The syntax of floating quantifiers: stranding revisited
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Chapter 5: The Adverbial Approach to Floating Quantifiers

0. Introduction: Syntactic and Semantic Issues with the Stranding Analysis

In the preceding four chapters we have seen evidence in support of the Stranding Analysis of floating quantifiers. However, certain flaws in the theory have also surfaced. For example, in Chapter 4 we saw two instances in which a Surface Structure constraint was needed in order to make the theory work:

(1) a. *All David, Stephen and Chan have arrived.
   b. David, Stephen and Chan have all arrived.

(2) a. *All three the students have read the book.
   b. All three students have read the book.
   c. The students have all three read the book.

In (1a) it appears that a universal quantifier cannot select conjoined DPs if the first DP in the conjunct is singular in number, and if this is so, the floating quantifier in (1b) cannot be a stranded quantifier and must therefore be some kind of appositive or an adverb. The same thing seems to be occurring in (2). In (2a), it appears that a universal numeric quantifier cannot select a DP headed by the definite article in English. If this is so, the ∀NumQ in (2c) cannot be a stranded quantifier and must therefore some kind of appositive or adverbial.

I attempted to get around the problem in (1) by claiming that a universal quantifier can in fact select conjoined DPs but if the first conjoined DP is singular the combination of a plural quantifier followed by a singular noun creates an anomalous sequence that cannot be spelled out. Stranding the quantifier avoids the anomalous sequence. I suggested something similar as an explanation for the discrepancies in (2), namely, that the word order in (2a), which is Q > Card > D > N, constitutes a departure from the standard word order, which is Q > D > Card > N and therefore cannot be spelled out. The problem can be avoided by suppressing the definite article, as in (2b), or by stranding, as in (2c).

Since ad hoc, language-specific constraints are a last resort solution, in light of (1) and (2) one might be tempted to abandon the Stranding Analysis and embrace the Adverbial Analysis, whereby floating quantifiers are adjuncts to verbal phrases. Note, however, that the Adverbial Analysis would have just as much trouble with (1) and (2) as the Stranding Analysis has. The Adverbial Analysis would explain (1b) by saying that the floating quantifier is an adverb, but how would it block (1a)? An explanation for (1a) is required regardless of whether one espouses the Stranding Analysis or the Adverbial Analysis, and in order to explain (1a) proponents of the Adverbial Analysis would need an ad hoc constraint preventing universal quantifiers from selecting conjoined DPs if the first conjunct is singular. This does not seem to be an improvement over the Stranding Analysis.
In like manner, the Adverbial Analysis would explain (2c) by claiming that the \(\forall\text{NumQ}\) was an adverbial of some kind, but two problems would remain. First of all, if the \(\forall\text{NumQ}\) in (2c) is an adverbial, what is the \(\forall\text{NumQ}\) in (2b), and why is the definite article needed in (2c) but impossible in (2a)? Secondly, why is (2c) unacceptable in English (and German) but acceptable in Italian, Romanian and Dutch? Supporters of the Adverbial Analysis cannot simply ignore these two questions, and ultimately they will also have to resort to building constraints into their theory. Furthermore, for all their trouble they will still fail to account for the obvious relationship between the sentences in (2b) and (2c) or the relationship between the following two sentences:

(3)  
   a. All the children have seen the film.  
   b. The children have all seen the film.

Thus, despite the problems that (1) and (2) pose for the Stranding Analysis, it is difficult to see any compelling reason to prefer the Adverbial Analysis.

There are other potential problems with the Stranding Analysis. As mentioned in Chapter 1, it has been claimed in Baltin (1995), Bobaljik (2003) and elsewhere that the Stranding Analysis falsely predicts the grammaticality of the following sentences:

(4)  
   a. *The children were seen all.  
   b. *The children have arrived all.

However, as I also mentioned in Chapter 1, authors like Baltin and Bobaljik fail to consider certain innovations in linguistic theory. If one assumes the position that I argued for in Chapter 1, namely, that the subjects of passive and unaccusative verbs originate not as complements of V but in [SPEC, VP], then the ungrammaticality of the sentences in (4) is explained by the fact that the quantifiers are in a position below their base-position.

The purpose of this chapter is to demonstrate that the arguments put forth by proponents of the Adverbial Analysis are either flawed or not compelling. In Section 1 I will discuss some general problems with the Stranding Analysis and point out that the Adverbial Analysis cannot deal with them any better than the Stranding Analysis. In Sections 2 through 6 I will discuss some of the better-known adverbial analyses in order to demonstrate that they do not present compelling reasons for abandoning the Stranding Analysis. Section 7 is a brief summary of the chapter.
1. General Problems with the Stranding Analysis

One issue with the Stranding Analysis is that stranding is sometimes restricted even in languages that allow it. Spanish and Romanian are two good examples, as we saw in Chapter 2. These two languages allow stranding rather freely, but the position between a perfect auxiliary and a perfect past participle is for some reason not available for stranding. Some might argue that this is a problem for the Stranding Analysis, however it is also a problem for the Adverbial Analysis. Proponents of the Adverbial Analysis would have to explain why floating quantifiers, if they are adverbials, cannot appear between a perfect auxiliary and a past participle while other adverbials can. Note the following sentences from Spanish (5) and Romanian (6):

(5) a. Los alumnos han probablemente leído el libro.
the students have probably read the book

b. Los alumnos han cuidadosamente leído el libro.
the students have carefully read the book

c. *Los alumnos han todos leído el libro.
the students have all read the book

(6) a. Studenții au mai citit carte.
students the have again read book the

b. Studenții n-au prea citit.
students the not have hardly read

c. Studenții au cam întârziat la ore.
students the have really arrived late for class

d. Studenții au tot citit carte.
students the have continuously read book the

e. Studenții au și început să citească.
students the have immediately begun that (they) read
(The students immediately began to read.)

f. *Studenții au toți citit carte.
students the have all read book the

Whereas Spanish and Romanian disallow stranding in just one position, Swedish, which has not been discussed in this thesis so far, is far more restrictive. The rule in Swedish is that a quantifier can be stranded only between the first and second verbal elements in a clause, and if there is only one verbal element stranding is not possible. In the following sentences, there is only one verbal element, a finite main verb, and stranding is not possible:
In Chapter 2 we saw that this construction with stranding after a solitary main verb
is perfectly acceptable in languages such as German and Italian but not in English.
The reason for this is that in German and Italian the verb moves from v to AgrS,
around the stranded quantifier, while in English it stays in v. In Swedish, a V2
language, verbs also move to AgrS (and C) from v, so according to the Stranding
Analysis (7b) should be acceptable.

In the following sentence, there are only two verbal elements, and stranding between
those elements is grammatical:

(8) a. Alla doktorerna skulle undersöka patienten.
    all doctors the shall examine patient the

b. Doktorerna skulle alla undersöka patienten.
    doctors the shall all examine patient the

The following sentence has four verbal elements, and stranding is only possible
between the first two, which, again, is not what the Stranding Analysis would
predict:

(9) a. Doktorerna skulle alla ha kunnat undersöka patienten.
    doctors the shall all have been able to examine patient the

b. *Doktorerna skulle ha alla kunnat undersöka patienten.
    doctors the shall have all been able to examine patient the

c. *Doktorerna skulle ha kunnat alla undersöka patienten.
    doctors the shall have been able all to examine patient the

Swedish undeniably poses a challenge for the Stranding Analysis. A possible
explanation for (9b) and (9c) is as follows:

Only the finite verb moves. The other verbal elements in a clause remain in their
base-positions (apart from transitive verbs, which moves from V to v). One could try
to argue that all the verbal elements below the finite one, that is, the ones that do not
move, form a kind of cluster that disallows stranding between them. There are two
problems with this approach. First of all, it does not explain the ungrammaticality of
(7b). Secondly, it does not explain why items other than floating quantifiers, such as
adverbials, can in fact appear between lower verbal elements, albeit with marginal
results:
(10) a. ?/*Doktorerna skulle ha allihop kunnat undersöka patienten.
    doctors the shall have all been able to examine patient the

b. ?Doktorerna skulle ha kunnat allihop undersöka patienten.
    doctors the shall have been able all to examine patient the

c. ??Doktorerna skulle ha kunnat troligtvis undersöka patienten.
    doctors the shall have been able probably to examine patient the

These sentences are perhaps marginal, but they are clearly better than (9b) and (9c),
and this brings me to a very important point. A proponent of the Adverbial Analysis
would be very hard pressed to explain why a quantifier cannot be floated in the
positions indicated in (9b) and (9c) while adverbs can appear there. Examples (10a)
and (10b) are especially interesting because they contain the adverbial form of the
universal quantifier, allihop. This adverbial, which is very comparable to the Dutch
allemaal, was formed by combining the universal quantifier alla and the noun hop, a
cognate of the English word heap. According to the Adverbial Analysis, one would
expect to find alla and allihop in the same positions, but this expectation is not
fulfilled. Sentence (7b), which contains only one verbal element, also poses a
problem for the Adverbial Analysis because it becomes grammatical if the floating
quantifier alla is replaced with an adverb:

(11) Doktorerna undersöker allihop/troligtvis patienten.
    doctors the examine all probably patient the

This evidence from Swedish shows that the Adverbial Analysis is faced with at least
as many problems as the Stranding Analysis. We can summarise our findings from
Swedish in the following way:
Sentence (8b) shows that stranding takes place in Swedish. However, sentences (7b), (9b) and (9c) show that stranding is severely restricted. The Adverbial Analysis is of no use because it would not be able to explain why sentences (7b), (9b) and (9c) are impossible while the sentences in (10) and (11) are possible. The more plausible explanation, given (8b), is that stranding does take place in Swedish but that there are restrictions that are not yet well understood, just as in Spanish and Romanian. In any case, one can certainly not conclude that the Stranding Analysis is in any way inferior to the Adverbial Analysis on the basis of the restrictions on quantifier floating that one finds in languages like Spanish, Romanian and Swedish.1

One might claim that another potential issue with the Stranding Analysis is that quantifier stranding is not universal. All the languages that we have looked at so far in this thesis allow stranding to some extent, but this does not mean that all languages do. Does this pose a problem for the Stranding Analysis? I do not believe that the claim that quantifier stranding is parameterised is incompatible with the Stranding Analysis. Furthermore, proponents of the Adverbial Analysis would also have to deal with the issue of parameterisation, and they would have the same difficulty explaining why certain quantifiers can appear in adverbial positions in some languages but not in others.

One can see that the syntactic arguments against the Stranding Analysis are weak because the Adverbial Analysis runs into the same problems as the Stranding Analysis but misses generalisations that the Stranding Analysis captures. In my opinion the most interesting arguments of the proponents of the Adverbial Analysis are semantic in nature and have to do with the fact that stranding seems to affect meaning. One might argue that if a sentence with a stranded quantifier does not have exactly the same meaning as its counterpart without stranding, then it must have

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1 The idea that in Swedish the non-finite verbal elements in a clause form a cluster that is impenetrable to a stranded quantifier becomes more plausible when one considers subordinate clauses. It is well known that finite verbs in main clauses in Swedish move to a higher position because they appear above negation while finite verbs in subordinate clauses remain in their base-position, below negation:

(i) Doktorerna skulle inte ha undersökt patienten.  
    doctors the shall not have examined patient the

(ii) Jag tror att doktorerna inte skulle ha undersökt patienten.  
    I believe that doctors the not shall have examined patient the

If it is the immobility of verbal elements that forms an impenetrable cluster, then one would expect stranding to be possible in a main clause but not in a subordinate clause. This expectation is met:

(iii) Doktorerna skulle alla ha undersökt patienten.  
     doctors the shall all have examined patient the

(iv) *Jag tror att doktorerna skulle alla ha undersökt patienten.  
    I believe that doctors the shall all have examined patient the

Nonetheless, the fact that a cluster is closed to a stranded quantifier but not to adverbs, as seen in (10), shows that there is still work to be done in this area.
been derived from a different base-structure and there is no such thing as stranding. Let’s take a look at some examples. Consider first the following sentences from Italian:

(12) a. Tutti gli studenti non sono venuti.
    all the students not are come

b. Gli studenti non sono tutti venuti.
    the students not are all come

In the (a) sentence, only a [∀ > ¬] reading is possible. In the (b) sentence, which is the same as (a) except that the universal quantifier has been stranded, only a [¬ > ∀] reading is possible. I do not consider this to be a problem for the Stranding Analysis, because it can be explained syntactically. In (12a) the quantifier c-commands the negation marker and in (12b) the negation marker c-commands the quantifier. That positioning can affect scopal relations should not be a hindrance to the Stranding Analysis or any other analysis. The following sentence really drives this point home, because it shows that stranding is not the issue at all:

(13) Non sono venuti tutti gli studenti.
    not are come all the students

This sentence is the same as (12a) except that the entire subject QP has remained in its base-position. (The past participle venuti (come) has moved up in the manner described in Section 2 of Chapter 2.) The entire subject is therefore below negation and, as would be expected, only a [¬ > ∀] reading is possible. To summarise, even though the sentences in (12a), (12b) and (13) have the same base-structure, movement affects meaning, whether it involves quantifier stranding or not. These examples therefore do not constitute an argument against the Stranding Analysis.

