

# Object Shift and the Clause/PP Parallelism Hypothesis

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In this paper I argue that PPs have a rich internal structure and establish a number of parallelisms between the structures and mechanisms available on the clausal and the PP level. The line of research pursued here naturally leads to hypothesizing uniformity across all lexical projections, i.e., positing a single extended projection (with the concept loosely understood) for all lexical projections (VP, NP, AP, and PP). I also provide evidence for Sportiche's (1988) account of floating quantifiers (FQs) and Bobaljik's (1995) PF merger account of the ban on object shift in Scandinavian aux+participle constructions. I will start the discussion by examining Germanic object shift.

## 1. Object shift in Germanic

Icelandic has the operation of object shift, which moves definite NP objects outside of VP. (See, e.g., Holmberg 1986, Bobaljik 1995, and Diesing 1996. *Ekki* is standardly assumed to mark the left edge of VP (but see Bošković 2001, in press a,b and (27)). Only relevant object traces are shown.)

- (1) Halldór las bækurnar<sub>i</sub> [<sub>VP</sub> ekki [<sub>VP</sub> t<sub>i</sub>]].  
*Halldór read the-books not*  
'Halldór didn't read the books.'

The movement can float a Q. (I assume Sportiche's analysis of FQs.)

- (2) Halldór las bækurnar<sub>i</sub> [<sub>VP</sub> allar t<sub>i</sub>].  
*Halldór read the-books all*  
'Halldór read all the books.'

There is a correlation between the ability of an object to float a Q and undergo object shift, which suggests object shift is responsible for Q-float in (2). Thus,

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the Q-floating movement lands above *ekki*, just like object shift, and both the Q-floating movement and object shift are blocked in periphrastic constructions

(3) Halldór las bækurnar<sub>i</sub> [<sub>VP</sub> ekki [<sub>VP</sub> allar t<sub>i</sub>]].

(4) ?\*Halldór hefur lesið bækurnar<sub>i</sub> ekki t<sub>i</sub>.  
*Halldór has read the-books not*

(5) ?\*Halldór hefur lesið bækurnar<sub>i</sub> allar t<sub>i</sub>.  
*Halldór has read the-books all*

Interestingly, Q-float is also possible within PPs.

(6) ?Ég talaði (i gaer) við stúdentana<sub>i</sub> alla t<sub>i</sub>.  
*I talked yesterday with the-students all*

In this paper I will investigate PP internal Q-float. I propose to relate Q-float in (2) and (6): it is licensed by the same operation, namely object shift, which applies on both the clausal and the PP level and is uniformly available/unavailable on both the clausal and the PP level in a given language.

### 1.1. Parallelism between clausal object shift and Q-float within PP

This section establishes a parallelism in the availability of object shift in CPs and PP-internal Q-float, i.e. object shift in PPs, in a given language by examining Q-float of P-objects in Germanic.<sup>1</sup> We have seen Icelandic has object shift in both CPs and PPs. German and Dutch also fit the parallelism hypothesis. It is well-known they have clausal object shift (see, e.g., Bobaljik 1995. As Bobaljik discussed, they allow object shift in periphrastic examples). They also allow PP-internal Q-float, which under the current proposal means they also have object shift in PPs (see also Koopman 1997 for Dutch (8)<sup>2</sup>.)

(7) Ich habe mit den Studenten<sub>i</sub> allen t<sub>i</sub> gesprochen.

*I have with the students all spoken*  
'I spoke with all the students.' (German)

(8) Ik heb met de studenten<sub>i</sub> allemaal t<sub>i</sub> gesproken

*I have with the students all spoken* (Dutch)

1. Below, I argue object shift does not land in the accusative-checking position, which means we are not dealing here with a clause/PP parallelism in Case-checking, argued for in Watanabe (1993), Hornstein (1995), Bošković (2001), and Noonan (2004).

2. Like Koopman, I ignore the stilted form *allen*, which differs from *allemaal* in several respects.

It is well-known that Swedish NPs cannot undergo clausal object shift (see Holmberg 1986, Bobaljik 1995, and Diesing 1996). They also cannot do it on the PP level, as indicated by their inability to license PP-internal Q-float. (Non-floating *Jag pratade med alla studenterna* is acceptable.)

