (Answer: Dinner)

English, the absence of a DP in Polish would permit the trace to be antecedent governed. But in fact such extraction in Polish is generally impossible (27):⁸

- (27) a. *Do kogo budzi ksiadz [milosc t] w katechetach? *Answer: Do rodziców.*
 toward whom arouse priest [love t] in catechumens. To parents
 ('For whom does the priest arouse [love t] in his catechumens?' *Answer: 'For (their) parents.'*)
- b. *O co przekazales dziekanowi [prosbe t]? *Answer: O pomoc.*
 for what you.conveyed to.dean [request t] For help
 ('For what did you convey to the dean [a request t]?' *Answer: 'For help.'*)

In Polish, bare-NP complements of N abound, since nouns readily select complements inherently marked in one or the other case. Such complements cannot be extracted, whether in the Instrumental, Dative, or Genitive case:

- (28) a. *Jakim przedmiotem profesor budzi w was [zainteresowanie t]?
 which_{Inst} subject_{Inst} professor arouse in you [interest t]
 ('In what subject is the professor arousing in you [interest t]?')
- b. *Komu potepiliscie [pomoc t]?
 whom_{Dat} you.condemned [assistance t]
 ('To whom did you condemn [assistance t]?')
- c. *Czego atakuje ten naukowiec [teorie t]?
 what_{Gen} attacks this scientist [theory t]

⁸As is well-known, preposition stranding is not possible in Polish. Therefore, there are no Polish analogues to (24) to demonstrate that it is the definition of lexical government which is at issue. As noted in Rappaport 1995, the failure of extraction from PrepP is not just a matter of ensuring that the trace of the complement of P satisfies the ECP, as a PrepP serves as a barrier to any extraction from inside it.

(‘Of what is this scientist attacking [a theory *t*]?’)

*Czego sprzedaje kupiec [worek *t*]?

what_{Gen} sells merchant [bag *t*]

(‘Of what is the merchant selling [a bag *t*]?’)

*Których turystów potepiliscie [podsluch *t*]?

which_{Gen} tourists_{Gen} you.condemned [surveillance *t*]

(‘Of which tourists did you condemn [the surveillance *t*]?’)

Our analysis of English adjuncts applies directly to these facts as well: N is a defective governor which cannot serve as a lexical governor of a trace in its complement. Comp-of-N stands without a lexical governor as much as does Adjunct-of-N, discussed earlier. If there were no DP in Polish, the ECP could be satisfied by antecedent government. The fact that such constructions are in fact ungrammatical indicates that antecedent government is blocked, we assume by the same DP which has this effect in English. This is our second argument in favor of DPs in Polish.

As in the case of extraction from Adjunct-of-N, there are apparent instances of extraction from Comp-of-N:

(29) Na który kraj planujecie [napad *t*]?

on which country you.plan [attack *t*]

‘On which country are you planning [an attack *t*]?’

And we assume that some sort of restructuring rule applies to these cases as well. This is confirmed, as above, by the fact that the grammatical constructions become ungrammatical upon a change in the verb, which is apparently one of the contextual conditions of the restructuring:

(30) *Na który kraj omawiamy [napad *t*]

on which country we.discuss [attack *t*]

(‘On what country are we discussing [an attack *t*]?’)

For consistency, we have in the above examples looked at extraction from a direct object NP, finding it, in the general case, blocked. But there is a context in which extraction from NP is so normal that textual examples abound: the complement of a predicate nominal:

(31) a. (Jest) pokusa, by sparafrazowac (Groucho) Marksa:

(there is) temptation to paraphrase (Groucho) Marx

Zlikwiduje kazdy klub, którego jestem [czlonkiem *t*].

I.will.disband any club which_{Gen} I.am [member_{Inst} *t*]

‘There is a temptation to paraphrase (Groucho) Marx, I will disband any club of which I am [a member *t*]’

b. Punktem odniesienia ... zawsze byla Europa,

point of.reference always was Europe

której Polacy czuli sie [obroncami *t*].

which_{Gen} Poles felt REFL [defenders_{Inst} *t*]

‘The reference point was always Europe, which Poles felt (themselves) to be [defenders of *t*].’

It is a simple matter to construct minimal pairs such as the following, in which extraction is possible in both Polish and English from predicate nominals, but not from direct objects:

(32) a. Zlikwidowano klub, ktorego jestem [honorowymczlonkiem *t*].

(they) disbanded club which_{Gen} I.am [honorary member *t*]

‘They closed the club, of which I am [an honorary member *t*].’

b. *Zlikwidowano klub, ktorego wczoraj poznalem [honorowego czlonka *t*].

(they) disbanded club which_{Gen} yesterday I.met [honorary member *t*]

(‘They closed the club, of which I just yesterday met [an honorary member *t*].’)

On grounds completely independent of the present discussion, Longobardi 1994 proposed that a nominal expression can function as an argument only if it is introduced by a category D. More specifically, the category D is associated with a feature [R] (for ‘referential’), which imbues a nominal expression with the referential properties required to function as an argument. Non-argument positions (e.g., vocatives, exclamatory positions, or predicates) may or may not be DPs, depending upon their referential properties (i.e., the appropriateness of the [R] feature). So extraction in cases such as (31) and (32a) is made possible by the independently-motivated possibility that there is no DP in a predicate nominal, as opposed to an obligatory DP associated with a nominal expression in argument position, from which analogous extraction is not possible (32b). This striking contrast in extraction from argument and predicate positions consists a third argument for the existence of DPs in Polish.

To summarize, then, while the PDP hypothesis predicts significant differences between English and Polish in the possibilities of extracting postnominal adjuncts from NPs, we have concluded that the two languages are essentially the same on this point: extraction is generally not possible (aside from a lexically-conditioned reanalysis rule present in some form in each of the languages). Moreover, the shared behavior of the two languages points to the existence of DPs in both. The PDP hypothesis is not committal on the possibilities of extracting postnominal complements from NPs, because that depends on the precise formulation of the ECP (more precisely, on the definition of proper governors). We have shown that both English and Polish block the extraction of complements from NPs in argument position, again strongly supporting the availability of DPs in both languages. Finally, the two languages share a differentiation between a predicate nominal (in which DPs are not required, and extraction is permitted) and an

argument nominal (in which DPs are required, blocking extraction). Since there is independent motivation for the correlation between the distribution of DPs and the contrast between argument position and predicate position, this is a powerful argument for the presence of DPs in Polish as well.