The examples in (12) and (13) show how positioning can affect meaning when negation is involved. There are instances in which stranding can bring about more subtle differences in meaning. In order to demonstrate this I need to briefly discuss the subject of distributivity. Most universal quantifiers seem to be inherently distributive. The quantifier both is a good example. When it selects a NP, any properties predicated of that NP must be applicable to each individual that it designates. The following example from de Swart (1998) illustrates this:

(14) a. The two students are a happy couple.
    b. *Both students are a happy couple.

Being a happy couple can only be predicated of a group of two, not to individuals, and this is why (14b) is ungrammatical. The universal quantifiers every and each are
also always distributive. In the following two sentences, there must be at least as many pizzas as there are students:

(15)  
   a. Each student ate a pizza.
   b. Every student ate a pizza.

As argued in Gil (1995), Beghelli (1997), Puskás (2003) and elsewhere, the universal quantifier *all* is not inherently distributive. It can allow either a collective or distributive interpretation, as the following sentence shows:

(16)  
   All the students ate a pizza.

It can also combine with a predicate that forces a collective interpretation, unlike *every* or *each*. The following example from Gil (1995) illustrates this:

(17)  
   a. All the men gathered at dawn.
   b. *Every man gathered at dawn.

Nonetheless, I would maintain that the first or preferred reading of a sentence such as (16) is a distributive one. Put in another way, the quantifier *all* can combine with collective or distributive predicates, but unless pragmatics dictates otherwise, the default reading is a distributive one. The following sentences show the relevance of this observation to the Stranding Analysis:

(18)  
   a. ?/*All the peasants have destroyed the castle.
   b. ?The peasants have all destroyed the castle.

Example (18a) is problematic because when a listener hears the universal quantifier followed by a complement DP, the first expectation is that the predicate will be true of each individual under the scope of the quantifier. Since an individual peasant cannot destroy a castle, and since there are not as many destroyed castles as there are peasants, a collective interpretation is required, which is contrary to the more natural distributive interpretation of the quantifier. What is interesting is that the sentence improves, for some speakers at least, if the quantifier is stranded, as seen in (18b). An opponent of the Stranding Analysis might claim that because the quantifier in (18a) tends to require a distributive interpretation while the quantifier in (18b) can more easily allow a collective interpretation, the two sentences must have different base-structures and stranding has not occurred in (18b). My counterclaim would be that the two sentences in (18) are derived from a common base-structure but that the stranding of the quantifier in a position adjacent to the predicate allows it to take direct scope over the collective event expressed in the verb, which allows pragmatics to play a greater role. In this way a collective reading becomes possible. The quantifier in (18b) still modifies the subject DP *the peasants*, but its adjacency to the predicate, created by stranding, refocuses is scope.

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As I will point out in Sections 3 and 6 of this chapter, there are those, such as Doetjes (1997) and Kobuchi-Philip (2003), who maintain that the scopal differences seen in sentences like (18a) and (18b) arise because the quantifier in (18b) is base-generated as an adjunct to VP. My claim is that there is no need to treat the quantifier in (18b) as an adjunct to VP because stranding accomplishes the same thing by simply changing the positioning of the quantifier with respect to the predicate. This is analogous to what happens in the Italian sentences in (12) and (13). The sentences in (18) are a problem for the Stranding Analysis only if one assumes that stranding should have no effect on meaning. I continue to maintain that a potential change in scope and meaning is a natural consequence of movement and is not a counterargument to the Stranding Analysis.

In this section I have attempted to show that from a syntactic standpoint the Adverbial Analysis is unconvincing in many respects, and that certain semantic phenomena that seem problematic for the Stranding Analysis need not be construed as problematic if one accepts the claim that movement affects relative positioning, scope and meaning as a matter of course. In the remaining sections of this chapter I will look at individual adverbial approaches that have been put forth in the literature.


Baltin (1995) treats floating quantifiers as predicate specifiers comparable to English adverbs like ever. The following examples indicate why he takes this approach:

(19) a. I believe these people all to have left.
    b. I would hate for these people ever to find out they were wrong.

Baltin is concerned with two questions:

Question 1:

Why, as exemplified in (20), can a floating quantifier not appear before the English infinitival marker to if the subject of the infinitive is PRO although it can appear there if the subject of the infinitive is a lexical item or the trace of a lexical item?

(20) a. *They tried all to PRO leave.
    b. They seemed all t₁ to t₁ be happy.
    c. I would prefer for these people₁ all t₁ to t₁ leave.

Question 2:

Why, as exemplified in (21), can a floating quantifier appear between a direct object and an argument like a PP, but not if that argument is extraposed?

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Baltin hypothesises that a predicate specifier like *all must introduce a predicative constituent. I will discuss the concept of predicative constituent in more detail towards the end of this section. For now it is enough for the reader to know that a predicative constituent is a phrase that becomes predicative by virtue of its syntactic positioning and behaviour and by having a mutual c-command relationship with an appropriate DP. It is similar to but not the same as a small clause. In (20a), for example, the potential predicative constituent \[ \text{IP to [VP PRO leave]} \] cannot be introduced by or merged with the predicate specifier *all because it has no mutual c-command relationship with an appropriate DP. The subject of this IP is PRO, and since, according to Baltin, PRO does not move out of VP it cannot c-command the phrase. In (20b) and (20c), both of which involve the movement of a DP, a trace of the moved DP mutually c-commands the predicative constituent introduced by *all. In (21a), the DP *the books mutually c-commands the predicative constituent introduced by *all, which is \[ \text{XP all [IP to Sally]} \]. This makes the DP *the books function like a subject, that is, the subject of the predicative constituent. In (21b) and (21c), the phrase *though we may interrupts the mutual c-command relationship that the DP *the books has with the predicative constituent.

Baltin considers the Stranding Analysis of Sportiche (1988) similar to but inferior to his own analysis. The Stranding Analysis is similar to Baltin’s analysis in that both approaches rely on the VP-internal Subject Hypothesis and on the idea that movement of PRO from VP to IP is unmotivated. Baltin has three criticisms of the Stranding Analysis, which we will now take a close look at. The first one, which I referred to in Chapter 1 and in the Introduction to this chapter, is a standard criticism made by proponents of the Adverbial Analysis. It is the famous claim that the Stranding Analysis incorrectly predicts the grammaticality of the following sentence:

\[(22) \quad \text{*The people were seen all.}\]

I will not dwell on this criticism here because I have already shown that it is invalid in light of the Split VP Hypothesis, which allows for passive and unaccusative subjects to be base-generated not as complements of V but as specifiers of VP. Under this scenario, (22) cannot be generated.

Baltin’s second criticism of Sportiche’s Analysis is that it is insufficiently general because it cannot explain why the position of floating quantifiers is identical to that of other preverbs like *ever, as shown in (19). It is interesting that Baltin does not mention the fact that his analysis also misses a very obvious generalisation, namely, the very clear relationship between sentences like the following two:

\[(23) \quad \begin{align*}
\text{a. All the people were seen.} \\
\text{b. The people were all seen.}
\end{align*}\]
Baltin, like so many proponents of an Adverbial Analysis, also ignores the fact that floating quantifiers bear Case and show φ-feature agreement while adverbs do not. Furthermore, contrary to Baltin’s claim, Sportiche does explain how a floating quantifier gets into its so-called adverbial position. It is stranded there by a vP- or VP-internal subject that moves to a higher position. Finally, I would say that Baltin’s claim that floating quantifiers and other preverbals like ever occupy identical positions is too strong:

(24)  a. *Will we all be able to ever live in peace?
     b. Will we ever be able to all live in peace?

Baltin’s second criticism of the Standing Analysis is thus very weak at best. His third criticism is the most interesting one. He says that the Stranding Analysis incorrectly predicts that stranded quantifiers will never appear before to in sentences such as the following:

(25) I persuaded the men all to resign.

He bases this on the idea that PRO does not move to [SPEC, IP]. He accepts the arguments of Chomsky and Lasnik (1993) that PRO is assigned Null Case, but he claims that this case assignment takes place in [SPEC, VP]. Clearly, in order for (25) to be generated under the Stranding Analysis the phrase \[QP all [DP PRO]\] must move to [SPEC, IP] of the infinitival clause. The question that I must pose, in defense of the Stranding Analysis, is whether the claim that PRO does not move to [SPEC, IP] is well supported. I will do this by scrutinising the arguments against movement of PRO made by Sportiche and Baltin, who of course work within two different frameworks. We begin with Sportiche, who says that negation offers evidence that PRO does not move to [SPEC, IP].

If we assume that negation is between IP and vP in French, the following sentences from Sportiche (1988) indicate that PRO selected by the quantifier tous (all) remains in vP:

(26)  a. Ils ont décidé de ne pas tous partir à la même heure.
     they have decided to not all leave at the same time

     b. *Ils ont décidé de tous ne pas partir à la même heure.
     they have decided to all not leave at the same time

My first comment on (26b) is that I question the judgement. That the sentence is downgraded with respect to (26a) is clear, but not all speakers reject it. Be that as it may, assuming for the sake of argument that (26b) is ungrammatical, the question is whether its unacceptability is really due to the movement of PRO to [SPEC, IP] and not to something else. Consider the following sentences, also from Sportiche (1988), in which there is no PRO and yet the results are similar to those seen in (26):
a. Les enfants ont semblé tous ne pas vouloir venir.
   the children have seemed all not to want to come

b. Les enfants ont semblé ne pas tous vouloir venir.
   the children have seemed not all to want to come

The high marginality of (27a) cannot have anything to do with PRO, since this is a raising construction that involves not PRO but a DP that moves first to [SPEC, IP] of the lower clause, where it strands a quantifier, and then to the higher clause. One would expect (27a) to be acceptable under the Stranding Analysis. The point is this: One cannot rule out the possibility that (26b) and (27a) are downgraded for the same reason, which means that movement of PRO is not necessarily the reason for the unacceptability of (26b). The problem with both sentences could, for example, have something to do with the movement of a quantifier across negation. The example in (28) from Sportiche (1988), like (26b), also involves the structure [QP all [DP PRO]] that moves across negation into [SPEC, IP]:

(28) ?/* Il aurait fallu tous ne pas partir à la même heure.
   it would have been necessary all not to leave at the same time

What is important is that examples (26b) and (28) may be downgraded but they cannot be completely ruled out. Sportiche’s data therefore lead one to the conclusion that movement of PRO takes place but can cause marginality or ungrammaticality. Sportiche attributes the marginality to the fact that PRO, which is (or was) assumed to be ungoverned, does not need to move to avoid government, since the head of an infinitival IP is not a governor. I would suggest that the downgrading of sentences like (27a) and (28) comes from the fact that PRO is moving from one non-case position to another, that is, from [SPEC, VP] to [SPEC, IP] in an infinitival clause. In any case, if one accepts movement of PRO in spite of its apparent markedness, one can generate (25) under the Stranding Analysis. Baltin of course rejects movement of PRO altogether. We will now examine his reason for doing this.

Baltin’s reason for rejecting movement of PRO is that since PRO is assigned Null Case in [SPEC, VP] movement to [SPEC, IP] is unnecessary and is therefore blocked by Economy principles. Baltin can explain the sentences in (26) and (27) within the framework of his theory. He would say that (26a) is grammatical because PRO, as the subject of the lower VP, c-commands the predicative constituent selected by all. For (26b), he would say that PRO, again in VP, does not c-command the predicative constituent selected by all. In (27a) and (27b), in which a lexical DP has moved upward in a raising construction, the trace of that moved DP mutually c-commands the predicative constituent selected by all and the sentences are expected to be acceptable. Baltin’s model seems to work for these sentences. Nonetheless, there are reasons to doubt his claim that PRO does not move, which I will now discuss.