- (9) \*Jag pratade med studenterna<sub>i</sub> alla t<sub>i</sub>.  
*I talked with the-students all*

In contrast to full NPs, Swedish pronouns do undergo clausal object shift (see Holmberg 1986). Significantly, (10) contrasts with (9) regarding Q-float within PP, which shows that, as in the clausal domain, Swedish pronouns can undergo object shift within PP, in contrast to full NPs (see also section 2.1.).

- (10) Jag pratade med dem<sub>i</sub> alla t<sub>i</sub>.  
*I talked with them all*

Finally, English NPs do not undergo the semantically loaded Icelandic-type object shift on the clausal level (see Chomsky 1995). They also cannot do it on the PP level. (I will discuss English pronouns in section 2.1.)

- (11) \*I spoke with the students<sub>i</sub> all t<sub>i</sub>.

I conclude there is a parallelism between the availability of clausal object shift and the ability to float a Q within PP, which is readily captured under my proposal that PP internal Q-float is licensed by object shift, which applies/does not apply uniformly on both the clausal and the PP level in a given language.

## 1.2. The specificity/definiteness effect

Data regarding the semantic type of objects confirm the current analysis. Diesing (1996) shows object shift in the clausal domain is accompanied by a specificity/definiteness effect: objects undergoing it receive a specific/definite interpretation, non-specific indefinite NPs not being able to undergo it.

- (12) a. Halldór las bækurnar<sub>i</sub> ekki t<sub>i</sub>.  
*Halldór read the-books not*  
 b. \*Halldór las bækur<sub>i</sub> ekki t<sub>i</sub>.  
*Halldór read books not*

- (13) cf. Halldór las ekki bækur. (Icelandic)

In contrast to definite objects, indefinite objects also cannot float a Q, which confirms that the ability to undergo object shift is a prerequisite for Q-float.

- (14) a. Halldór las bækurnar<sub>i</sub> allar t<sub>i</sub>.  
*Halldór read the-books all*
- b. \*Halldór las bækur<sub>i</sub> allar t<sub>i</sub>.  
*Halldór read books all*
- c. cf. Halldór las allar bækur. (Icelandic)
- (15) a. Hans hat die Bücher<sub>i</sub> alle t<sub>i</sub> gelesen.  
*Hans has the books all read*  
 ‘Hans read all the books.’
- b. \*Hans hat Bücher<sub>i</sub> alle t<sub>i</sub> gelesen.  
*Hans has books all read*
- c. cf. Hans hat alle Bücher gelesen. (German)

Significantly, PP internal Q-float exhibits the same behavior: only definite NP objects (i.e. objects that can undergo object shift) can float a Q within PP. The fact that non-specific indefinite NPs, which cannot undergo object shift, also cannot float a Q in the PP domain shows that, as in the clausal domain, in the PP domain the ability to undergo object shift is a prerequisite for Q-float.<sup>3</sup>

- (16) a. \*Ég talaði við stúdenta<sub>i</sub> alla t<sub>i</sub>.  
*I talked with students all*
- b. cf. (6) and Ég talaði við alla stúdenta. (Icelandic)
- (17) a. \*Ich habe mit Studenten<sub>i</sub> allen t<sub>i</sub> gesprochen.  
*I have with students all spoken*  
 ‘I spoke with all students.’
- b. cf. (7) and Ich habe mit allen Studenten gesprochen. (German)

The parallelism provides evidence for the PP internal object shift analysis.

### 1.3. Object shift and V/P movement

I argued that object shift occurs in both clauses and PPs based on a parallelism in the distribution of clausal object shift, which licenses Q-float,

3. Note that though somewhat degraded, Q-float off an indefinite NP is not in principle impossible. Thus, (15b) and (17a) contrast with (i). This means we cannot account for (15b)/(17a) by appealing to some kind of a ban on Q-float off non-definite NPs.

(i) ??Bücher<sub>i</sub> sind alle t<sub>i</sub> (von verschiedenen Leuten) gelesen worden.  
*books are all by different people read become*  
 ‘Books were all read by different people.’ (German)

and PP internal Q-float, as well as the definiteness effect. In addition to object shift, clauses and PPs exhibit parallel behavior regarding V/P movement. Given the standard assumption that V/P and the object NP are generated in the head-complement relation, the V/P must be moving in the object shift examples (1) and (6) since they precede the shifted object, which has undergone movement. A confirmation of the clause/PP parallelism in this regard is provided by object shift in German. As Bobaljik (1995) discussed, clausal object shift can occur in German even when the V does not move, i.e. when it remains in the VP final position. (Bobaljik argues the embedded verb in (18) stays in the VP.)