4. Patterns of Extraction: Possessors as Specifiers

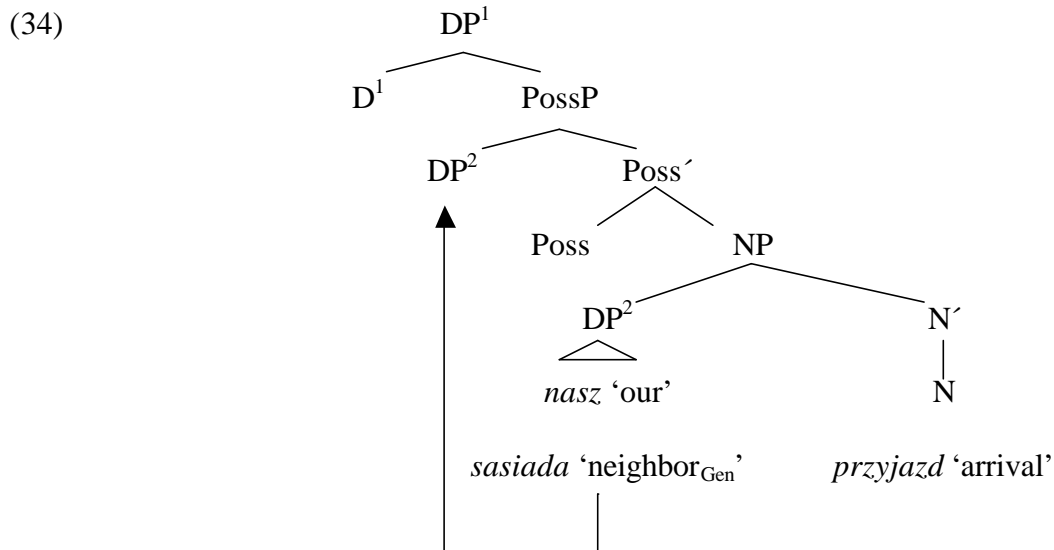
Having considered adjuncts and complements, we turn to the third basic configurational ‘satellite’ of any head: the specifier. Possessors (in the broad sense, encompassing a familiar range of particular relations, including possession proper) and external arguments selected by a variety of deverbal nouns constitute a natural class in that its members share the same mode of grammatical expression: an agreeing possessive adjective or a non-agreeing adnominal genitive. We will use the term *Possessor* for this class, because while the adnominal genitive has other functions, only these categories can be expressed by a possessive adjective.⁹ Possessors in Polish can stand before the head noun (33a) or after it (33b):

- | | | |
|---------|--|---|
| (33) a. | moja książka | nasz przyjazd |
| | ‘my _{Fem.Sg.Nom} book _{Fem.Sg.Nom} ’ | ‘our _{Masc.Sg.Nom} arrival _{Masc.Sg.Nom} ’ |
| | Janka książka | pani przyjazd |
| | ‘Janka _{Masc.Sg.Gen} book _{Fem.Sg.Nom} ’ | ‘your _{Fem.Sg.Gen} arrival _{Masc.Sg.Nom} ’ |
| b. | książka sąsiada | przyjazd sąsiadki |
| | ‘book _{Fem.Sg.Nom} of the neighbor _{Masc.Sg.Gen} ’ | ‘arrival _{Masc.Sg.Nom} of the neighbor _{Fem.Sg.Gen} ’ |

We assume here that there is a functional category Possessive (Poss) optionally standing between D and N which is the source of the genitive case assigned to Possessors. There are two lexical

⁹This is the approach of Cinque 1980 and Rizzi 1990; see Rappaport 2000b for discussion along these lines of Slavic material.

instantiations of Poss. One assigns the theta-role of Possessor to a category it selects for its own Specifier. The other has no inherent semantic content and selects no specifier, but the external argument of a nominal, while thematically licensed in Spec-of-N, raises to Spec-of-D to get case.¹⁰ Thus, both *nasz przyjazd* ‘our arrival’ and *przyjazd sasiada* ‘the arrival of the neighbor’ would have the following structure:



When a Possessor is questioned, the agreeing *wh* word *czyj* is used for an animate antecedent, and the LBC is freely violated.

- (35) *Czyja ukradles ksziazke? Answer: Sasiada. Moja.*
 whose you.stole book neighbor_{Gen} mine
 ‘Whose book did you steal?’ Answer: ‘The neighbor’s.’ or ‘Mine.’

The fact that *czyj* ‘whose’ can be extracted from its PossP is not correlated with the fact that this pronoun agrees with its head. There are circumstances under which *czyj* is not the appropriate *wh*

¹⁰It is argued in Rappaport 2000b that D has the properties ascribed here to Poss. The reasons for adopting the present position will become clear in section 5.2, when it is important to account for the fact that demonstrative pronouns precede Possessors.

pronoun for questioning a Possessor, and a non-agreeing genitive DP containing an interrogative pronoun can be extracted from Spec-of-Poss as easily as agreeing *czyj*:

(36) a. Którego sasiada znasz [siostrze *t*]?
 which_{Gen} neighbor_{Gen} you.know [sister_{Acc} *t*]

‘Which neighbor do you know the sister of?’

‘Which neighbor do you know the sister of?’

b. Czego/ Którego kraju przewidywales [rozpad *t*]? *Answer: Związku radzieckiego.*

what_{Gen}/what_{Gen} country_{Gen} you.foresaw [collapse *t*] Soviet Union_{Gen}

‘What/What country did you foresee the collapse of?’ *Answer: ‘The Soviet Union.’*

Also, in relativizing Spec-of-Poss, Polish uses the Genitive case form of the nominal relative pronoun *który* ‘which’, a form which does not agree with the ‘possessed’ object. While judgements are less consistent in this case (possibly because of the preference for pied-piping in such constructions), many speakers accept constructions such as the following:

(37) To jest sasiad, którego znam [siostrze *t*].

that is neighbor whom_{Gen} I.know [sister *t*]

‘That is the neighbor whose sister I know.’

These facts show that, in contrast to adnominal Genitives functioning as Comp-of-N (28c), Spec-of-Poss can be extracted, whether the category in question agrees or not, and whether a lexical noun in that function would precede its head or not. The fact that both categories can be expressed in the same way, by an adnominal Genitive, make it possible to construct telling minimal pairs. For example, the nominal phrase *krytyka poety* ‘the criticism of the poet’ is a clear case of ambiguity between a ‘subject genitive’ and ‘object genitive’; it could mean either criticism by the poet of something or some one or criticism by someone else of the poet. The ambiguous declarative sentence (38) containing this nominal phrase becomes unambiguous when

the Possessor is extracted, admitting only a subject interpretation regardless of whether the agreeing interrogative pronoun (38a) or non-agreeing relative pronoun (38b) is employed:

(38) Czytam krytyke poety.

‘I am reading criticism of the poet.’

a. Czyja czytasz krytyke?

‘Whose criticism are you reading?’

b. To jest poeta, którego czytam krytyke.

‘This is a poet, whose criticism you are reading.’

The disambiguation follows from the analysis we have presented: while the adnominal Genitive in situ can represent either Spec-of-Poss or Comp-of-N, these two grammatical functions are associated with different configurational structures, and only the former can be extracted.

It has been observed (e.g., by Bailyn 1995 for Russian) that adnominal genitives cannot be extracted from their matrix NP; a Polish example would be

(39) *Kogo ukradles [ksiazke *t*]?
whom_{Gen} you.stole [book_{Acc} *t*]

whom_{Gen} you.stole [book_{Acc} *t*]

(‘Of whom did you steal a book?’)