Sportiche and Baltin base their arguments related to movement of PRO on government and case considerations, but neither one mentions the Extended
Projection Principle. In Adger (2003)$^5$ it is argued that PRO moves to [SPEC, IP] to satisfy the EPP. Others like Grewendorf (2002) and Culicover (1997) also assume that PRO moves to [SPEC, IP].$^6$ If PRO moves to [SPEC, IP], the Stranding Analysis can generate (25) and Baltin’s third criticism becomes invalid. I would say that the EPP feature is probably not very strong, which is why it sometimes gives way to Economy principles and non-movement is preferred. This is illustrated in the following two sentences, in which non-movement produces better results:

(29)  a. The linguists promised all to leave.
    b. The linguists promised all leave.

The second of these sentences sounds better than the first. The point is that there is reason to believe, and it is argued in the literature, that PRO can move to [SPEC, IP], which means that the Stranding Analysis can generate (25), contrary to Baltin’s criticism.

The most convincing argument against Baltin’s hypothesis, I believe, has to do with example (20a), repeated here:

(30)  *They tried all to leave.

Baltin says that this sentence is ungrammatical because the potential predicative constituent all to leave does not have a mutual c-command relationship with a DP, which is due to the fact that the subject of to leave, which is PRO, does not move up. To me, (30) does not sound ungrammatical, although I would admit that it sounds marginal. However, if one considers other subject control verbs like promise, decide or manage, the results are much better. All of the following examples were found on the Internet:

(31)  a. They had promised all to stick by him no matter what.
    b. We told them to form a strong alliance, which they promised all to do.
    c. We have promised all to meet up and do this again.
    d. The servants promised all to take care of the life of Caesar.
    e. They promised all to pray for me.
    f. We decided all to go to the Twisted Monkey.
    g. The tourists decided all to swarm the shop.
    h. As it was very nice weather we decided all to go to the beach.
    i. At closing time we decided all to go back to my friend’s flat.
    j. After three years the producers and Lilian decided all to go their own way.
    k. Thank God we managed all to flee safely.
    l. Luckily we managed all to hitch a lift back in good time.
    m. We managed all to be so relaxed about what we actually did.
    n. They managed all to penetrate the building with the same deepness.
    o. They managed all to broadside in and gently slap the side of our vehicle.

The only way that Baltin could explain the grammaticality of these sentences would be to assume that PRO moves to [SPEC, IP]. PRO is the only DP that could possibly have a mutual c-command relationship with the control clause. His third and final criticism of the Stranding Analysis, which is based on the claim that PRO does not move to [SPEC, IP], must therefore be rejected.

Having shown that Baltin’s three criticisms of the Stranding Analysis are not well founded, I would like to come back to the examples in (21), since they are critical to Baltin’s arguments. They are repeated here:

(32) a. Give the books all to Sally though we may, it won’t matter.
    b. *Give the books all though we may to Sally, it won’t matter.
    c. *Give the books though we may all to Sally, it won’t matter

Although I do not agree with Baltin’s overall analysis, I accept his claim that in these sentences the DP the books and the PP to Sally form some kind of phrase together. I will provide my own reasons for supporting this claim shortly. Since this type of phrase does not fit the description of a Small Clause, I will use Baltin’s term predicative constituent. Baltin emphasises that the predicative status of a phrase does not necessarily depend on its semantics, but rather on its syntactic positioning and behaviour. In fact, the same phrase may or may not be predicative, depending on its position. Baltin offers the following data to demonstrate his point, claiming that VP ellipsis can apply not only to VPs but also to other predicative elements:7

(33) a. I consider Fred [an excellent teacher] but I don’t think Mary is ________.
    b. *I looked for [an excellent teacher], but I don’t think Fred is ________.

Based on Baltin’s predicative constituent concept, I will now show how the Stranding Analysis deals with the sentences in (32). I will then provide my own reasons for adopting the predicative constituent concept.

Assuming that the sentences in (32) contain a predicative constituent, abbreviated PC, under the Stranding Analysis the base-structure of the sentences would be as follows:

(34) [CP Though [IP [ModalP may [vP we give [PC all the books to Sally]]]]]

In all of the sentences in (32), the subject pronoun we moves to [SPEC, IP] and the modal verb may moves to I. This leaves the remnant vP give all the books to Sally, which is topicalised. In (32a) the DP the books has moved out of the predicative constituent, perhaps to [SPEC, AgrOP] or some position in vP, and has stranded the quantifier, presumably in [SPEC, PC]. In (32b) and (32c), the topicalised material does not represent the entire vP. It is a partial constituent. If one is going to topicalise a constituent, then everything in that constituent must be fronted. The Stranding Analysis thus makes the proper predictions about all the sentences in (32).

Before ending this section on Baltin (1995) I would like to present my own evidence in support of the concept *predicative constituent*. There are phrases that do not qualify as Small Clauses but do form some kind of predicative element. Quantifier stranding provides evidence for the existence of such phrases. Consider the following Italian sentences:

(35) a. *Ho comprato [tutti i libri da Gianni].*  
   (I have bought all the books from Johnny)

   b. *Ho comprato i libri [tutti t1 da Gianni].*  
   (I have bought the books all from Johnny)

(36) a. *Ho comprato tutti i libri di Gianni.*  
   (I have bought all the books of Johnny's)

   b. *Ho comprato i libri tutti di Gianni.*  
   (I have bought the books all of Johnny’s)

The phrase *tutti i libri da Gianni (all the books from Johnny)* in (35a) seems to constitute a predicative constituent of some kind, because the quantifier can be stranded inside that constituent, as shown in (35b). On the other hand, the phrase *tutti i libri di Gianni (all the books of Johnny)* in (36a) does not constitute a predicative constituent, as can be seen in (36b). Because there is no predicative constituent in (36a), there is no phrase in which to strand a quantifier. (Remember from Chapters 2, 3 and 4 that object quantifiers can only be stranded in the Romance languages if they can be construed as actually being subjects of a Small Clause or something similar.)

This observation holds not only for Italian. I would say that the English glosses of the Italian sentences in (35b) and (36b) seem to produce the same grammaticality judgements as their Italian equivalents. Dutch, which uses the same preposition for the English *of* and *from*, provides additional evidence for the claim that (35) contains a kind of predicative constituent while (36) does not. Consider the following Dutch sentences:

(37) a. *Ik heb al de boeken van Jan gekocht.*  
   (I have all the books of Jan bought)

   b. *Ik heb de boeken allemaal van Jan gekocht.*  
   (I have the books all from Jan bought)

Example (37a) is ambiguous. It can be construed as containing a predicative constituent with the meaning *all the books from Jan*, or as containing a DP with a possessive PP complement that does not qualify as a predicative constituent. Sentence (37b) has only one reading. It would be ungrammatical if one interpreted the PP *van Jan* as a possessive PP. This again strongly suggests that a predicative constituent is a phrase very similar to a Small Clause in that its subject can move out
and strand a quantifier. Scrambling data from German also offers evidence that certain types of phrases seem to be predicative and form a kind of constituent:

\[(38)\]
\begin{align*}
\text{a. Ich habe die Studenten} & \text{1 [alle t1 während des Vortrages] gesehen.} \\
& \text{I have the students all during the lecture seen}
\end{align*}

\begin{align*}
\text{b. *Ich habe die Studenten} & \text{1 [alle aus t1 Prag] gesehen.} \\
& \text{I have the students all from Prague seen}
\end{align*}

The phrase meaning *all the students during the lecture* in (38a) clearly forms some kind of constituent, unlike the more stative phrase meaning *all the students from Prague* in (38b). Intuitively, it does make sense to posit a structure for phrases of a predicative nature that differs from the structure of phrases that are not predicative. For example, if books are bought from someone, one can speak of a kind of event or motion and the term *predicative* seems appropriate. In the case of possession, however, one would have to speak of a state rather than an event, which would make the term *predicative* less appropriate. What is interesting is that these intuitions regarding predicative constituents are backed up by stranding data. It would be beyond the scope of this thesis to analyse the exact syntactic, semantic and psychological factors that determine whether or not a phrase qualifies as a predicative constituent. What is important is that such phrases exist.

To summarise this section, the analysis in Baltin (1995) does not account for floating quantifiers as well as the Stranding Analysis, especially in sentences with subject control verbs, and Baltin’s three criticisms of the Stranding Analysis were shown to be invalid. Nonetheless, the concept of predicative constituent that Baltin introduced proves to be useful in explaining certain kinds of stranding. We will now continue to look at other versions of the Adverbial Analysis.


As originally pointed out in Kayne (1975 and 1981), a distinction can be made between floating quantifiers that appear to the right of the NP that they modify and those that appear to the left of it. This is illustrated in the following French examples from Doetjes (1997):^8

\[(39)\]
\begin{align*}
\text{a. Les enfants ont tous dormi} \\
& \text{the children have all slept}
\end{align*}

\begin{align*}
\text{b. J’ai tous voulu les voir.} \\
& \text{I have all wanted them see}
\end{align*}

(I wanted to see them all.)

---

These two phenomena, referred to as “rightward tous float” and “leftward tous float” or simply “R-tous” and “L-tous,” have traditionally been dealt with as separate phenomena, not only in Kayne but also in Sportiche (1988). Rather than account for R-tous and L-tous in separate analyses, Doetjes claims that the analysis of (39b) can be generalised to that of (39a). Accordingly, she refers to her approach as the Generalised L-tous Analysis. According to this analysis, floating quantifiers are generated in an adverbial position and bind an empty category in an argument position. It is thus this empty category that licenses the floating quantifier. In (39a) the empty category would be the trace of the subject DP *les enfants* (*the children*), which has moved from its VP-internal position to canonical subject position, while in (39b) the empty category would be the trace of the moved clitic pronoun *les* (*them*). Doetjes posits the following structures for (39a) and (39b), respectively:

\[(40) \quad \text{a. Les enfants ont [VP tous [VP t, dormi]]} \]
\[
\text{the children have all slept}
\]
\[
\text{b. J’ai [VP tous [VP voulu les voir t]]}
\]
\[
\text{I have all wanted them see}
\]

Included in the Generalised L-Tous Analysis are the claim that $\Phi$-feature and Case agreement between a floating quantifier and its associated DP is “a reflex of the binding relation between the floating quantifier and the DP trace”\(^9\) and the claim that a floating quantifier contains an empty pronominal element, as follows:

\[(41) \quad [\text{QP tous [DP pro]}] \]

The advantage of Doetjes’ Generalised L-tous Analysis is that it can account for the sentences in (39a) and (39b) in a unified manner, since in both sentences the floating quantifier appears to the left of the empty category that it binds. The Stranding Analysis can easily explain (39a), but (39b) cannot possibly be a case of stranding. It would have to be explained as a kind of focalisation of the quantifier.

Despite the advantage of Doetjes’ analysis, it has weaknesses. One weakness, also cited in Bobaljik (2003), is that it does not explain why floating quantifiers should need to bind anything in the first place. This is not claimed for other adjuncts to VP. Under the Stranding Analysis as I am defending it, the issue of binding an empty category is irrelevant because a stranded quantifier always precedes the trace of the DP that has stranded it. There are no questions about binding or being licensed by empty categories.

Another potential weakness in Doetjes’ analysis is her claim that the $\Phi$-feature and Case agreement between a floating quantifier and the DP that it is associated with arises from the binding relation between the quantifier and the trace of its associated DP. The question is whether this binding relationship, which is nothing more than

co-indexation, can really produce Φ-feature agreement. In a discussion of Doetjes’ theory in Fitzpatrick (2006) it is suggested that it is the nominal element pro contained in the floating quantifier that makes the agreement possible. This is an interesting idea, however agreement is normally treated as something that arises from a SPEC-head relationship, at least in the case of agreement between verbs and subjects or objects. Or, as I pointed out in Chapter 1, within the nominal domain syntactic heads share Φ-feature and Case agreement. The claim that an adjunct to VP somehow inherits Φ-features and Case from nominal heads is thus not convincing. Furthermore, one must ask why floating quantifiers are affected by this agreement phenomenon while other adjuncts to VP that have a semantic relationship with the subject are not. Consider a subject-oriented adverb like stupidly, which appears in the same position as a floating quantifier and has a clear semantic relationship with the subject. The following two French sentences will illustrate what I mean:

(42) a. Les enfants ont stupidement répondu.
the children have stupidly answered

b. Les enfants ont répondu stupidement.
the children have responded stupidly

These sentences have different meanings. In the first sentence the adverb occupies the same position that the floating quantifier tous would occupy and is a true subject-oriented adverb, since the meaning is that it was stupid of the children to answer at all. The second sentence does not mean that it was stupid of the children to answer. It means that they answered in a stupid manner. Agreement between the adverb in (42a) and the DP les enfants (the children) is theoretically possible, since the adverb could take on the form of the adjective that it is derived from. However, such agreement does not occur with an adverb the way it does with a floating quantifier:

the children have stupid (masc. pl.) answered

b. Les enfants ont tous répondu.
the children have all (masc. pl.) answered

Given Doetjes’ claim that a floating quantifier is an adjunct to a verbal phrase, she might have to explain why no Φ-feature agreement is produced in (43a) in contrast to (43b) even though such agreement is morphologically possible. She would presumably rely on her claim that a floating quantifier, unlike the adverbs in (42), is a nominal element. However, the adverb in (42a) is also derived from a nominal element, an adjective.