- (18) Hans glaubt dass [ich die Strassen<sub>i</sub> nicht alle t<sub>i</sub> gesehen habe].  
*Hans believes that I the streets not all seen have*  
 ‘Hans believes that I did not see all the streets.’

The PP domain exhibits parallel behavior, as shown by (19), where, as in (18), object shift takes place, as indicated by Q-float, but just like the verb stays in the VP final position in (18), the adposition stays in the PP final position.

- (19) Ich bin [die Strassen<sub>i</sub> alle t<sub>i</sub> entlang] gegangen  
*I am the streets all along gone*  
 ‘I walked along all the streets.’

Recall that Icelandic disallows clausal object shift in periphrastic constructions. Significantly, as noted by Halldór Sigurðsson (p.c.), PP internal object shift is also impossible in such constructions.

- (20) a. ?\*Halldór hefur lesið bækurnar<sub>i</sub> ekki t<sub>i</sub>.  
*Halldór has read the-books not*  
 b. ?\*Ég hafði talað við stúdentana<sub>i</sub> alla t<sub>i</sub>.  
*I had spoken with the-students all*
- (21) a. \*Halldór hefur bækurnar<sub>i</sub> lesið (ekki) t<sub>i</sub>.  
 b. \*Ég hafði talað stúdentana<sub>i</sub> við (alla) t<sub>i</sub>.

The parallelism in the availability of object shift in periphrastic constructions on the clausal and the PP level provides a strong confirmation of the clause/PP parallelism hypothesis (see also section 1.6. for an account of (20b)/(21b)).

To summarize, clauses and PPs exhibit parallel behavior with respect to object shift and V/P movement.

#### 1.4. On the proper analysis of Q-float

The parallelism between object shift, a movement operation, and FQ-

licensing suggests the latter requires movement, which is most straightforwardly captured under Sportiche's stranding analysis of FQs. PP internal Q-float also favors Sportiche's analysis over various adverbial analyses, e.g. Bobaljik's (1995) sentential adverb analysis (see also Brisson 1998). All else being equal, the sentential adverb analysis predicts a parallelism in the distribution of sentential adverbs and FQs. The fact that FQs but not sentential adverbs occur within PPs thus seems to argue against this analysis. (For more evidence for Sportiche's analysis, see McCloskey 2000 and Bošković in press a).

### 1.5. PPs have a richer structure than standardly assumed

We are also led to the conclusion that PP has a rich internal structure (see also Koopman 1997, Noonan 2004, Riemsdijk 1990, among others), i.e. we are led to posit (22) for clausal/PP object shift cases (Agro/pP can be replaced by v/pP).

(22) a.  $V_i [_{\text{AgroP}} NP_j t_i [_{\text{VP}} t_i t_j]]$       b.  $P_i [_{\text{AgrpP}} NP_j t_i [_{\text{PP}} t_i t_j]]$

In fact, the internal structure of PPs must be even richer given my (in press a) claim (see also Déprez 1989) that Q-float in  $\theta$ -positions is disallowed (the ban is a theorem, i.e. deducible from independent mechanisms; see Bošković in press a). Some of my arguments for the ban are given in (23-26). *All* is uncontroversially located in a  $\theta$ -position in (23-24), involving ergative/passive Vs. (23-24) are thus straightforwardly ruled out by the ban on FQs in  $\theta$ -positions. The problem doesn't arise in *the hosts all arrived/were all arrested*. (25-26) show FQs are banned not only from object, but also subject  $\theta$ -position. Given the standard assumption that even low adverbs like *completely* are above the subject  $\theta$ -position when preceding the V, the unacceptability of (25) (see also Bobaljik 1995 and Sportiche 1988 for discussion of such examples), where due to the presence of a low adverb *all* cannot be located anywhere but the  $\theta$ -position (SpecVP), confirms Qs cannot be floated in subject  $\theta$ -position.<sup>4</sup> (26), which contrasts with *they are all being noisy*, provides more evidence for the impossibility of Q-float in subject  $\theta$ -position, since *all* must be located in this position in (26) given the standard assumption that *being* does not move. (I ignore the irrelevant completive reading of *all*.)