But following Rappaport 2000a, 2000b, we take possessive pronouns to be syntactically identical to genitive case nominals, undergoing a post-syntactic morphological rule of spell-out. Thus, at the level of syntax, (39) is equivalent to (35). The former is ungrammatical for morphological reasons, not syntactic ones: the pronoun *kto* ‘who’ has failed to undergo the required morphological rule converting it to *czyj* ‘whose’. The extraction of Spec-of-Poss per se, then, is grammatical.

The pattern of extraction from nominal phrases presented so far for Polish bears a striking resemblance to that observed for Romance: only Possessors can be extracted from a nominal phrase (see Cinque 1980 and Giorgi and Longobardi 1991: 204). Under the assumptions adopted thus far, extraction from Spec-of-Poss would violate both Subjacency and the ECP, because the DP would make both PossP and the DP itself barriers (cf. 34). So at a minimum we would have to assume within this framework that extraction from that position requires an intermediate link with a position within the DP, either with Spec-of-D or with a position adjoined to DP. This would avert a Subjacency violation, but it would not satisfy the ECP.

Giorgi and Longobardi 1991 address the ECP issue by attributing the possibility of Possessor extraction to the ability of V in some languages (if not others, as a matter of parametric variation) to lexically govern the specifier of its complement. Assuming a theory without D's, they argue that extraction from the other positions (Adjunct-of-N and Comp-of-N) is blocked because the governed 'escape hatch' Spec-of-N is not available in such cases. N is the bearer of the *f* features of the nominal phrase, and Spec-Head agreement ensures that these features match the analogous features of Spec-of-N; if any NP-internal category with its own *f* features stood in Spec-of-N, the result would be feature clash: two different sets of features would be assigned to the same chain. This analysis is trivially adapted to a theory with DPs, where Spec-of-D is the position at which the filtering effect is realized.

However, we cannot invoke the filtering effect of Spec-Head agreement between D and Spec-of-D to block the extraction of (non-agreeing) Adjunct-of-N and Comp-of-N, while at the same time permitting Possessors to pass through Spec-of-D, whether they agree or not. Further evidence for the filtering effect of Spec-of-D will be provided in the following section, where the extraction of agreeing (as opposed to non-agreeing) attributives is accounted for in the same way,

so we would like to retain that notion. At the same time, Giorgi and Longobardi 1991's notion of external government satisfying the ECP is helpful in accounting for several additional nuances of the data. While the LBC is violated in (35), it is observed in more complex nominal structures, in which the matrix DP of the extracted Possessor is a constituent of another nominal phrase, rather than being governed by a matrix V. This is true whether the larger DP is contained in Comp-of-N (40) or Spec-of-N (41):

(40) *Czyjego przeczytales [ocene [t prezydenta]].

whose_{Gen} you.read [evaluation [t president_{Gen}]]

(‘Whose president did you read an evaluation of?’)

(41) *Czyjego przeczytales [ksiazke [t sasiada]]?

whose_{Gen} you.read [book_{Acc} [t neighbor_{Gen}]]

(‘Whose neighbor’s book did you read?’)

The same generalization applies to extraction from phrases other than nominal ones. For example, the LBC is observed in Polish for extraction from Adjective and Adverb phrases:

(42) . Piotr jest [*bardzo* mady] → *Jak Piotr jest [t mady]?

‘Peter is [*very* smart]’ → (‘How is Peter [t smart]?’)

cf. ✓[Jak mady] jest Piotr?

‘[How smart] is Peter?’

(43) . On [*bardzo* ladnie] recytuje wiersze. → *Jak on [t ladnie] recytuje wiersze?

‘He recites poetry [*very* well]’ → (‘How does he cite poetry [t well]?’)

Cf. ✓[Jak ladnie] on t recytuje wiersze?

‘[How well] does he recite poetry t?’

The LBC is observed here (that is, the ECP is not satisfied) because the trace within the modifier phrase is not lexically governed from outside by a verb.

NP-internal constituents, then, are subject to a filtering effect on extraction (we assume in Spec-of-D), but Spec-of-Poss is not. While other analyses are conceivable, it appears that traces in both Spec-of-D and Spec-of-Poss can (subject to parametric variation) satisfy the ECP if their matrix DP is lexically governed by V. While the latter assumption is more problematic than the former, the problem is shared by both DP and non-DP approaches.¹¹ It would not be productive to pursue this issue; an alternative approach within a more current theoretical framework will be proposed in section 6. We will simply assume that V can govern the first specifier in its complement DP if no overtly expressed category intervenes. Our point here is to demonstrate that despite pushing the theory to, perhaps beyond, its ability to account for the data, the extraction of Possessors does not argue against a DP.

To summarize the results so far, Spec-of-Poss can be extracted in Polish, regardless of its linear order or whether it morphologically agrees with its head N or not. Moreover, this position contrasts with Comp-of-N and Adjunct-of-N in that the last two categories cannot generally be extracted (putting aside quasi-NPs). This pattern is known in other languages, suggesting a common account. The DP entails both Subjacency and ECP violations if extraction from inside the complement NP is attempted, unless the moved category can move through Spec-of-D and satisfy the filtering effect of that position, imposed by Spec-Head agreement. This is possible, subject to parametric variation, for a trace in Spec-of-D position immediately governed by a V.

¹¹Recall that Corver solved the problem by assuming that the possessive pronoun is an adjective in Polish (but not English), so that its extraction properties are the same as those of attributives (see section 5.1 below). As pointed out in footnote 3, this assumption is independent of the PDP hypothesis. Not only do we not accept his idea that the interrogative *whose* is not a syntactic constituent while, say, its Polish counterpart *czyj* is, but various arguments for the essentially nominal and referential character of the possessive pronoun in the syntax (i.e., that its syntactic category is nominal) are presented in Rappaport 2000b.

- a. *piec tych moich ciekawych ksiazek*
'five of these interesting books of mine'
- b. *te piec moich ciekawych ksiazek*
'these five interesting books of mine'
- c. *te moje piec ciekawych ksiazek*
'these five interesting books of mine'

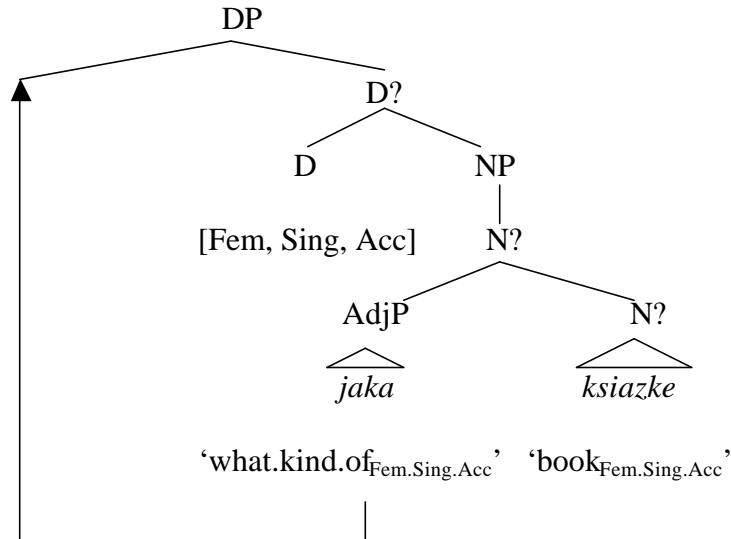
The extraction of these categories will now be discussed in the sequence given in (44).