I would also like to suggest that positing a covert nominal element (pro) in the QP as illustrated in (41) is questionable in a non-pro drop language like French or English.
The covert nominal element is used in order to distinguish floating *tous* from the bare quantifier *tout* (*everything*), which, because it moves to preverbal position like a clitic pronoun, is also considered to be a floating quantifier:

(44) Jean a tout lu.
John has everything read

Doetjes analyses this sentence as follows:

(45) Jean a [\(VP\) tout [\(VP\) lu ti]]

Doetjes argues that because floating *tous* contains a nominal element, it cannot be an operator and is prevented from licensing the empty categories that follow it in the sentences in (40). (The empty categories in (40) are licensed by the elements of which they are a trace.) However, the quantifier *tout* in (44) and (45) does not contain a nominal element and can therefore function as an operator and license the empty category that follows it, which is its own trace.

Doetjes bases her claims first of all on the arguments in Chomsky (1981) that an empty category can only be licensed if locally bound by an operator, and secondly on evidence presented in Cinque (1990) that bare quantifiers in Italian can license an empty category when left-dislocated, just as the left-dislocated quantifier *tout* seems to be doing in (45):

(46) a. Qualcuno, (lo) troveremo
someone (him) we will find

b. Qualcosa, di seguro, io (lo) farò
something for sure I (it) will do

Doetjes offers various kinds of evidence for positing this empty category, none of which I find very compelling. One piece of evidence is that the French floating quantifier *chacun* (*each*) can in some idiolects appear with a complement partitive, which would presumably be a realisation of the covert nominal element:

(47) a. Les enfants ont chacun acheté une voiture.
the children have each bought a car

b. Les enfants ont chacun d’eux acheté une voiture.
the children have each of them bought a car

This evidence is not compelling because *each* and its equivalents in other languages are not comparable with *all* and its equivalents. First of all, *each* and its equivalents in French, Italian, German etc. remain in the singular although they are associated with a plural noun. Secondly, *each* appears in positions where *all* would never be found, as the following French sentence and its English translation demonstrate:
(48)  
a. Les enfants ont acheté deux voitures chacun.
   the children have bought two cars each

   the children have bought two cars all

Thirdly, what applies to chacun in (47) does not apply to tous, since replacing chacun with tous in (47b) would produce an ungrammatical sentence.

A second argument that Doetjes offers in support of the empty category illustrated in (41) is that some floating quantifiers cannot select an overt DP but can appear alone. She concludes that these floating quantifiers cannot occur with a DP because they already contain a covert DP, as in (41). She offers the following examples, first from French and then from Dutch:

(49)  
a. Les enfants sont tous les trois allés à la plage
   the children are all the three gone to the beach

b. *Tous les trois les enfants sont allés à la plage
   all the three the children are gone to the beach

c. Tous les trois sont allés à la plage
   all the three are gone to the beach

(50)  
a. De kinderen zijn allen gekomen.
   the children are all come

b. *Allen kinderen zijn gekomen.
   all children are come

c. Allen zijn gekomen.
   all are come

d. Alle kinderen zijn gekomen.
   all children are come

e. *Alle zijn gekomen.
   all are come

This evidence simply does not force the conclusion that a floating quantifier contains a covert nominal element. Regarding (49), the reader is reminded of my arguments in Chapter 4 that tous les trois is not a quantifier that occupies Q, and is therefore not eligible to be a floating quantifier to begin with. It is simply a QP that can appear in apposition to a DP. This approach accounts for all the sentences in (49).
Regarding (50), once again, the disparities between the use of *alle* vs. *allen* do not prove that there is a covert DP contained in the Dutch floating quantifier *allen*. Two facts are relevant. First of all, no one really understands the inflection on *allen*, and one must ask whether it is a question of orthography, since in the spoken language (50c) is actually pronounced like (50e). Secondly, this argument is very Dutch-specific and not valid even for languages closely related to Dutch. Note the following examples from German (51), Swedish (52) and English (53):

(51)  

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<tr>
<td>a. Die Kinder sind alle gekommen.</td>
<td>the children are all come</td>
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<td>b. Alle die Kinder sind gekommen.</td>
<td>all the children are come</td>
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<td>c. Alle sind gekommen.</td>
<td>all are come</td>
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(52)  

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<td>a. Barnerna har alla kommit.</td>
<td>children the have all come</td>
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<td>b. Alla barnerna har kommit.</td>
<td>all children the have come</td>
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<td>c. Alla har kommit.</td>
<td>all have come</td>
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(53)  

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<tr>
<td>a. The children have all come.</td>
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<tr>
<td>b. All the children have come.</td>
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<td>c. All have come.</td>
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In other words, the evidence that a floating quantifier contains an empty nominal element as illustrated in (41) is weak. Under the Stranding Analysis it is not necessary to postulate a covert nominal element in order to differentiate floating *tous* from floating *tout*. (The universal quantifier can of course select the empty category PRO, but this is not the same.) Stranding can admittedly not explain L-*tous*, which seems to be a form of focalisation.

The biggest weakness in Doetjes’ approach is that it purports to provide a unified analysis for two linguistic phenomena, L-*tous* and R-*tous*, but in fact accomplishes the opposite by failing to handle the following two sentences, which are clearly related, in a unified manner:

(54)  

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<tbody>
<tr>
<td>a. Tous les enfants ont dormi</td>
<td>all the children have slept</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Les enfants ont tous dormi</td>
<td>the children have all slept</td>
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The Generalised L-tous Analysis has one advantage. It attempts to account for L-tous and R-tous in a unified manner. The question is whether this one advantage is worth the cost of the weaknesses that come with it. The L-tous phenomenon is very limited. It does not occur in the Germanic languages and in the Romance languages it occurs primarily in French, although it can occur to some extent in Spanish and perhaps in some varieties of non-standard Italian. Furthermore, it is specific to the quantifier *tous*, since it cannot be done with other kinds of adverbial adjuncts:

(55) 

a. Je veux tous qu’ils le lisent.
   I want all that they it read

b. *Je veux vite qu’ils le lisent.
   I want fast that they it read

c. *Je veux soigneusement qu’ils le lisent.
   I want carefully that they it read

d. *Je veux volontiers qu’ils le lisent.
   I want gladly that they it read

In accordance with Kayne (1975 and 1981), Sportiche (1988) and Cinque (1999) I would propose that L-tous and R-tous are not the same phenomenon and that a unified analysis of the two is not worth the price that has to be paid for it. Perhaps another way of expressing this is as follows:

The phenomenon in (54) is attested cross-linguistically and can be accounted for in a unified approach by the Stranding Analysis. L-tous is language-specific and “*tous*-specific.” To opt for Generalised L-tous with its limited applicability and weaknesses and reject the Stranding Analysis does not seem to be a fair trade-off.

Before ending the discussion of the Generalised L-tous Analysis, a word should be said about my suggestion that L-tous is a kind of focalisation of the quantifier. As Doetjes herself points out, L-tous is only possible if a pronoun is involved:

(56) 

a. J’ai tous voulu les voir.
   I have all wanted them to see

b. *J’ai tous voulu voir les enfants.
   I have all wanted to see the children

(57) 

a. Je veux tous qu’ils viennent.
   I want all that they come

b. *Je veux tous que les enfants viennent.
   I want all that the children come
Regardless of whether one follows the Generalised L-tous Analysis or another approach, perhaps treating L-tous as a special kind of focalisation or topicalisation, one must explain the discrepancy between the (a) and (b) sentences in (56) and (57). Doetjes claims that it is a binding problem. In the (b) sentences the floating quantifier binds an R-expression, which constitutes a violation of Principle C. In the (a) sentences, a pronoun is bound but not inside its governing domain, so Principle B is not violated. I cannot offer an explanation for the discrepancy in (56) and (57) at this time, but I question the claim that it is the result of a binding problem as suggested by Doetjes. The following sentence is also perfectly grammatical:

\[(58)\]  
\[\text{J'ai voulu tous les voir.}\]  
\[\text{I have wanted all them to see}\]

Doetjes approaches this type of sentence by arguing that the binding domain of the pronoun is the VP, which contains an accessible subject in the form of the VP-internal subject. I would argue that if one takes the binding approach that Doetjes takes, it is more difficult to say that the floating quantifier \textit{tous} binds the pronoun \textit{les} outside of the pronoun’s governing domain. I leave this matter for future research.

To summarise our review of the Generalised L-tous Analysis, its advantage is that it attempts to explain L-tous and R-tous in a unified manner. Its disadvantages are that it does not explain why a floating quantifier must bind an empty category, it posits a covert nominal element in QP that cannot really be attested, it offers a weak explanation for the agreement features on a floating quantifier, and the binding arguments that it relies on are questionable, as seen in (58). The biggest weakness of the Generalised L-tous Analysis is that it sacrifices the unified approach to the sentences in (54) which is provided by the Stranding Analysis and which is valid cross-linguistically in order to explain L-tous, which is limited to mainly to French and to the universal quantifier and which can perhaps be explained by other means, such as focalisation.


It is not the aim of Bobaljik (2003) to take sides in the Stranding vs. Adverbial debate, and he does not present his own analysis, however he does give an excellent survey of the various approaches taken to floating quantifiers as of 2003 and offers his own comments and criticisms. He ends his article with the statement that no analysis to date has been completely successful in predicting the distribution of floating quantifiers. In this section I will address Bobaljik’s criticisms of the Stranding Analysis.

Like most critics of the Stranding Analysis, Bobaljik begins his criticism by stating that the Stranding Analysis incorrectly predicts the grammaticality of sentences such as \textit{The students have arrived all} and \textit{The students were seen all}. I have dealt with this criticism elsewhere in this thesis and will not deal with it again here.
goes on to say that the Stranding Analysis also cannot explain why some (but certainly not most) French speakers accept the following sentences:

(59) a. ?Les enfants ont été vus tous.
    the children have been seen all
b. ?Les enfants sont venus tous.
    the children are come all
c. ?Les enfants ont dormi tous.
    the children have slept all
d. ?Les enfants ont vu ce film tous.
    the children have seen this film all

Bobaljik fails to mention (and so does Sportiche) that sentences such as these are quite acceptable in other Romance languages. For example, Belletti (1990) and Cinque (1999) have pointed out that past participles and other non-finite verbal elements in Italian can optionally move up to a higher position. In Sections 2, 3 and 4 of Chapter 2, I showed examples of past participles, passive participles, infinitives and gerunds that had optionally moved up, not only in Italian but also in other Romance languages. In view of this phenomenon, the sentences in (59) come as no surprise. They simply show that the optional movement of non-finite verbal elements that one finds in Italian, Romanian and Spanish is also present in French, but to a lesser extent. Given that non-finite verbal elements can move, the sentences in (59) pose no problem for the Stranding Analysis.

Bobaljik’s second criticism of the Stranding Analysis has to do with a disparity between A-movement and A-bar movement. Why, he asks, can floating quantifiers in English be associated with normal DP traces but not with wh-traces? He refers to the following examples:

(60) a. *The professors who Taylor will have all met before the end of the term...
    b. *Which professors will Taylor have all met before the end of the term?

I must point out that these examples are not well chosen, because their ungrammaticality has nothing to do with quantifier stranding. Rather, they have to do with various factors that I discussed in Chapter 2, Sections 6 and 7.3. First of all, the quantifiers in (60) are object quantifiers, and object quantifiers are only stranded in scrambling languages like German and Dutch. The German equivalents of the sentences in (60) are grammatical:
There is another problem with (60) in addition to the fact that English does not allow the stranding of object quantifiers, and that is the fact that in English the universal quantifier can only select bare wh-words, not full wh-DPs such as the ones seen in the German examples in (61). This was also discussed in chapter 2. The following examples illustrate:

(62) a. Who all has come?
    b. *Which students all have come?
    c. What all did you see?
    d. *Which things all did you see?