(23) \*The hosts arrived all.

4. The problem doesn't arise in (i). Bošković (in press a) argues (i) provides evidence that we need a richer clausal structure than Chomsky (1995), which has only TP above the VP where subject is  $\theta$ -marked. A return to a version of split I is thus in order. *The hosts* can then be  $\theta$ -marked in SpecVP below *completely*, with *all* in an intermediate position (e.g. SpecTP), above the  $\theta$  but below the SS subject position (e.g. SpecAgrsP).

(i) The hosts all completely understood.

- (24) \*The hosts were arrested all.  
 (25) \*The hosts completely [<sub>VP</sub> all understood].  
 (26) \*They are being all noisy.

Given the ban on Q-float in  $\theta$ -positions, motivated by (23-26) (see Bošković in press a for a number of additional arguments for the ban), (1) should have the structure in (27), with *all* outside the  $\theta$ -position in SpecAgroP, and the shifted object above it. (I will refer to the projection hosting object shift as OP.)<sup>5</sup>

- (27) Halldór las<sub>j</sub> [<sub>OP</sub> bækurnar<sub>i</sub> t<sub>j</sub> [ekki [<sub>AgroP</sub> [allar t<sub>i</sub>] t<sub>j</sub> [<sub>VP</sub> t<sub>j</sub> t<sub>i</sub>]]]].  
*Halldór read the-books not all*

There is considerable independent evidence that the landing site of Icelandic object shift is higher than the accusative-checking position (see, e.g., Bošković 1997, Holmberg and Platzack 1995, Vikner 1995). One piece of evidence is provided by the fact that shifted objects are located above sentential adverbs, which are crosslinguistically assumed to be very high in the structure.<sup>6</sup>

- (28) Í gaer las Pétur bókina<sub>i</sub> eflaust/\*eflaust bókina<sub>i</sub> ekki t<sub>i</sub>.  
*yesterday read Peter the-book doubtlessly not*  
 ‘Yesterday, Peter doubtlessly didn’t read the book.’ (Bures 1992)

Holmberg and Platzack note the shifted object in (29) can bind a pronoun but not an anaphor, which means it is not even located in an A-position. Note that the passivized subject in (30) can bind an anaphor, but not a pronoun, which indicates that the adverbial in question is not an opaque domain for binding.

- (29) Han taldi Ólaf og Marteinn<sub>i</sub>, þeim/\*hvorum öðrum<sub>i</sub> til undrunar,  
*he considered Olaf and Marteinn them each other to wonder*  
 [t<sub>i</sub> vera jafn góða].  
*be equally good*  
 ‘He considered Olafur and Marteinn, to their surprise, to be equally good.’  
 (30) Ólaf og Marteinn<sub>i</sub> voru, \*þeim/?hvorum öðrum<sub>i</sub> til undrunar,  
*Olaf and Marteinn were them each other to wonder*

5. Note that Bošković (in press a) associates the definiteness effect with movement to SpecOP. I argue that English has overt movement to SpecAgroP (see also Bošković 1997, 2002, Johnson 1991, Koizumi 1999, Lasnik 1999, McCloskey 2000, among others), but not movement to SpecOP, hence it lacks Diesing’s definiteness effect.

6. Watanabe (1993) and Bošković (1997), who adopt the Split I Hypothesis, argue that in English, sentential adverbs, which can even occur above auxiliaries, are licensed by T. Thus, they argue that *probably* is TP-adjoined in (i), *can* being located in T.

(i) [<sub>AgrsP</sub> John [<sub>TP</sub> probably [<sub>TP</sub> can play the guitar]]].

taldir [t<sub>i</sub> vera jafn góða].  
*considered be equally good*  
 ‘Olafur and Marteinn were, to their surprise, considered to be equally good.’

(29) conclusively shows the final landing site of Icelandic object shift is not the accusative Case-checking position. Rather, it’s an A’-position above it.<sup>7</sup>

Given the clause/PP parallelism, the PP in (6) must have the structure in (31), where the NP undergoes two steps of movement and the P three. (I will refer to the extended projection of PP as “PP”.)