5.1 Attributives

We have been assuming that attributives, and this would include the interrogative *jaki* 'what kind of', occupy the configurational position Adjunct-of-N.¹³ This assumption is consistent with the word order facts illustrated in (45) (assuming a right-branching structure): PossP is necessarily above the NP, so that a pre-head constituent of the former (e.g., a Possessor in Spec-of-Poss) should precede a constituent of the latter (e.g., Adjunct-of-N). The fact that this interrogative has agreeing morphology is essential to its extractability, since we showed in section 3 (cf. (15)-(17)) that non-agreeing attributives (PrepPs and bare-NPs) cannot be extracted. Extraction directly from this position would be impossible, because both Subjacency and ECP violations would result. Since we take D to be the locus of *f* features (gender, number, person) and case, the natural way to account for the role of agreement in extraction is to assume that the attributive *jaki* must pass through Spec-of-D, which by Spec-Head agreement would share the *f* and case features associated with the DP and nominal phrase as a whole:

¹³We differ, thus, from Cinque 1994, who treats adjectives as specifiers of an unspecified functional category between D and N. The analysis to follow could easily be adapted to this analysis, but we remain unconvinced of its validity.

(46)



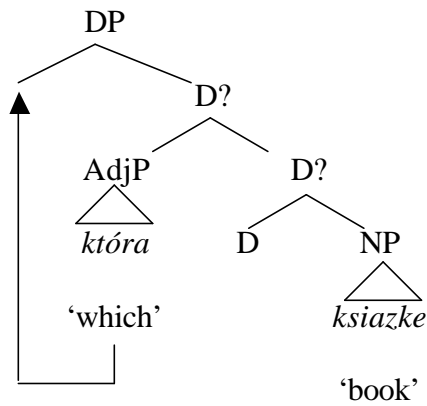
At that point, the extraction of the attributive can be assimilated to the extraction of other NP-internal phrases, which also, it was argued in the preceding section, must pass through Spec-of-D in order to satisfy Subjacency. In order to satisfy the ECP as well, Spec-of-D must be governed by the matrix V, which it is in Polish, but not in English. An agreeing attributive satisfies the filtering effect of Spec-of-D, imposed by Spec-Head agreement, while non-agreeing attributives, like (non-agreeing) complements, do not.

5.2 Demonstratives

We take a demonstrative to be a constituent of the DP. As such, it would be expected to precede both Possessors and Attributes, which is in fact the case (cf. 45). By definition, a lexical item can be inserted in syntactic structure as a complement or specifier if and only if the head selects that lexical item as an argument. Demonstratives are not selected by D, which places them in adjunct position. In fact, it is demonstratives which impose a selectional restriction on D, that it be definite, which is analogous to the combinatorial requirements that many adjectives impose on their head. From this position, raising to Spec-of-D and extraction from there is a

straightforward matter, under the assumption that the matrix V governs the specifier of a DP complement:

(47)



Since demonstratives are invariably agreeing adjectival forms, the filtering effect of Spec-of-D is trivially satisfied.

5.3 Quantifiers

Q is the locus of the quantificational genitive. In the previous subsection, we argued that a demonstrative is an adjunct, rather than a specifier, because D does not entail the presence of a demonstrative (i.e., it does not select one). In contrast, the quantificational genitive does entail the presence of an explicit quantifier (with the partitive in its limited distribution aside), and thus Q selects one as a specifier, to ‘specify’ how many of the entities are referred to. (45a-c) illustrated the various positions that Q can take in relation to D and Poss. The two general approaches to such variation are a) differences in relative embedding of Q with respect to the other categories (above D, below D and above Poss, and below Poss); and b) embedding of Q below Poss, with raising of the head Q to a higher head position. We will assume the former approach.

As long as QP is above DP, extraction from its specifier is permitted just as extraction from Spec-of-D is: under external government by the matrix V, satisfying the ECP (48).

- (48) Ile kupiles [Q t [D tych [N ksiazek]]]?
 how.many you.bought [Q t [D these_{Gen} [N books_{Gen}]]]
 ‘How many of these books did you buy?’

If the QP is below the DP, then we must consider two cases. If D is empty, then extraction from Spec-of-Q below D is permitted by the same mechanism we proposed for extraction of Possessors from Spec-of-Poss below D: government by V can extend to a second maximal projection following if no overt material intervenes. If something intervenes, then government is blocked. That QP in (49) is contained in the DP, inverted from (48), is shown by the contrast in the case of the demonstrative: the demonstrative in (49) is in the nominative case because, being higher than the source of the genitive Q, it is outside the scope of case assignment:

- (49) * Ile kupiles [D te [Q t [N ksiazek]]]?
 how.many you.bought [D te_{Nom} [Q t [N books_{Gen}]]]
 (‘How many of these books did you buy?’)

It is significant that while extraction from Comp-of-N is ungrammatical (28c), extraction from Comp-of-Q is perfectly acceptable and frequently encountered; textual examples follow:

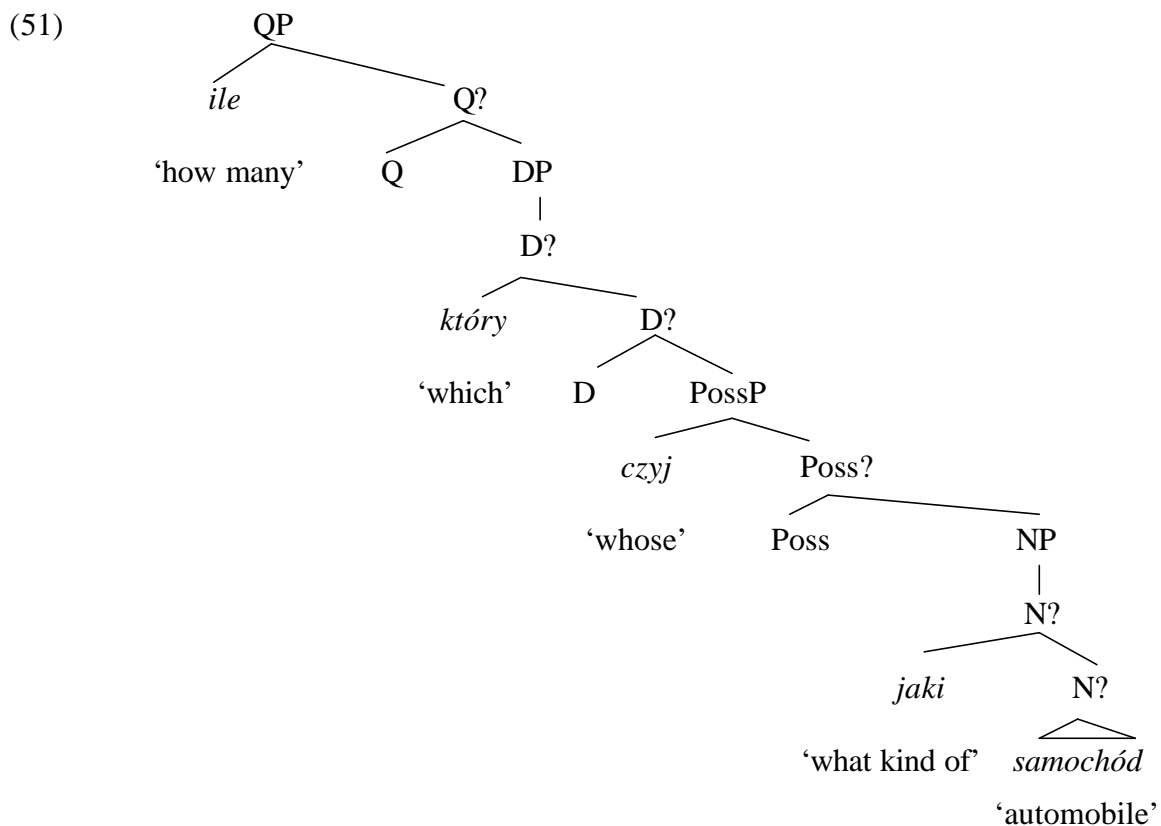
- (50) a. Czego odczuwacie [brak t] w pracy lektorskiej?
 what_{Gen} you.feel [lack t] in work pedagogical
 ‘What do you feel [a lack of t] in pedagogical work?’
- b. Takie mieszkania bylyby i lepsze i tansze niz te,
 such apartments would.be both better and cheaper than those
 których polskie budownictwo buduje [za malo t]
 which_{Gen} Polish construction.industry builds [too few t]

‘Such apartments would be both better and less expensive than those of which the Polish construction industry builds [too few *t*].’

This follows directly from our analysis: these QPs are not shielded from the matrix verb by a functional category, so that extraction from Comp-of-Q encounters no barriers. Such constructions are analogous to extraction from predicate nominals (e.g., (31) and (32a), section 3), which also involved a category (in that case, NP) not shielded from the matrix V by a DP. This is a fourth argument for the existence of DPs in Polish.

5.4 Summary

The following tree structure displays the relative hierarchies of DP, PossP and NP that we have assumed so far, with one of the possible positions of QP shown:



The top-most specifier in Polish (including quantifiers and Possessors) can be extracted because it is governed by the matrix V. The extraction of anything from a lower category would be

blocked, unless (as we argued for the demonstrative and attributive) it passes through Spec-of-D, which can be governed by the matrix V. Extraction of 'left branches', then, is completely compatible with the DP analysis. Essential to our analysis has been our adaption of the external government analysis of Giorgi and Longobardi 1991, which attributes LBC violations to the ability of V to govern a trace in the first/highest overt specifier in a nominal phrase complement. On this analysis, the parametric distinction between Polish and, say, English, lies in whether or not, respectively, V has this ability to govern inside its nominal complement.

6. Patterns of Extraction: A Minimalist Approach

6.1 Preliminaries

The discussion in sections 2-5 has argued against the PDP hypothesis and developed an alternative account of the extraction facts that hypothesis proposed to explain. We have tried to keep theoretical assumptions as constant as possible while discussing literature over a span of time, in order to ensure that our support for DPs in Polish was not dependent on introducing a new theory: their presence could be defended within the framework in which the argument against them had been formulated. In particular, we have presupposed a model of generative grammar in which the principles of Subjacency and the ECP, the mechanism of Spec-Head agreement, and the concepts of government and barriers, play essential roles in regulating *wh* movement. However, linguistic theory has recently been moving in a radically different direction (see, e.g., Chomsky 1998, 1999), in which these elements are either absent or strongly disfavored. Since it is of limited utility to offer an analysis in an out-of-date theoretical framework, we conclude this paper by evaluating the ability of these recent theoretical proposals to account for the observed patterns of extraction. While some of the generalizations we have discovered will apparently require additional articulation of grammatical principles, preliminary

results are very encouraging in that a much simpler account, much sparer in apparatus, seems to be possible. Before developing such an account, it is necessary to outline the new theory in some detail.

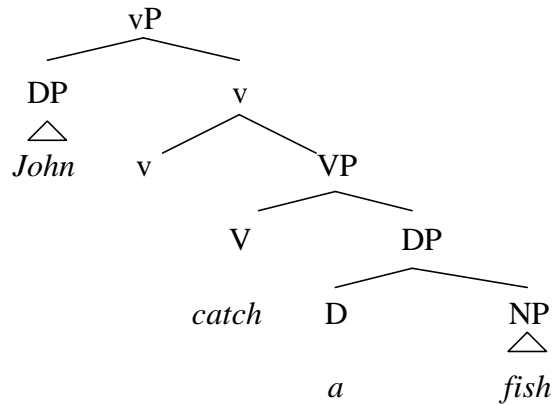
6.1 Background

The architecture of the grammar presented in Chomsky 1998, 1999 has the computational syntax deriving PF and LF representations in parallel and in strictly cyclic fashion. Each *stage* of the cycle entails selecting a new lexical head (either substantive or functional) and satisfying the selection requirements of that head by combining it with syntactic objects to create a new syntactic object. The operation *Agree* (hereafter capitalized, to identify this technical operation) applies to *active* phrases (containing uninterpretable features) to ‘check’ matching features between the head of the current stage H and a head c-commanded by H, identifying uninterpretable features as ‘to be deleted’; feature checking is sometimes preconditioned by additional operations as well. *Strong phases* are stages in which checked features are in fact deleted from the syntactic representation, and all or a part of an assembled syntactic object is made available to the PF component (*spell-out*). Chomsky identifies two strong phases: verb phrases with full argument structure (transitive structures headed by the ‘light verb’ *v*) and clauses with a (propositional) force indicator (headed by *C*).

To illustrate with the sentence *John caught a fish*, the *vP* (the minimal phrase containing the verb and all its argument) has the structure given in (52):¹⁴

¹⁴While the theory of Bare Phrase Structure assumed in the Minimalist Program denies any substantive distinction among different levels of projection from the head, the structures seem clearer if we make the notational distinction between a head ‘XP’ designating the maximal projection of X, and ‘X’ designating the head X or any non-maximal projection of X.

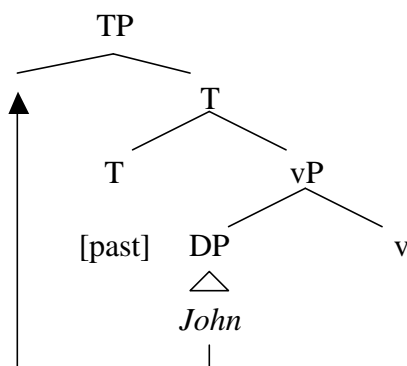
(52)



The functional category *v* Agrees with the DP direct object *a fish* and assigns it the accusative case. The external argument *John*, its unchecked case feature uninterpretable, is still ‘active’.