In summary, the problems with (60) could have to do with the restriction on the stranding of object quantifiers in non-scrambling languages and with the fact that the universal quantifier in English can only select bare wh-words. It cannot be denied, however, that even in the case of a bare subject wh-word, English does not allow stranding:

(63) a. Who all has come?
    b. *Who has all come?
    c. What all has happened?
    d. *What has all happened?

Examples (63a) and (63b) are impossible in German because the German word for who (wer) is always singular and cannot combine with a plural quantifier. However, examples (63c) and (63d) are both possible in German:

(64) a. Was alles ist passiert?
    b. Was ist alles passiert?

The point that I want to make is that while Bobaljik’s observations about English are correct, German allows stranding under A-bar movement where English does not. The problem therefore seems to have to do with English-specific properties, not with
a general restriction on stranding under A-bar movement. Bobaljik in fact notes this and ultimately leaves the matter open. He does not rule out the possibility that languages that allow stranding under A-bar movement do so because A-bar movement is preceded by short A-movement. However, as I pointed out in Chapter 2, Section 7.3, English also has instances of A-bar movement preceded by A-movement and nonetheless disallows stranding by wh-words. In (63b), for example, the wh-word undergoes A-movement from VP to PerfP to IP (TP and AgrSP) before finally undergoing A-bar movement to CP, and yet stranding is not licensed in an A-trace position. I therefore stick with my conclusion that just as the selectional properties of the universal quantifier vary within the Germanic language family (the universal quantifier can select full wh-DPs in German but only bare wh-DPs in English), so does the ability of wh-words to strand a quantifier vary within the Germanic language family.

Bobaljik’s third challenge to the Stranding Analysis is actually a continuation of the second one, since it also involves A-bar movement. It is based on data from West Ulster English contained in McCloskey (2000). Note the following examples, all of which are ungrammatical in Standard English:10

(65) a. Who did you meet all when you were in Derby?
   b. I can’t remember what I said all.
   c. What did he say all that he wanted?

In Standard English, the quantifier would have to immediately follow the wh-word in each of these sentences. Examples (65a) and (65b) are a double-challenge because they not only involve the stranding of a quantifier by a wh-word but the stranding of an object quantifier. West Ulster English thus shows signs of being like German. The similarity to German ceases in example (65c), however. In this sentence an object quantifier has been stranded in the specifier position of a lower CP. German does not allow this, as the following sentence shows:

(66) *Welche Würste hat der Peter gesagt alle dass der Hund gegessen hat?
    which sausages has the Peter said all that the dog eaten has

West Ulster English seems to have completely reset the parameters. The following two sentences, both of which are ungrammatical in Standard English, form a sort of minimal pair for A-movement and A-bar movement:

(67) a. Who was throwing stones all around Butcher’s Gate?
   b. *They were throwing stones all around Butcher’s Gate.

Bobaljik says that these sentences suggest that in West Ulster English, unlike in Standard English, it is A-bar movement rather than A-movement that licenses a floating quantifier. I would suggest something different. In (67b), assuming that subjects are base-generated in [SPEC, vP], the quantifier is located below its base-

position, so the sentence cannot be generated. The same would have to be said about (67a). The quantifier in this sentence can therefore only be an adverb. Bobalijk points out that McCloskey draws a comparison between all in (67a) and adverbs like exactly and precisely. One can insert either of these adverbs into the position occupied by all in (67a) and get a grammatical sentence in both West Ulster English and Standard English. What is even more interesting is that the meaning of the sentence stays the same when all is replaced by precisely or exactly. In fact, the same holds true for all the sentences in (65), in which replacing all with precisely or exactly would first of all not change the meaning and secondly would produce grammatical sentences also in Standard English. The claim that all in (65) and (67a) is an adverb raises two serious questions. First of all, is there any independent support for such a claim, and secondly, why not just say that all floating quantifiers are adverbs?

Regarding the first question, the adverbialisation of the universal quantifier is certainly not unprecedented in the Germanic languages. In this thesis we have seen examples in German, in which the plural nominal form alle can appear as the neuter singular form alles, in Dutch, in which the nominal form allen is more often than not replaced by the adverbial allemaal, and in Swedish, in which the quantifier alla is frequently replaced with the adverbial allihop.

(68)  a. Wer war alles da?                                        (German)
    who was all there

    b. De Studenten zijn allemaal gekomen.         (Dutch)
    the students are all come

    c. Doktorerna undersöker allihop patienten.   (Swedish)
    doctors the examine all patient the

Because the universal quantifier in English is uninflected for case and gender, it lends itself to adverbialisation. That all can be nominal or adverbial in English is clearly demonstrated by the ambiguity of the following sentence:

(69)  The dogs are all wet.

In one reading of this sentence all is a stranded quantifier modifying the dogs and in the other reading it is an adverb modifying wet. The fact that all can modify an adverb in sentences like Where all did you go? also shows that it can be adverbial in English.

Regarding the second question, several reasons have been offered in this thesis for why one cannot say that all floating quantifiers are simply adverbs. Floating quantifiers in many languages are inflected. Adverbs are not. Floating quantifiers and adverbs do not always appear in the same positions, as we saw in the Spanish, Romanian and Swedish examples in the introduction to this chapter. Most importantly, a major generalisation would be missed if one said that there was no
relationship between the following sentences, even though there is a subject trace in every position that can be occupied by a floating quantifier:

\[(70)\]
\[\begin{align*}
\text{a. All the children might have been sleeping.} \\
\text{b. The children all might have been sleeping.} \\
\text{c. The children might all have been sleeping.} \\
\text{d. The children might have all been sleeping.} \\
\text{e. The children might have been all sleeping.}
\end{align*}\]

In concluding his discussion of West Ulster English, Bobaljik says that it poses a challenge to any theory of floating quantifiers and that ultimately we are faced with two unattractive alternatives. Either we say that the quantifier *all* in West Ulster English has different lexical properties than it does in other versions of English or we say that there is some independent syntactic parameter, yet to be discovered, that distinguishes West Ulster English from Standard English. His conclusions are thus not incompatible with my own, except that I am not so upset about saying that in West Ulster English the adverbial *all* can be used more flexibly than it can in Standard English, a phenomenon that is comparable to the adverbialisation that we have seen in German *alles*, Dutch *allemaal* and Swedish *allihop*.

The fourth criticism that Bobaljik raises against the Stranding Analysis is one that I have referred to already, namely, that there are instances in which a floating quantifier and its associated DP seem to have never formed a constituent. Some of his examples involve *each* and its French equivalent *chaque*. I have not considered these quantifiers in this thesis because they are too different from *all* and its equivalents. Consider the following sentences:

\[(71)\]
\[\begin{align*}
\text{a. Each child has eaten one sandwich.} \\
\text{b. *A child has each eaten one sandwich.} \\
\text{c. The children have each eaten one sandwich.} \\
\text{d. The children have eaten one sandwich each.}
\end{align*}\]

The (a) and (b) sentences show us that unlike *all*, *each* is singular and cannot float when modifying a singular noun. The (c) sentence shows us that for *each* to float it must be associated with a plural noun although it remains in the singular. This lack of number agreement shows that *each* cannot be the same kind of syntactic category as *all*. The (d) sentence shows us that *each* appears in a position that is unavailable to *all*. My claim that *each* and *all* are two different kinds of category is nothing new. In Zimmermann (2002), which is titled *Boys Buying Two Sausages Each*, one can find convincing arguments that so-called *distance distributivity elements* like *each* are fundamentally different from floating quantifiers. It is for these reasons that in this thesis I will not consider arguments related to *each* as being relevant to the question of quantifier stranding.

Other examples that Bobaljik offers in which a floating quantifier and its associated DP seem to have never formed a constituent are the following from English and French:
(72)  a. Larry, Darryl and Darryl have all come into the café.
    b. *All Larry, Darryl and Darryl have come into the café.

(73)  a. Some of the students might all have left in one car.
    b. *All some of the students might have left in one car.

(74)  a. Elles sont toutes les trois intelligentes.
    they    are   all     the three   intelligent
    b. *Toutes les trois elles sont intelligentes.
        all    the three    they    are     intelligent

(75)  a. We have all three of us completed the assignment on time.
    b. *All three of us we have completed the assignment on time.

I discussed an example like (72) in the introductory section of this chapter. I suggested that there might be a Surface Structure constraint that prevents the universal quantifier, which is plural, from appearing before a singular noun and that this constraint can be circumvented by stranding. This type of constraint is admittedly undesirable in a theory, but, as I said in the introduction to this chapter, the Adverbial Analysis would also require a constraint, perhaps lexical in nature, in order to prevent the universal quantifier from selecting a compound DP consisting of singular nouns. Thus, regarding (72), it is not clear that the Adverbial Analysis is really preferable.

Example (73) is interesting. I personally find the sentence anomalous and question its pertinence in this discussion. In order to make this sentence acceptable, I would have to do one of two things. Either I would change all to together, as in (76), or I would make all the subject of an appositive Small Clause, as in (77):

(76) Some of the students might have left together in one car.
(77) Some of the students might have left all in one car.

Regarding (74), I presented several reasons in Chapter 4 for why one cannot consider the phrase toutes les trois (all the three) in languages like French, Spanish, Portuguese and Catalan to be universal numeric quantifiers comparable to the ones found in Dutch, Italian and Romanian. They behave like appositive QPs, not like floating quantifiers, and they do not have the internal structure of floating quantifiers. The same could be said of the English phrase all three of us in (75).

To summarise what has been said far so in this section, we have looked at four challenges to the Stranding Analysis presented in Bobaljik (2003). I have argued that these challenges, which are of a syntactic nature, do not offer compelling reasons for abandoning the Stranding Analysis. Bobaljik also presents challenges to the Stranding Analysis that are semantic in nature, which I would now like to comment on.
Bobaljik begins by pointing out, correctly, that one of the reasons given in Sportiche (1988) for preferring the Stranding Analysis is that it “transformationally” links two sentences that not only contain the same elements but also have the same meaning. Bobaljik then states that if Sportiche’s claim about meaning is true, a non-floating quantifier and its floating counterpart should quantify over their associated DPs in the same way. He then presents evidence that floating and non-floating quantifiers do not quantify in the same way, which he says should be taken as evidence against the Stranding Analysis. What I will argue is that while Sportiche’s argument on semantics is interesting, it should not be taken as absolutely vital to the Stranding Analysis. I have already argued in this chapter that different scopal relations can arise as a result of movement, whether stranding is involved or not, and that this should not be considered a reason to abandon the Stranding Analysis. Consider the following sentences from Bobaljik, which indicate semantic differences between floating and non-floating quantifiers:

(78) a. All lions, tigers and bears are scary.
    b. Lions, tigers and bears are all scary.

(79) a. All students, professors and clowns have come to the meeting.
    b. Students, professors and clowns have all come to the meeting.

(80) a. All the contestants could have won.  $\forall > \emptyset$,  $\forall > \emptyset$
    b. The contestants could have all won.  $\forall > \emptyset$,  $\forall > \emptyset$

Let’s take a careful look at these sentences. In (78a), the meaning is that every lion, every tiger and every bear is scary. Bobaljik assumes, and I find the assumption reasonable, that in this sentence a universal quantifier has selected conjoined DPs, so that we have the following structure:

(81) $\forall$ $\emptyset$ all $\forall$ lions, tigers and bears]

Example (78b) allows this reading also, so that we could have a case of normal quantifier stranding. However, (78b) also allows a second reading that is unavailable to (78a), namely, that lions are generally scary, tigers are generally scary and bears are generally scary. Bobaljik says that this is because a floated quantifier and a non-floated one somehow quantify in different ways. I do not believe that this is necessarily the reason for the second reading that is available to (78b). Rather, I would suggest that in (78a) and the second (generic) reading of (78b) it is the DPs/NPs that differ from each other. In (78a), we do not have bare NPs, and there is universal reference. In (78b), we have bare NPs, which normally have a generic meaning in English and refer to a species in general rather than to individual members of that species. As a result of this generic meaning, under the second (generic) reading of (78b) the word all could be omitted without changing the meaning of the sentence. This is certainly not true of (78a), since omitting the quantifier from (78a) would make the NPs generic rather than universal. What this
shows is that it is the DPs in (78a) and (78b) that are different, not the quantifiers, as Bobaljik has claimed.