(31) [<sub>PP</sub> við<sub>j</sub> [<sub>OP</sub> stúdentana<sub>i</sub> t<sub>j</sub> [<sub>AgPP</sub> [alla t<sub>i</sub>] t<sub>j</sub> [<sub>PP</sub> t<sub>j</sub> t<sub>i</sub>]]]].  
*with the-students all*

I conclude therefore that PPs have a rather rich internal structure, similar to the internal structure of clauses.

### 1.6. On the ban on object shift in Icelandic periphrastic constructions

Recall that clausal object shift is disallowed in Icelandic aux+participle constructions (32), and the same holds for object shift in the PP domain (33).

(32) a. ?\*Halldór hefur lesið bækurnar<sub>i</sub> ekki t<sub>i</sub>.  
*Halldór has read the-books not*

b. \*Halldór hefur bækurnar<sub>i</sub> lesið ekki t<sub>i</sub>.

(33) cf. Halldór hefur lesið ekki bækurnar.

(34) ?\*Ég hafði talað við stúdentana<sub>i</sub> alla t<sub>i</sub>.  
*I had spoken with the-students all*

(35) cf. Ég hafði talað við (alla) stúdentana.

This confirms the clause/PP parallelism hypothesis. However, it also raises an interesting problem. The problem is that current accounts of the ban on clausal object shift in periphrastic examples are not extendable to (34). (Below I focus on (32b). (32a) is straightforward given that, as standardly assumed, Icelandic participles don’t move (certainly not above OP, if they move at all): there is then no space following the participle for object shift to occur.) Consider Chomsky’s (1995, chap.3) account of (32b). On his analysis, clausal object shift requires main verb movement to T, which makes it possible to move the object over the subject in SpecVP, and then move the subject over the object without violating locality, given equidistance. The necessary V-to-T movement occurs in (1), but not (32b). The account is too tied to clausal structure to be

7. A shifted object should still be able to A-bind into adverbials lower than AgPP.



extendable to the PP case. (Recall also that P does move.) In other words, it doesn't help us with (34). Holmberg (1999) proposes another account of (32b). He argues that object shift is a PF operation that cannot take place across a phonologically visible category asymmetrically c-commanding the object except for adjuncts. While the condition is violated in (32b), it is met in (34) (just as in (2), assuming *all* is adjoined). (34) thus remains unaccounted for under this analysis. Finally, consider Bobaljik's (1995) account of (32b). Bobaljik proposes that the participle has to merge in PF under adjacency with an affix head that is located above the landing site of object shift. The merger cannot occur in (32b) due to the intervening object.

(36) ?\*Halldór hefur F bækurnar<sub>i</sub> lesið ekki t<sub>i</sub>.

Bobaljik's analysis would not apply to (34) as it is. However, in contrast to Chomsky's/Holmberg's analyses, it is possible to modify it to account for (34). I propose that a null affix head is present in all and only structures involving object shift. More precisely, I propose that the head whose complement undergoes object shift must merge with the null affix head.<sup>8</sup> The assumption does not change anything in Bobaljik's account of (32b): it is still ruled out because the affix head cannot merge with the participle due to the intervening object. However, in contrast to Bobaljik's analysis, under the current analysis, the affix head is not present in (33), where object shift does not occur (cf. fn. 8). Turning to (34), the PF merger account of (32b) readily extends to (34) ((21b) as well): Under the revised PF merger analysis, it is the preposition, not the participle, that has to merge with the affix head. (Recall that the element that merges with the affix is the head whose complement undergoes object shift.) However, the preposition is not adjacent to the affix head.

(37) ?\*Ég hafði F talað við stúdentana<sub>i</sub> alla t<sub>i</sub>.

In contrast to (37), no problem regarding PF merger arises in (35), where object shift doesn't have to occur, hence the object shift affix head doesn't have to be present. I conclude the ban on PP internal object shift in periphrastic examples can be accounted for given the above modification of Bobaljik's analysis. The modification changes the nature of the affix head, tying it to object shift rather than participial morphology. In contrast to Bobaljik's analysis, the affix head is thus present only in aux+participle examples involving object shift.