The vP phrase is then embedded as a complement to a finite T:

(53)



T Agrees with *John*, assigning it the Nominative case. Moreover, T has an ‘EPP’ feature, which can be checked only if something other than an argument is inserted in its specifier position: either an expletive (irrelevant to current discussion) or a phrase contained in the syntactic object (triggering the composite operation Move). This is performed as part of the feature-checking aspect of the Agree operation, as shown in (53). Finally, we assume that the TP is the complement of a functional category C, imparting propositional force (in this case, identifying a declarative sentence).

Chomsky (1998, 1999) argues on empirical grounds for the *Phrase Impenetrability Condition* (PIC) as a mechanism to minimize the computational burden of the derivation:

(54) Phrase Impenetrability Condition

- a) The *edge* of maximal projection HP consists of Spec-of-H or material adjoined to HP.
- b) For a syntactic object of structure [_{ZP} ... Z ... [_{HP} ... H ...]], where ZP and HP are maximal projections and ZP is the minimal strong phase containing strong phase HP, syntactic operations during the ZP stage do not have access to any syntactic objects contained in HP except for the head H and the edge of HP.

It follows from the PIC that at strong phrase CP, the stage at which a *wh* word is moved to Spec-of-C (to satisfy its EPP feature), the direct object inside strong phase vP is inaccessible to Agree and cannot be extracted. Raising the direct object to the edge of vP requires the application of *Object Shift*, a phenomenon which Chomsky 1999 discusses at length: he concludes that while T necessarily has the EPP feature, v may have this feature if it affects the outcome of the derivation, as in *wh* movement. Thus, in the declarative sentence *John catches fish*, v has no EPP feature and Object Shift does not occur. On the other hand, in an interrogative structure such as *(I don't know) what John catches*, C has a [wh] feature which must be checked. In the absence of Object Shift, it cannot be checked and the derivation crashes. If v avails itself of the option of a EPP feature, then the D phrase is raised to a second specifier position of v, outside the external argument ('subject'). From there, the edge of vP, the PIC permits the direct objects to be accessible to Agree during the C stage, as required.

Chomsky assumes DPs without discussing their structure. But he explicitly notes that each of the substantive categories N, V, and T is associated with a corresponding functional category D, v, and C:

(55)

Functional categories	Substantive categories
C	T
v	V
D	N

The parallelism displayed in this table immediately suggests extending to D the relevant properties Chomsky ascribes to v: heading a stage which is a strong phase and being optionally associated with the EPP feature, with the default being its absence. We will pursue this approach in the next subsection.

Before turning to the new analysis in detail, it is advisable to consider whether either pattern of extraction discussed here, that of Polish/Romance or that of English, represents a default option, determined by Universal Grammar. We would tailor our account toward the simplest explanation of the default, leaving room for an appropriate parametric choice to derive any marked option(s).

The Minimalist approach to the theory of grammar entails that representations at the interface levels of Phonological Form (PF) and Logical Form (LF) can only contain objects and structures which are ‘legible’ (i.e., well-defined, interpretable) at the corresponding cognitive system lying outside, but interfaced with, the computational syntax. Operator:variable chains at LF are one such structure: a scopal relation is formalized by two objects and a binding relation between them. Spec-of-C is the operator position, and a trace or copy of the *wh* word in situ represents the variable. Legibility is violated when lexical material not corresponding to an operator stands in Spec-of-C. This is precisely the effect of pied-piping, which creates structures which must in some way be ‘undone’ on the way to a well-formed LF representation (see Rappaport 1995 for discussion). Correspondingly, English pied-piping constructions circumventing LBC violations ((56a) are marked; Polish structures without pied-piping (56b) represent the default:

- (56) a. (I don't know) [_C Which book [_T you read [_D t]]].
- b. [_C Która [_T (ty) przeczytales [_D t książkę]]].
 [_C which [_T (you) read [_D t book]]]

The question, then, is not why Polish permits such structures, but why English blocks them. Moreover, the information determining such cross-linguistic variation in the Minimalist Program must be provided in the lexicon, rather than being associated with general structural properties of lexical categories (in this case, the government properties of V). This follows essentially from the 'Bloomfieldian' definition of the lexicon: it is the list of exceptions. We will keep this result in mind as we consider how to frame our results in the Minimalist Program.

6.2 A Minimalist Approach

We begin with the Polish case, the default which follows most directly from the properties of Universal Grammar. As observed above, to extract the direct object during the C stage requires Object Shift, the result of the light verb *v* being associated with the EPP feature. The effect of this feature is to attract the direct object to the edge of *v*P, where it is accessible to operations at the C stage. If each phrase within the direct object were as accessible as the direct object itself, then no further discussion would be required.

In fact, as sections 2-5 have shown, much within the direct object is NOT accessible to extraction. We will explore, then, what was observed above: the parallelism of table (55) suggests that we explore the consequences of assuming that D, like *v*, is a strong phase and is optionally associated with the EPP feature. We know that by the PIC, a *wh* phrase in *v*P can be extracted during the C stage only if the EPP feature on *v* has attracted that phrase to the edge of *v*P. In parallel fashion, if DP is a strong phase and possibly associated with an EPP feature, then a *wh* phrase contained in DP will be visible to Agree and movement during the *v* stage only if

that phrase is attracted to the edge of DP. By definition the edge of DP constitutes either a phrase adjoined to DP or Spec-of-D. We are thus very close to deriving, on completely different grounds, the ‘escape hatch’ function of Spec-of-D discussed in section 4, attributed there to the filtering effect of Spec-Head agreement. We now turn to the specific cases discussed earlier, and see to what extent this idea works.

In the case of extracting an attributive, the result falls out directly. Consider the example given in (44a), partially diagrammed in (46). D is associated with the *f* (agreement) features gender, number, and person characterizing the nominal phrase as a whole: [feminine, singular, third].¹⁵ The attributive shares these features with the nominal head, and by transitivity, with D, so that D can Agree with the attributive and attract the latter to Spec-of-D to check the EPP feature. The EPP feature is indifferent to the category of the phrase moved; recall the range of substantive categories which can be raised to Spec-of-C to satisfy the EPP feature of C. A complement or non-agreeing attributive, in contrast, cannot Agree with D, because its features are defined independently and not checked in relation to D or N; more precisely, they contain no uninterpretable features, are not active, and thus cannot undergo Agree. As a result, such non-agreeing constituents cannot check the EPP feature of D. The distinction between predicate nominals and argument nominals (e.g., (32a,b)) follows directly: in the absence of the DP and its strong phase, all material in the predicate NP is accessible to Agree during the C stage.