Nonetheless, even if the DPs in (78a) and (78b) are different in nature, Bobaljik still has a point, although he expresses it somewhat between the lines: What is it that prevents a second reading of (78a), or, what is it that allows a second reading of (78b)? As I pointed out while discussing example (72b) above, it seems that although all can select conjoined DPs that are singular, such as Larry, Daryl and Daryl, there is a Surface Structure constraint against the appearance of a plural quantifier before a singular DP. The constraint can be circumvented by stranding. I am going to suggest that this is what is going on in the second (generic) reading of (78b). That is, even though the NPs are in the plural, their semantics is singular because they refer to a single species, and this triggers the Surface Structure constraint that blocks the universal quantifier from appearing in front of a singular noun. To demonstrate that under the second reading of (78b) the semantics of the NPs is singular, I point out that (78b), unlike (78a), can be paraphrased using singular DPs, as follows:

(82) a. A lion, a tiger and a bear are all scary.
    b. The lion, the tiger and the bear are all scary.
    c. The species “lion,” the species “tiger” and the species “bear” are all scary.

In all of these sentences, the reading is that lions, tigers and bears are generally scary, and if the quantifier is not floated the sentence is ungrammatical. I would therefore suggest that in these sentences a universal quantifier has selected a series of singular DPs but because a plural quantifier sounds strange before a singular DP, stranding is required, just as in (72). For the sake of discussion I will assume a base-structure like the following for the sentences in (82):

(83) \[ QP all [DP species lion, species tiger and species bear] \]

As for the second reading of (78b), because its semantics are the same as the sentences in (82), its base-structure may be analysed as (83). The result would be that the same Surface Structure constraint that forces stranding in (82) also forces stranding in the second reading of (78b). In summary, both (81) and (83) are possible. In the case of (81), stranding is optional, so that both (78a) and (78b) can be derived from it. If (83) is chosen, because of the singular number (or singular semantics) of the DPs, stranding is obligatory, resulting in (78b). Since (78b) can result from either (81) or (83), two readings are possible.

Admittedly, the explanation that I have offered for the discrepancy seen in (78) is a bit tenuous, since it depends not only on a Surface Structure constraint but also on interpreting plural nouns as singular because of their singular semantics. The question is whether the Adverbial Analysis really explains the discrepancy in (78) any better than the constraint that I have suggested. That is, does one really explain the different semantics in (78a) and (78b) by simply saying that in (78b) the quantifier is really an adverb? Adverbiality does not necessarily mean different
semantics. This is illustrated by the following sentences, also from Bobaljik, which have the same semantics:

(84)  
a. Horses will always eat sugar.  
b. Horses will all eat sugar.  
c. All horses will eat sugar.

Bobaljik in fact does not say that adverbial quantification and quantification by a nominal element have to be different. He simply says that they can be different, and he makes the observation that floating quantifiers and their non-floating counterparts can also produce different semantics. It seems, then, that what is at stake is not the Stranding Analysis itself but the supposition that stranding should not be able to affect meaning. There is no a priori reason why this should be so. As I have often mentioned, stranding affects positioning, positioning affects scope, and scope affects meaning.

At this point I would like to comment on the claim made in Sportiche (1988) that the fact that the following two French sentences mean the same thing provides semantic support for the Stranding Analysis:

(85)  
a. Tous les enfants ont dormi.  
    all the children have slept  
b. Les enfants ont tous dormi.  
    the children have all slept

It is not my intention to deny the validity of Sportiche’s claim. If two sentences contain the same elements and have the same meaning, it certainly is not unreasonable to expect them to have been derived from the same source. My point is that semantics need not remain the same after movement, including movement that results in stranding.

We turn now to (79), which is similar to (78). I repeat (79) here for convenience:

(86)  
a. All students, professors and clowns have come to the meeting.  
b. Students, professors and clowns have all come to the meeting.

In (86b), the conjoined DPs are non-universal. They refer only to a type of human being, not to every individual in that type. The base-structure of (86b) would therefore be analogous to that of (78b) (Lions, tigers and bears are all scary), in other words, more like (83). This makes stranding obligatory. Once again, I would say that the difference between the two sentences in (86) does not necessarily mean that the quantifier in (86b) is an adverb rather than a stranded quantifier.

I mention (80), repeated here, only because I disagree with Bobaljik’s judgements.
(87) a. All the contestants could have won. $\diamond \forall \cdot \forall > \diamond$
   b. The contestants could have all won. $\diamond > \forall \cdot *\forall > \diamond$

Bobaljik states that (87a) can mean either that all the contestants had an equal chance of winning but that there would be only one winner, or that all the contestants could have won the same contest, so that there would be several winners. He claims that (87b) only has the latter interpretation. I think that not everyone would agree with that. I find both sentences equally ambiguous.

In this section I have provided an abbreviated account of syntactic and semantic arguments against the Stranding Analysis presented in Bobaljik (2003). The syntactic arguments were not convincing. The semantic arguments were much more interesting and challenging. They are partially based on the premise that stranding should not affect meaning, which I believe is questionable. Furthermore, as I pointed out, even if one assumes that floating quantifiers are adverbs, one has not necessarily arrived at a real explanation for the different semantics. Bobaljik himself ends his discussion by saying that there are still unanswered questions. I would agree that there are questions that need to be answered, especially those of a semantic nature, but that there is no compelling reason to abandon the Stranding Analysis.


Fitzpatrick argues that the ability of a quantifier to float is dependent on whether it is adnominal or adverbial and on whether A-bar movement or A-movement has occurred. Adnominal floating quantifiers can only occur in instances of A-bar movement, while adverbial floating quantifiers can only occur under A-movement.

In Fitzpatrick’s terminology, an adnominal floating quantifier is one that is base-generated as an adjunct to a nominal phrase and can be stranded in the manner postulated by Sportiche (1988) provided that its associate DP has undergone A-bar movement. One finds adnominal floating quantifiers in Japanese and West Ulster English. Examples will be provided later in this section.

An adverbial floating quantifier, as the name suggests, is one that is base-generated as an adjunct to a verbal phrase and can occur in cases of A-movement. Fitzpatrick follows Doetjes (1997) and assumes that all floating quantifiers in Standard English and French are base-generated as adjuncts to a verbal phrase and contain an empty nominal element that is co-indexed with the quantifier’s associate DP, as follows:

(88) [The students], have [VP [all pro$_1$] [VP t$_1$ had lunch]].
Note that the sentence in (88) is an instance of A-movement. 11

Fitzpatrick also partially follows Bošković (2004), according to whom stranding cannot take place in a θ-position. Fitzpatrick claims that adverbial quantifiers such as those in French and English cannot be floated in their θ-position, but that adnominal quantifiers such as those in West Ulster English and Japanese can.

I have already presented my reasons for not following Doetjes (1997) in Section 3. Regarding Bošković (2004), if one follows the Split VP Hypothesis and assumes that the base-position (and θ-position) of subjects is [SPEC, vP], one only has to look at the data that I presented in Chapters 2 and 3 to see that [SPEC, vP] is a very popular place for stranding a quantifier. From my standpoint, therefore, Fitzpatrick does not start out on very solid ground. Furthermore, as the reader will see in the following discussion, many of his conclusions are unfortunately based on questionable grammaticality judgements. Ultimately I believe that the manner in which he distinguishes adverbial from adnominal floating quantifiers is questionable and that he does not succeed in showing that stranding/floating depends on whether A-movement or A-bar movement has occurred. Nonetheless, his observations and arguments are interesting and worth looking at. He begins with the following data from West Ulster English as presented in McCloskey (2000):

(89) a. *The criminals have been arrested all.
   b. What did he say that he wanted all?

Fitzpatrick says that since the quantifier is in the same position in both of these sentences but only one of the sentences is grammatical, a dual analysis that allows for both adverbial and adnominal floating quantifiers is inevitable. (I agree, with this statement, but for totally different reasons, as I will point out shortly.) There are two reasons why (89a) is ungrammatical if one follows Fitzpatrick. First of all, the quantifier in this sentence is an adverbial quantifier that is stranded in its θ-position, which, following Bošković (2004), is not possible. Secondly, and more importantly, Fitzpatrick claims that an adverbial floating quantifier can only occur under A-bar movement, and (89a) is a case of A-movement. He claims that an adnominal quantifier can only be stranded under A-bar movement because he believes that stranding is a kind of extraction from DP and that extraction from DP under A-movement is impossible, as shown in the following sentence:

(90) a. Which student did you see a picture of?
   b. *The mayor arrived a friend of.

---

11 While Fitzpatrick’s use of the term *adverbial* is certainly not inappropriate when referring to adjuncts to a verbal phrase, to avoid confusion I must point out that Doetjes herself calls floating quantifiers in English and French adnominal, even though they are base-generated as adjuncts to a verbal phrase, because they are actually adjacent to the nominal element *pro*. In this section I will use Fitzpatrick’s terminology to avoid confusion.
Fitzpatrick attributes the grammaticality difference between (90a) and (90b) to the strong wh-feature that drives A-bar movement. Regarding (89b), Fitzpatrick follows McCloskey (2000) and says that the quantifier in this sentence is an adnominal that can be stranded under A-bar movement even though it is in its 0-position.

I think that there are three problems with Fitzpatrick’s approach so far. First of all, to say that the quantifier in (89a) is adverbial while the one in (89b) is adnominal is not only counter-intuitive but not supported by the facts. As I pointed out in Section 4 of this chapter, the quantifier in (89b) can be replaced by adverbs like *exactly* and *precisely* without even changing the meaning of the sentence. Also, English and other non-scrambling languages do not allow the stranding of object quantifiers, which means that the quantifier in (89b) cannot have gotten into its position under any analysis that treats it as an adnominal. It must therefore be an adverb.

The second problem with Fitzpatrick’s approach is that it incorrectly compares stranding à la Sportiche, which Fitzpatrick accepts, with the extraction that is taking place in (90b). In (90b) a DP has been extracted from a PP inside another DP. Under the Stranding Analysis, there is no extraction from a DP. There is simply movement of a DP from a QP. The claim that stranding should not be able to take place under A-movement because of (90b) is thus highly questionable.

The third problem with Fitzpatrick’s analysis is that if one considers the following data from German, it becomes very difficult to say that the ability of a quantifier to float has anything to do with whether A-movement or A-bar movement has occurred:

(91)  a. Welche Studenten sind alle gekommen?
      which students are all come

      b. Ich glaube, dass die Studenten alle gekommen sind.\textsuperscript{12}
      I believe that the students all come are

Under Fitzpatrick’s analysis one would have to say that in (91a), an instance of A-bar movement, the quantifier must be an adnominal while in (91b), a case of A-movement, it is an adverbial. I see no motivation for claiming that there is any difference between the quantifiers in the (a) and (b) sentences. In fact, it would make sense to say that they are both adnominal, since German has another floating quantifier that is really adverbial. It is morphologically related to the quantifiers in (91) but is not inflected for agreement with its associated DP:

(92) Wer ist alles gekommen?
    who is all (Adv.) come
    (Who all has come?)

\textsuperscript{12} As most readers probably know, German uses the auxiliary verb meaning *to be* for unaccusative verbs. In these sentences I have applied literal translation.
Fitzpatrick would presumably say that German floating quantifiers are the same as French and English ones, namely, adverbial. Whether he calls them adverbial or adnominal, the sentences in (91) pose a problem for his analysis, especially if he wants to stick to his claim that the distinction between A-movement and A-bar movement really makes a difference in stranding. So far, then, there are problems with both of the main aspects of Fitzpatrick’s analysis. The adverbial/adnominal distinction is not clear and the significance of A-movement vs. A-bar movement is not clear either.

I have explained why Fitzpatrick claims that adnominal quantifiers can only be stranded under A-bar movement. It is because of his very questionable belief that quantifier stranding involves the same kind of extraction that one sees in (90b). I have not yet explained why he claims that adverbial floating quantifiers only occur in cases of A-movement. I will do that now. By looking at (88) the reader can see that when the subject DP moves to subject position it crosses over a pro that is co-indexed with it. Fitzpatrick claims that under A-movement, based on (88), there is no cross-over effect. Under A-bar movement, however, he claims that there is a cross-over effect, based on the following sentence:

(93) *Who did [all of them] see t1?

Therefore, Fitzpatrick concludes, adverbial floating quantifiers will only be found in instances of A-movement. This poses a problem for Fitzpatrick’s theory as it is formulated. Given that Fitzpatrick considers all floating quantifiers in Standard English and French to be adverbial, he would presumably say the same about floating quantifiers in German, as I mentioned above. Within Fitzpatrick’s theoretical framework, (91a) would thus be an example of an adverbial floating quantifier in an instance of A-bar movement, which he would predict to be ungrammatical. As a side comment on (93), I must point out that if a subject and an object are co-indexed, the object normally must be a reflexive pronoun. I suspect that this is the problem with example (93) and the following one:

(94) *Whom did they see t1?