8. The assumption leads to a change concerning the nature of the affix head. Bobaljik assumes the head is the locus of participial morphology, an assumption that cannot be maintained under the current analysis since we would then expect it to be present in all auxiliary+participle examples, contrary to what is argued in the text. Under the current analysis, the affix head has to be tied to object shift rather than participial morphology.

Furthermore, it is crucial that there is no separate F for clauses and PPs, i.e. there is one F for both. To account for this, I speculate (in a slight departure from the central thesis) that there is a selectional/checking relation between T, which is present only in clauses, and F. Given that Bobaljik's PF merger analysis, but not Chomsky's/Holmberg's analyses, can be modified to account for the ban on PP internal object shift in periphrastic constructions, I conclude that PP internal object shift favors Bobaljik's analysis of object shift in aux+participle constructions over Chomsky's/Holmberg's analyses (see also Bošković 2001, in press b for evidence for Bobaljik's analysis). Recall that PP internal object shift also provides evidence for the clause/PP parallelism hypothesis, rich internal structure of PPs, and Sportiche's analysis of FQs.

### 2.1. Additional clause/PP parallelisms: cliticization

Another instance of clause/PP parallelism is provided by Q-float off English accusative pronouns. While English disallows Q-float with object NPs, as expected given that it does not have the semantically loaded Icelandic-type object shift to SpecOP, English does allow Q-float with pronominal objects (see Brisson 1998, Koopman 1999, Bošković in press a for arguments against the Postal 1974/Maling 1976 NP-internal Q-flip analysis of (39)).

(38) \*Mary read the books<sub>i</sub> all t<sub>i</sub>.

(39) Mary read them<sub>i</sub> all t<sub>i</sub>.

Bošković (in press a) argues movement that licenses Q-float with pronominal objects involves cliticization, with the clitic passing through SpecAgroP.<sup>9</sup>

(40) Mary read them<sub>i</sub> [<sub>AgroP</sub> all t<sub>i</sub> [<sub>VP</sub> t<sub>i</sub> ]].

Evidence for the cliticization analysis is provided by the fact that non-clitic object pronouns (i.e. contrastively focused and coordinated pronouns) cannot license Q-float. (Capital letters indicate contrastive focus.)

(41) a. \*Mary read THEM<sub>i</sub> all t<sub>i</sub>.

b. \*Mary hates you, him and her<sub>i</sub> all t<sub>i</sub>.

Significantly, English PPs behave like clauses with respect to Q-float off objects (42), which confirms the clause/PP parallelism hypothesis. Accusative

9. Note that I argue English has overt movement to SpecAgroP for full object NPs, but not movement to SpecOP (see fn. 5). *The books* thus can be in SpecAgroP in (38). The example is then ruled out because *all* is floated in a  $\theta$ -position within VP.

pronouns in English apparently can undergo cliticization on both the clausal and the PP level,<sup>10</sup> as indicated by the possibility of Q-float in (39) and (42b), and its impossibility in examples with non-clitic pronouns ((41) and (42c,d)).

- (42) a. \*Mary spoke with the students<sub>i</sub> all t<sub>i</sub>.  
 b. Mary spoke with them<sub>i</sub> all t<sub>i</sub>.  
 c. \*Mary spoke with THEM<sub>i</sub> all t<sub>i</sub>.  
 d. \*Mary spoke with you, him and her<sub>i</sub> all t<sub>i</sub>.

## 2.2. Locality

Locality is another area where clauses and PPs exhibit parallel behavior. It is well-known that movement out of a CP proceeds via SpecCP (i.e. the Spec of the highest projection in the clause).

- (43) Who<sub>i</sub> do you believe [<sub>CP</sub> t<sub>i</sub> that Mary likes t<sub>i</sub>]

Riemsdijk (1978), who argues for the existence of a Comp position in PPs, shows the same holds for PPs (see also Bošković in press a). More precisely (updating Riemsdijk's analysis to the current system), movement out of a traditional PP proceeds via the Spec of the highest projection in the PP (i.e. "PP").