The same approach is valid for a demonstrative (cf. 44b), partially diagrammed in (46). We defined the operation Agree above, following Chomsky, as applying between a head and another category which that head c-commands. However, D obviously does not c-command Adjunct-of-D. This aspect of the definition of Agree clearly needs to be loosened, because Chomsky himself

¹⁵We are simplifying the description of the feature matching operation here, suppressing irrelevant issues.

discusses how Agree would apply to relate a noun and attributive as in *old/smashed car*. For concreteness, we could say that Agree applies between a head H and another head either in the same maximal projection as H (*m-commanded* by H) or c-commanded by it. A demonstrative (Adjunct-of-D), then, falls under the same analysis as an attributive (Adjunct-of-N).

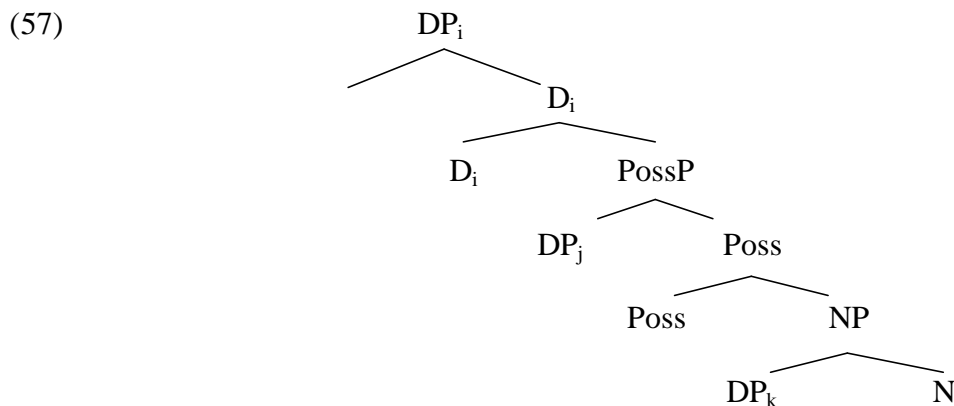
Quantifiers (as in (44c)) require nothing new to be said. When QP contains the DP, as in (45a), then the quantifier, standing outside the DP strong phase, is accessible to operations during the v stage in situ (cf. (48)). This also accounts for extractions from Comp-of-Q (50), which contrast with extractions from Comp-of-N, inside the strong phase. If QP is contained in DP, these facts do not follow. And in fact, quantifiers preceded by demonstratives or possessives (as in (45b,c)) are not extractable. This was exemplified by (49), where not only word order, but the scope of the genitive case assignment imposed by the quantifier in direct cases made the syntactic hierarchy of the modifiers absolutely clear. The dependence of the extractability of quantifiers and their complements on the hierarchical relation of QP and DP follows directly.

The analysis developed in section 4 for Possessors (cf. 35) cannot be retained in the new system, because there is no operation of Spec-Head agreement. But there is a deeper issue at stake. Structural case is by definition the assignment of case which is independent of thematic role assignment (as exemplified in Passive, Exceptional Case Marking, and Raising constructions). Reducing structural case to Spec-Head agreement had the effect of forcing movement, as a DP without case would have to move to the specifier of a case assigner (AGR_s or AGR_o) to get case. In more recent work, however, the operation Agree assigns case without movement. Movement is invoked as part of the Agree operation, but by the EPP feature, which may or may not be present. Case assignment without movement is illustrated by *There entered a*

man or *I expected a man to leave*, in which the DP *a man* is assigned case (Nominative by T and Accusative by v, respectively) while remain in its original position.

This approach opens up an intriguing approach to the syntax of Possessors. One fact completely unaccounted for in section 4 is that the genitive case is used by two different instantiations of Poss: one which assigned a thematic role (possessors in the narrow sense) and one which was semantically empty (attracting the external argument of a deverbal noun). Rather than treating this as accidental homonymy, we view this as evidence that the adnominal genitive of the Possessor is a structural case, assigned by D without invoking movement and independent of the assignment of thematic roles. We retain the functional category Poss, but there is only one: it assigns a thematic role to its specifier, but not case. In assigning D the property ‘Assign structural Genitive case on Agree’, the parallelism drawn in table (55) is extended to the domain of case assignment, since analogous properties characterize T (nominative) and v (accusative).

So consider the following structure:



DP_j as Spec-of-Poss denoting a possessor (e.g., *ksiązka Janka* ‘Jan’s book’) is assigned the Genitive case by Agreement with D_i while remaining in situ (tree structures define hierarchy, not linear order). In a declarative construction, this is all that happens. If DP_j has the interrogative feature [wh], leaving it in situ will cause the derivation to crash; if D avails itself of the option of

containing the EPP feature, DP_j raises to Spec-of- D_i to check this feature, from which position it is accessible to operations at the stages headed by v , then C. In the case of a deverbal noun in the position NP (e.g., *przyjazd Janka* ‘Jan’s arrival’), PossP is absent, and DP_k in Spec-of-N denoting an external argument is assigned the genitive case, and extracted, in precisely the same way as the possessor in *książka Janka* ‘Jan’s book’. The property of genitive case assignment need not be optional, because it applies only on Agreement: if no DP is present in Spec-of-Poss or Spec-of-N, then D_i doesn’t Agree with anything during its stage and no case need be assigned.

Recall that only agreeing Adjuncts-of-N could be extracted, while extracted Possessors were not so restricted. The fundamental distinction here is that Possessors are in their syntactic essential nominal and referential, while Adjuncts-of-N are not. This distinction affects how the operation Agree functions. When a nominal Possessor is inserted in the syntactic structure, its f features are already specified and they are interpretable. When an attributive is inserted, its f features are not completely specified, and they are uninterpretable. When D Agrees with a Possessor, the latter receives Genitive case and its f features are unaffected. When D Agrees with an attributive, the latter’s f features are specified as part of Agree, which constitutes the filtering effect we have referred to. As in an earlier instance, we achieve the same effect as in our earlier account, but by an entirely different mechanism. While to properly govern Spec-of-Poss we had to extend to notion of government by V to extend into a second maximal projection (if no overtly expressed syntactic category intervenes), the new approach requires no new stipulations, drawing the requisite distinction from an independently existing distinction in feature content.

Now we return to the marked English case, in which, we have argued, extraction from nominal phrases (quasi-NPs aside) is not permitted at all. The contrast with Polish is easily defined: as a marked option, D in English never has the EPP feature. Therefore, nothing is raised

to Spec-of-D and nothing is accessible to syntactic operations taking place at the strong phases headed by *v* and C, such as *wh* movement. While the theory developed earlier placed the parametric variation in the government property of V, under this approach the general grammatical operations remains constant across languages. The parameter of variation lies in the feature composition of the function category *v*, that is, in the lexicon. This trivial lexical, i.e., exceptional, property interacts with the universal operation Agree and with the PIC to derive the observational generalizations presented in sections 3-5 of this paper.