In any case, apart from why (93) and (94) might be ungrammatical, (91a) shows that A-bar movement across a quantifier does not cause a cross-over effect, contrary to Fitzpatrick’s theory. Fitzpatrick would attempt to argue his way out of this problem by claiming that in (91a) the quantifier is adnominal, unlike the quantifier in (91b), and that it contains no pro, so that there is no cross-over effect. He would also claim that in (91b) the floating quantifier is adverbial and does contain pro but that no cross-over effect is felt because (91b) is a case of A-movement. I reiterate my assertion that one would be very hard pressed to claim that the quantifier in (91a) is adnominal while the one in (91b) is adverbial. Furthermore, I do not believe it is valid to say that a cross-over effect is avoided in (91b) simply because of A-movement. This doesn’t really follow from any principle. The Stranding Analysis accounts for (91a) and (91b) equally well without concern for A-movement vs. A-bar movement and without concern for cross-over effects.
Fitzpatrick also discusses Japanese and claims that all floating numeric quantifiers in that language are adnominal and that is why they can only appear in cases of A-bar movement. I will now discuss Fitzpatrick’s analysis of Japanese. I must first of all warn the reader that many of his conclusions are based on questionable grammaticality judgements. Furthermore, there are compelling arguments in the literature, for example in Kobuchi-Philip (2003a, 2003b, and 2006), that Japanese floating numeric quantifiers can be both adverbial and adnominal. Ignoring these points for the time being, let’s take a look at Fitzpatrick’s analysis of Japanese.

Fitzpatrick claims that in English floating quantifiers must be adverbial because they occur in the same position regardless of whether their associate DP is the subject of an active verb, a passive verb, an unergative verb or an unaccusative verb:

\[(95)\]
\[
\begin{align*}
\text{a. The students have all done their work.} \\
\text{b. The students have all been helped.} \\
\text{c. The students have all worked.} \\
\text{d. The students have all arrived.}
\end{align*}
\]

Fitzpatrick’s conclusion that English floating quantifiers must be adverbial because they appear in the same place regardless of the type of verb is not logical. As I have already demonstrated, if the Stranding Analysis is updated for the Split VP Hypothesis it can easily account for all appearances of floating quantifiers with any type of verb. Nonetheless, let’s continue with Fitzpatrick’s assumptions. Unlike English floating quantifiers, Fitzpatrick claims, Japanese floating numerals appear in different positions depending on the type of verb they occur with and must therefore be stranded adnominals:

\[(96)\]
\[
\begin{align*}
\text{a. Gakusei-ga ofisu-ni huta-ri kita yo.} \\
&\text{students-NOM office-DAT two-Cl. came EXCL} \\
&\text{(Two students came to the office.)} \\
\text{b. *Gakusei-ga [zibun-no kane]-de huta-ri denwasita yo} \\
&\text{students-NOM self-GEN money by two-Cl. called EXCL} \\
&\text{(Two students called using their own money.)}
\end{align*}
\]

Fitzpatrick observes that in the (a) sentence, which contains an unaccusative verb, a floating numeral can appear between a non-argument and the verb, but this is not possible in (b), which contains an unergative. I cannot agree with Fitzpatrick’s analysis. First of all, the two sentences in (96) are not very comparable, given that the (b) sentence contains a PP that contains a reflexive. The following sentence, which parallels (96a) except that it contains an unergative like (96b), is just as perfectly grammatical as (96a):

\[(97)\]
\[
\begin{align*}
\text{Gakusei-ga ofis-kara huta-ri denwasita yo} \\
&\text{students-NOM office-from two-Cl. called EXCL} \\
&\text{(Two students called from the office.)}
\end{align*}
\]
Furthermore, according to my informants (96b) is perfectly grammatical anyway. Thus, Fitzpatrick’s claim that Japanese floating quantifiers are adnominal simply because they occur in different places depending on the type of verb is extremely questionable. Nonetheless, let’s continue with his analysis. Consider now the following sentence:

(98) Gakusei-o otagai-no sensei-ga sikatta.
    students-ACC each other-GEN teachers-NOM scolded
    (Each other’s teachers scolded the students.)

Fitzpatrick assumes that the object scrambling in this sentence is a case of A-movement because it creates a binding possibility, which he says is cross-linguistically typical of A-movement. Following Fitzpatrick’s assumptions, if (98) is an example of A-movement, and if Japanese floating numeral quantifiers are adnominal, and if adnominal quantifiers can only be floated in cases of A-bar movement, then (98) should not be possible with a floating numeral. Fitzpatrick offers the following example as support for this conclusion:

(99) *Gakusei-o otagai-no sensei-ga huta-ri sikatta.
    students-ACC each other-GEN teachers-NOM two-Cl. scolded
    (Each other’s teachers scolded two students.)

Fitzpatrick’s conclusion is based on two assumptions that could be wrong. First of all, the fact that binding possibilities are typically created by A-movement does not mean that (98) necessarily involves A-movement. Secondly, the claim that adnominal quantifiers can only be stranded under A-bar movement is contradicted by all the evidence offered in the Stranding Analysis. I would therefore like to suggest another way of approaching the sentences in (98) and (99). Regardless of whether it involves A-movement or A-bar movement, sentence (98) is grammatical because object scrambling allows a reciprocal to be properly bound, thereby avoiding a Condition A violation. Regarding (99), the following sentence, which is structurally the same as (99), shows that it is not the floating numeral in (99) that causes the ungrammaticality:

(100) Gakusei-o Taroo-no sensei-ga huta-ri sikatta.13
    students-ACC Taroo-GEN teachers-NOM two-Cl. scolded
    (Taroo’s teachers scolded two students/Taroo’s two teachers scolded the students.)

As the reader can see from the gloss of this sentence, it is ambiguous and grammatical for both readings, which contradicts Fitzpatrick’s claim that a quantifier cannot be floated under A-movement. One might suggest that the difference in grammaticality between (99) and (100) is that (99) contains an anaphor and that this might have something to do with its ungrammaticality. The following sentence, which is structurally identical to (99), shows that the anaphor has nothing to do with the problem:

13 My thanks to Mana Kobuchi-Philip for her judgement on this sentence, which I concocted myself.
The only way for Fitzpatrick to explain why (99) is ungrammatical while (101) is grammatical, although they appear to be identical in structure, would be to make the claim that (99) involves A-movement and (101) A-bar movement. One could do this by assuming that in (99) the direct object *gakusei* (*students*) has undergone A-scrambling for EPP purposes and the subject *otagai-no sensei-ga* (*each other’s teachers*) has remained in its base-position, while in (101) the subject has moved to the EPP position and the object has been scrambled around the subject, which would constitute A-bar movement. It would not be obvious from the Surface Structure that the two sentences involved different kinds of movement, but in a scrambling language like Japanese such things are possible. The question is whether there is any independent motivation for claiming that (99) and (101) involve different kinds of movement (other than providing support for Fitzpatrick’s theory). I would maintain that there is no independent motivation for claiming that (99) and (101) involve different kinds of movement. This raises the question of how I would explain the ungrammaticality of (99). It seems that in this sentence the reciprocal and the numeral are incompatible. A reciprocal implies two specific individuals. However, specificity is incompatible with the numeral *huta-ri*, which indicates an indefinite, arbitrary, unidentifiable set of two students. Example (99) is therefore not a valid example for this discussion.

Let’s summarise the conclusions that can be drawn from examples (98) to (100). Fitzpatrick claims that the contrast between (98) and (99) shows that numeral stranding cannot take place under A-movement. This claim is seriously challenged by my example (100).

Consider now the following sentences, which Fitzpatrick introduces in order to demonstrate that A-bar movement but not A-movement produces weak cross-over effects in English:

\[(102) \begin{align*}
\text{a. *Who}_{1} & \text{ did his}_{1} \text{ mother see } t_{1} \text{?} \\
\text{b. John}_{1} & \text{ seems to his mother } t_{1} \text{ to be smart}
\end{align*}\]

Based on this evidence, Fitzpatrick assumes that in (103b) the fronting of the who-object must be A-movement, since it obviates the cross-over effect seen in (103a):

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14 My thanks to Masumi Nagasawa for helping me construct this sentence.
15 My thanks to Mana Kobuchi-Philip for this insight.
(103)  a. *[pro1 osieta sensei]-ga dare1-o yatou no?
    pro1 taught teacher-NOM whom1 hire ?
    (Whom1 will the teacher who taught him1 hire?)

    b. Dare1-o rainen [pro1 osieta sensei]-ga yatou no?
    whom next year pro1 taught teacher-NOM hire ?
    (Whom1 will the teacher who taught him1 hire next year?)

Again, if sentences like (103b) are instances of A-movement, according to Fitzpatrick they should become ungrammatical if they involve a floating numeral, since he claims that Japanese floating numerals are adnominal and can only be floated under A-bar movement. The following pairs of sentences are offered as supporting evidence:

(104)  a. Donna gakusei1-o san-nin rainen [pro1 osieta sensei]-ga ti1
    which students ACC three-Cl. next year taught teacher NOM

    yatou no?
    hire ?

    b. */? Donna gakusei1-o rainen [pro1 osieta sensei]-ga ti1 san-nin
    which students ACC next year taught teacher NOM three-Cl.

    yatou no?
    hire ?

    (Which three students will the teacher who taught them hire next year?)

(105)  a. [Donna booru]-ga mit-tu [pro1 katta hito]-ni atatta no?
    which ball NOM three-Cl. bought person DAT hit ?

    b. */? [Donna booru]-ga [pro1 katta hito]-ni mit-tu atatta no?
    which ball NOM bought person DAT three-Cl hit ?

    (Which three balls hit the person who bought them?)
(106) a. Donna gakusei1-ga san-nin asita [pro1 osietta sensei]-ni which students NOM three-Cl. tomorrow taught teacher DAT

    sikarareru no?
    scold  ?

b. */? Donna gakusei1-ga asita [pro1 osietta sensei]-ni san-nin which students NOM tomorrow taught teacher DAT three-Cl.

    sikarareru no?
    scold  ?

(Which three students will be scolded tomorrow by the teacher who taught them?)

Fitzpatrick assumes that the (a) sentences in (104) to (106) are instances of A-movement. For the sake of argument, we will grant him this assumption (even though the sentences contain wh-movement). In the (a) sentences, the numeral quantifier is not floated and the sentences remain grammatical. In the (b) sentences, the quantifiers are floated and the sentences are marginal. Fitzpatrick claims that this shows that Japanese numerals are adnominals that can only float under A-bar movement. These data are undeniably interesting, as are Fitzpatrick’s observations. The question is whether the data convincingly show that Japanese numerals can be floated only under A-bar movement. In the (b) examples in these three sets of sentences Fitzpatrick’s informants are not sure about their judgements, which already raises doubts about his conclusions. My informant could also not completely rule the sentences out. If sentences of this type are typically marginal but not ungrammatical, Fitzpatrick might have to concede that Japanese numerals can be stranded under A-movement. He could perhaps explain the marginal acceptability of the (b) sentences in (104) to (106) in another way, namely, by arguing that these sentences are actually instances of A-bar movement. Given that they involve wh-questions, this would not be problematic in and of itself, but it would nullify Fitzpatrick’s generalisation that only A-movement obviates cross-over effects, as he attempted to show in (103). My reaction to Fitzpatrick’s analysis of the sentences in (103) through (106) is that there is confusion about what constitutes A-movement and A-bar movement, particularly given the claim that wh-questions involve A-movement, and that the conclusions are partially based on uncertain grammaticality judgements.

Fitzpatrick ends his discussion of Japanese with some very interesting sentences and observations. Unfortunately, his conclusions are again based on questionable grammaticality judgements. The sentences have to do with the interaction of the universal quantifier zen’in (all/everybody) and negation. Some background information is required before I can begin the discussion.

In Japanese, the EPP requires that something move to the specifier position of a Topicalisation Phrase (TP). It does not have to be the subject that moves. It is also possible to move an object into [SPEC, TP] and this would be considered A-
movement, as seen in (107a). It is also possible to move the subject into [SPEC, TP] for EPP purposes and then to scramble the object around the subject into [SPEC, CP], as seen in (107b).