- (44) Who<sub>i</sub> do you believe [<sub>PP</sub> t<sub>i</sub> in t<sub>i</sub>]

Bošković (in press a) (for relevant discussion see also Abels 2003) argues that Chomsky's (1999) phase account of SpecCP as an escape hatch for movement out of CPs should be extended to the PP case, which means that: (a) like CP, PP (i.e. "PP") is a phase; (b) like *that*, its head can optionally have the EPP property, which drives movement to its Spec; (c) the EPP property is assigned only when successive cyclicity requires it, so that a wh-phrase cannot remain in Spec"PP", just like it cannot remain in SpecCP, as illustrated in (45-46).

- (45) \*Who believes [<sub>CP</sub> who<sub>i</sub> (that) [Mary likes t<sub>i</sub>]]

- (46) \*Who believes [<sub>PP</sub> who<sub>i</sub> [in t<sub>i</sub>]]

I conclude therefore that clauses and PPs exhibit parallel behavior with respect to locality, more precisely, movement out of clauses/"PPs".<sup>11</sup>

10. Swedish (10) can be analyzed in the same way as (42b) (without movement to OP)

11. It is also worth noting that, as is well-known, clausal pied-piping in Basque is accompanied by fronting of the wh-phrase within the CP. Significantly, "PP" pied-

### 2.3. Case assignment

This section argues for a V/P parallelism regarding case assignment. The parallelism is significant for the clause/PP parallelism hypothesis, given that CP is assumed to be an extended projection of V. In other words, V is the true head of CP, its extended projection, just like P is the true head of “PP”, its extended projection. From this perspective, establishing a V/P parallelism contributes to the effort to establish a parallelism between the clausal and the “PP” domain. My argument for the case parallelism concerns Russian numerals.

Higher numerals in Russian assign genitive to the following noun, referred to as genitive of quantification (GQ) (for discussion of GQ, see Babby 1987, Franks 1995, Bošković in press c, among others). GQ overrides structural, but not inherent case. In other words, a noun which would be normally assigned structural accusative by a verb, gets GQ when following a higher numeral.

(47) Ivan kupil mašinu.  
*Ivan bought car(acc)*

(48) Ivan kupil pjat' mašin/\*pjat' mašiny.  
*Ivan bought five cars(gen)/five cars(acc)*

However, when a numeral NP occurs as an object of an inherent case assigning verb, both the noun and the numeral bear the inherent case in question.

(49) Ivan vladeet fabrikoj.  
*Ivan owns factory(instr)*

(50) Ivan vladeet pjat'ju fabrikami/\*pjat' fabrik.  
*Ivan owns five(instr) factories(instr)/five factories(gen)*

The generalization is that GQ overrides structural, but not inherent case. There is a V/P parallelism in this respect, accusative assigning Ps patterning with accusative assigning Vs, and non-accusative Ps with non-accusative Vs.

(51) čerez minutu  
*in minute(acc)*  
'in a minute'

(52) čerez pjat' minut/\*pjat' minuty  
*in five minutes(gen)/five minutes(acc)*

(53) o knige  
*about book(loc)*

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piping in Jacaltec is accompanied by similar fronting within the “PP” (see Craig 1977).

- (54) o pjati knjigax/\*pjat' knjig.  
*about five(loc) books(loc)/five books(gen)*

These data provide evidence for a P/V parallelism regarding case assignment: like verbs, prepositions can be either structural or inherent case assigners, accusative being their structural case. In Bošković (2002) I argue that the verb's structural case is checked in a projection outside of VP, and its inherent case within VP. The same should then hold for prepositions and PPs.

### 3. Conclusion

I have argued PPs have a much richer structure than standardly assumed. P-complement can undergo two steps of movement within "PP" and the P three steps. PP internal object shift favors Sportiche's analysis of FQs over the sentential adverb analysis, and Bobaljik's PF merger account of the lack of object shift in periphrastic examples over Chomsky's equidistance/Holmberg's PF movement analyses. The most important conclusion drawn in the paper concerns a parallelism between "PP" (extended projection of P) and the clause (extended projection of V). I have argued the two exhibit parallel behavior with respect to object shift, P/V movement, cliticization, locality, and case. Many authors (e.g. Abney 1987) have argued for a parallelism between the extended projection of N and the clause. Given the NP/clause parallelism and the results achieved in this paper, we would also expect to find a parallelism between the extended projection of A and the clause.<sup>12</sup> We would then have uniformity across all lexical projections, with a single extended structure for all of them.

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12. For some evidence to this effect, see Corver (1997).

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