There are areas in which the approach here appears to be inadequate, without further refinement of the theory. In particular, two areas were noted in which LBC extraction in Polish is no better than in English. These were attributed to the absence of a matrix V to provide external government of the trace. While government (beyond the purely configurational relation *c-command*) and the ECP are conceptually disfavored in the Minimalist program, there is not an obvious mechanism for accounting for these facts. The first area involved extracting prenominal phrases from one DP embedded in another, whether the DP is Comp-of-N (40) or Spec-of-N (41). Perhaps a more refined definition of Intervention Effects is required, since a D seems to shield another D it contains from Agreeing at a stage higher than the first D. Second, pre-head modifiers could not be extracted from predicate adjective phrases (42) or manner adverb phrases (43). In these cases it is more difficult to see what can replace the notion of external government by V. We must leave these issues here as unresolved challenges to the theory.

References

- Abney, Steven P. (1987) *The English noun phrase in its sentence aspect*. Ph. D. dissertation, MIT.
- Babyonyshev, Maria. (1998) "The possessive construction in Russian: A crosslinguistic perspective". *Journal of Slavic linguistics* 5(2), 193-234.
- Bach, Emmon and George M. Horn. (1976) "Remarks on `Conditions on Transformations`". *Linguistic inquiry* 7(2), 265-99.
- Bailyn, John F. (1995) *A Configurational Approach to Russian `Free' Word Order*. Doctoral dissertation, Cornell University.
- Cattel, R. (1979) "On extractability from quasi-NPs". *Linguistic inquiry* 10(1), 168-72.
- Chomsky, Noam. (1986) *Barriers*. Cambridge, MA: MIT Press.
- Chomsky, Noam. (1998). "Minimalist inquiries: The framework". R. Martin, D. Michaels, and J. Uriagereka, eds. *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*. Cambridge, MA: MIT Press.
- Chomsky, Noam. (1999) "Derivation by phase". Unpublished manuscript, MIT.
- Cinque, Guglielmo. (1980) "On Extraction from NP in Italian". *Journal of Italian Linguistics* 5(12), 47-99.
- Cinque, Guglielmo. (1994) "On the evidence for partial N-movement in the Romance DP". G. Cinque, et al., eds. *Paths towards universal grammar. Studies in honor of Richard S. Kayne*. Washington, DC: Georgetown University Press, 85-110.
- Corver, Norbert. (1992) "On deriving certain left branch extraction asymmetries: A case study in parametric syntax". *Proceedings of the Northeast Linguistic Society* 22, 67-84. University of Delaware.

- Culicover, Peter W. and Michael S. Rochemont. (1992) "Adjunct extraction from NP and the ECP". *Linguistic inquiry* 23, 496-501.
- Diesing, Molly. (1992) *Indefinites*. Cambridge, MA: MIT Press. (Linguistic inquiry monographs, vol. 20.)
- Dimitrova-Vulchanova, Mila and Giuliana Giusti. (1998) "Fragments of Balkan nominal structure". A. Alexiadou and C. Wilder, eds. *Possessors, predicates, and movement in the DP*. Amsterdam: John Benjamins, 333-60.
- Englehardt, Miriam and Helen Trugman. (1998) "D as a source of adnominal genitive in Russian". *Formal approaches to Slavic linguistics* 7.
- Englehardt, Miriam and Helen Trugman. (2000) "Double genitive constructions in Russian". G. Fowler, ed. *Comparative Slavic morphosyntax*. Bloomington, IN: Slavica Publishers.
- Fowler, George and Steven Franks. (1994) "The structure of DP in Bulgarian". *Indiana Slavic studies* 7, 58-68.
- Giorgi, Alexandra and Giuseppe Longobardi. (1991) *The syntax of Noun Phrases: Configuration, parameters, and empty categories*. Cambridge: Cambridge University Press. (Cambridge studies in linguistics, vol. 57.)
- Horn, George M. (1974) *The Noun Phrase Constraint*. Ph.D. dissertation, University of Massachusetts, Amherst.
- Kayne, Richard. (1983) *Connectedness and binary branching*. Dordrecht: Foris Publishers.
- Kayne, Richard S. (1981/1983) "ECP Extensions". *Linguistic inquiry* 12(1), 93-133.
Republished in *Connectedness and Binary Branching*, Dordrecht: Foris Publications.
- Larson, Richard. (1985) "Bare-NP adverbs". *Linguistic inquiry* 16(4), 595-621.

- Longobardi, Giuseppe. (1994) "Reference and proper names: A theory of N-movement in syntax and logical form". *Linguistic inquiry* 25(4), 609-65.
- Progovac, Ljiljana. (1998) "Determiner phrase in a language without determiners". *Journal of linguistics* 34, 165-79.
- Rappaport, Gilbert C. (1995) "Wh-movement-in-Comp in Slavic syntax and in logical form". *Journal of Slavic linguistics* 3(2), 308-56.
- Rappaport, Gilbert C. (2000a) "The Czech possessive relative pronoun *jehoz* and its paradigm: Synchronic morphosyntax and developmental pathways of the Slavic relative clause". *Slavic and East European Journal* 44(2).
- Rappaport, Gilbert C. (2000b) "The Slavic NP". George Fowler, ed. *Comparative Slavic morphosyntax*. Bloomington, IN: Slavica Publishers. Published at website <http://www.indiana.edu/~slavconf/linguistics>.
- Rizzi, Luigi. (1990) *Relativized minimality*. Cambridge, MA: MIT Press. (Linguistic inquiry monographs, vol. 16.)
- Ross, J. R. (1967/1986) *Infinite syntax!* Norwood, NJ: Ablex Publishing. (First published as *Constraints on variables in syntax*, Ph.D. dissertation, MIT, 1967.)
- Rozwadowska, Bozena. (1995) "The configurational hypothesis and Polish NPs". *Papers and studies in contrastive linguistics* 30, 131-44.
- Rozwadowska, Bozena. (1997) *Towards a unified theory of nominalizations: External and internal eventualities*. Wrocław: Wydawnictwo uniwersytetu wrocławskiego.
- Stjepanovic, Sandra. (2000) "Extraction of adjuncts out of NPs". G. Fowler, ed. *Comparative Slavic morphosyntax*. Bloomington, IN: Slavica Publishers.

Szabolcsi, Anna. (1983-4) "The possessor that ran away from home". *Linguistic review* 3, 89-102.

Willim, Ewa. (1997) "On the DP-hypothesis in Polish, an articleless language". Piotr Stalmaszczyk, ed. *Studies in syntax*. Lublin: Folium, 137-58.

Willim, Ewa. (1998) "On the grammar of Polish nominals". D. Michaels, R. Martin and J. Uriagereka, eds. *Step by step. Papers in honor of Howard Lasnik*. Cambridge, MA: MIT Press.

Zlatic, Larisa. (1997) *The structure of the Serbian Noun Phrase*. Ph.D. dissertation, University of Texas at Austin.

Department of Slavic Languages and Literatures
University of Texas at Austin
Austin, Texas 78713-7217
grapp@mail.utexas.edu

Department of Linguistics
University of British Columbia
Vancouver, B.C. V6T 1Z1 Canada
rappapor@interchange.ubc.ca