(107) a. \[ TP \text{ Object}_1 [VP \text{ Subject}_1 t_1 \text{ Verb}] \]
   b. \[ CP \text{ Object}_2 [TP \text{ Subject}_1 [VP t_1 t_2 \text{ Verb}]] \]

The Surface Structure word order is the same for these two types of movement, but there is a test for determining which kind of movement has taken place. The test involves the ambiguity that can arise when negation, which is a verbal infix, co-occurs with the universal quantifier \textit{zen’in}. It works in the following way.

Imagine a sentence in which \textit{zen’in} is the subject of a transitive verb that is inflected for negation. If in this type of construction the object of the verb undergoes A-movement to [SPEC, TP] in order to satisfy the EPP, leaving the subject inside VP/vP as in (107a), negation retains scope over the subject, producing a \( [\neg \rightarrow \forall] \) reading. If, on the other hand, the subject moves out of vP to TP for EPP purposes and the object undergoes A-bar scrambling and is moved around the subject, as in (107b), negation no longer takes scope over the subject, and the reading is \( [\forall \rightarrow \neg] \).

This seems to be a very plausible way to explain ambiguity in Japanese. With that background, Fitzpatrick looks at what happens when numeral quantifiers are floated in sentences with \textit{zen’in} (all) and negation, and again concludes (incorrectly, as I will show) that floating numerals are associated with A-bar movement. Observe the following sentence:

(108) \text{Hon-o san-satu \textit{zen’in}-ga kawanakatta yo.}
     book-ACC three-Cl all-NOM buy-not-PAST EXCL
     (All did not buy three books.)

In (108), an object has been fronted with its numeral quantifier. Since the fronted object could be in CP or TP and the subject in TP or vP, one would expect the sentence to be ambiguous for \( [\neg \rightarrow \forall] \) and \( [\forall \rightarrow \neg] \) readings, which is indeed the case. Now, what happens if the quantifier is floated? Fitzpatrick’s prediction is that only a reading produced by A-bar movement would be allowed. This would be a reading in which the subject is outside of VP and takes scope over negation. Fitzpatrick says that this prediction is borne out because the following sentence, which is based on (108), has only a \( [\forall \rightarrow \neg] \) reading:

(109) \text{Hon-o \textit{zen’in}-ga san-satu kawanakatta yo.}
     book-ACC all-NOM three-Cl bought not EXCL
     (All did not buy three books.)

I consulted three informants on this sentence. Two could get only a \( [\neg \rightarrow \forall] \) reading and the other one could get both a \( [\forall \rightarrow \neg] \) and a \( [\neg \rightarrow \forall] \) reading. My findings are thus in total contradiction to the claim made by Fitzpatrick. My conclusion is
therefore that stranding is possible under both A-movement and A-bar movement in Japanese and Fitzpatrick’s hypothesis needs rethinking.

To summarise this section, Fitzpatrick’s aim was to show that floating quantifiers in languages like Standard English and French are adverbials as proposed in Doetjes (1997) that can only float under A-movement, and that Japanese floating numerals are adnominals that can be stranded in the manner of Sportiche but only under A-bar movement. His data and observations are very interesting and his hypothesis very clever. Also, his claim that a language can have both adnominal and adverbial floating quantifiers is plausible. I showed that this was the case in West Ulster English and will show in the next section that it is also true of Japanese. The problem is that Fitzpatrick’s hypothesis breaks down in too many areas. The German examples in (91) show that quantifiers can be stranded under both A-movement and A-bar movement, and the examples in (104) to (106) and (108) strongly suggest that in Japanese the distinction between A-movement and A-bar movement is also not the deciding factor. Furthermore, Fitzpatrick’s claim that all Japanese floating numeral quantifiers are adnominal is completely untenable, as I will show in the next section.


The analysis in Kobuchi-Philip (2003 and 2006) deals with floating numeral quantifiers in Japanese, consisting of a cardinal number and a classifier, and presents strong evidence that adnominal and adverbial floating quantifiers can co-occur intra-linguistically. Her analysis is mainly of a semantic nature, however if one approaches it from a syntactic standpoint one discovers that it provides evidence, perhaps inadvertently, for the Stranding Analysis. My goal in this section is to review Kobuchi-Philip’s analysis in order to show that floating quantifiers can be both adnominal and adverbial and that quantifier stranding occurs in Japanese.

In Kobuchi-Philip (2003) it is shown that there are various positions that a numeral quantifier can appear in, exemplified in the following sentences:
Kobuchi-Philip refers to the numeral quantifiers in examples (110a), (110b) and (110e) as “DP-internal numeral quantifiers” and to the numeral quantifiers in (110c) and (110d) as “floating numeral quantifiers” that initiate as adjuncts to a verbal phrase. Note that DP-internal numeral quantifiers can be pre-nominal, as in (110e), in which case they bear a genitive marker, or post-nominal, as in (110a) and (110b). In this section, when talking about numeral quantifiers that are base-generated in DP I will use the term **adnominal numeral quantifier** or simply **adnominal** instead of Kobuchi-Philip’s term **DP-internal numeral quantifier**. Likewise, when discussing numeral quantifiers that originate as adjuncts to a verbal phrase, as in (110c) and (110d), I will use the term **adverbial numeral quantifier** or simply **adverbial** instead of **floating numeral quantifier**. Let’s first consider (110a) and (110b), which both mean **Three students read a book**. Assuming that the numeral quantifiers in these two sentences initiate in DP as argued by Kobuchi-Philip, then the two sentences should be derived from a common source. The question is how. Assuming that Japanese is head-final, and assuming, following Kawashima (1998) and others, that in the nominal hierarchy phrases headed by a cardinal number outrank NP, the structure of the subject in (110a) and (110b) would be as in (111).³ sixteen

Example (110a) seems straightforward. In this sentence the entire DP moves to a position in which the nominative case marker *ga* is assigned. In (110b), however, the NP *gakusei* (*students*) moves out of CardP via the specifier position and up to the position where nominative case is assigned, stranding the quantifier. The question here is whether a NP can move by itself out of DP for case. Nonetheless, given the structure in (111), the only way to explain the position of the nominative marker in (110b) is to argue that the numeral and classifier have been stranded in CardP. In Bošković (2008) it is argued that languages without articles, including Japanese, do not have DP and that NP functions as DP. Example (110b) in fact supports Bošković’s claim. I will assume here that Bošković’s arguments are correct.

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³ Kawashima uses the term NumP. I have changed it to CardP for the sake of consistency.
We move now to (110c). Its word order is the same as that of (110b), but Kobuchi-Philip argues that it must be analysed differently. She points out that there are intonational differences between (110b) and (110c) and that there is a pause after the subject in (110c), which shows that the numeral quantifier in this sentence is more closely associated with the predicate than with the subject. This is why the numeral quantifiers in (110b) and (110c) are analysed as adnominal and adverbial, respectively. It is also significant that the tendency is for (110b) to allow a collective or a distributive reading while (110c) produces only a distributive reading. I will show later in this section that the forced distributive reading of (110c) is very relevant to Kobuchi-Philip's treatment of numeral quantifiers such as the one in (110c) as adjuncts to vP.

Turning now to (110d), this sentence is treated by Kobuchi-Philip as being derived from (110c) by scrambling the adverbial numeral quantifier. She bases this analysis on the claim that the meaning of (110d) corresponds to (110c) rather than to (110b), that is, the reading is distributive. Furthermore, as shown in (110e), when a numeral precedes a noun it must bear the genitive case marker *no*, which indicates that the numeral in (110d) must have started out in a post-nominal position.

To summarise where we are so far, a syntactic model based on the Stranding Analysis and on arguments in Bošković (2008) can generate (110a) and (110b) from a common source. Structurally, (110c) could also be treated as stranding, but Kobuchi-Philip offers reasons for treating the numeral quantifier in (110c) as a vP adjunct rather than a stranded quantifier. Based on this analysis, (110d) is easy enough to derive by scrambling the adverbial numeral. The point is that the first four sentences in (110) are not incompatible with the Stranding Analysis as long as one accepts the premise that adverbial and adnominal floating quantifiers can co-exist. Example (110e) requires special attention.
In (110e) we see that when an adnominal numeral quantifier precedes a noun, it must bear the genitive marker no. This sentence contains the same elements and has the same meaning as (110a) and (110b). It would therefore be desirable to derive (110a), (110b) and (110e) from the same base-structure. There are, however, two major hurdles to this approach. One is the case marking on the numeral quantifier in (110e) and the other is the fact that it is difficult to imagine how, in a head-final language, a noun in a structure like (111) can end up in a position following the numeral. It is no surprise that in the literature one finds a tendency not to approach pre- and post-nominal numerals in a unified manner. Inoue (1978), Miyagawa (1989), Saito and Murasugi (1990) and Kawashima (1998) have all avoided a unified analysis. If one does not follow a unified approach, I assume that a sentence like (110e) would be derived by base-generating the numeral and classifier in [SPEC, NP] or [SPEC, DP], where they would be assigned genitive case and the marker no. This is consistent with arguments in Miyagawa (1991) regarding the assignment of the genitive case in a SPEC position, and it is also consistent with my arguments in Chapter 1 regarding the assignment of the genitive and the possessive dative case in SPEC positions. Note that under this approach pre-nominal numerals are outside the scope of a study of floating quantifiers, since they are located in a SPEC position in the nominal domain rather than in a head position like a strandable quantifier and are not subject to stranding.

I must point out that in Kobuchi-Philip (2006) there is a proposal for treating pre- and post-nominal numerals in Japanese in a unified way. Not only does this proposal offer a unified approach to pre- and post-nominal numeral quantifiers, it also offers a means of accounting for an English measurement phrase such as two tablespoons of sugar and its equivalent in Japanese in a unified manner. It is based on Corver (2004), which is an analysis of English measurement phrases, but it modifies Corver’s analysis so that it can account for measurement phrases in both English and Japanese. Under Kobuchi-Philip’s analysis, a measurement phrase is a kind of Small Clause in which the modified NP is the subject, the numeral and classifier are the predicate, and the measurement term (tablespoon, bottle, etc.) is the complement of the predicate. The Small Clause predicate can remain in its post-nominal position, which results in structures such as (110a or 110b), or it can undergo optional subject-predicate inversion, in which case, the predicate, including the numeral, classifier and measurement term, move around the subject to the SPEC position of an FP inside DP. This is how the numeral quantifier ends up in pre-nominal position as seen in (110e). The genitive marker no is inserted just as of is inserted in English under the analysis in Corver (2004) in order to obtain a phrase like two tablespoons of sugar. What is important to my analysis is that under this approach a pre-nominal numeral quantifier is in a SPEC position in the nominal domain and not subject to stranding. Thus, if Kobuchi-Philip’s unified approach to pre- and post-nominal numeral quantifiers is correct, pre-nominal numeral quantifiers with no remain outside the scope of a study of floating quantifiers.

In summary, there are two points that I would like to make so far. First, I am treating pre-nominal numeral quantifiers as being outside the scope of a study of floating quantifiers. Secondly, it seems upon first glance that the Stranding Analysis
can handle (110a) and (110b). Even (110c) could theoretically be derived by stranding, in which case (110d) would be derived by first stranding and then scrambling the numeral quantifier. However, there are compelling arguments in Kobuchi-Philip (2003) for base-generating numeral quantifiers such as the one in (110c) as adjuncts to a verbal phrase. In the remainder of this section I will elaborate on this.

I have already mentioned that despite their identical word order there are a number of differences between (110b) and (110c), repeated here:

(112) a. [Gakusei-ga san-nin] hon-o katta.
    students-NOM three-Cl. book-ACC bought

b. Gakusei-ga, [san-nin hon-o katta].
    students-NOM three-Cl. book-ACC bought

The intonation in these two sentences is different, there is a pause in (112b) between the subject DP and the numeral quantifier, and (112b) must have a distributive interpretation. These are signs that the two sentences in (112) must be analysed differently. In Kobuchi-Philip (2003 and 2006) there are additional arguments, both syntactic and semantic in nature, for the dual analysis in (112). I will now give a brief survey of them.

One very compelling reason for the split analysis in (112) is that there are instances in which a numeral quantifier cannot possibly be linked to an associate DP because it lacks the proper scopal relation with a DP. Observe the following example from Kobuchi-Philip (2003):

(113) Narande hashitteita suu-dai-no torakku-ga,
    in a row running some-Cl.-GEN truck-NOM

    san-dai gaadireeru-ni butuskatta
    three-Cl. guardrail-DAT hit

(Three of several trucks driving in a row hit the guardrail.)

There are two quantifiers in this sentence, suu-dai (*some/several*) and san-dai (*three*). As can be seen from the classifier dai, which refers to vehicles, both quantifiers quantify over the same general thing. However, unlike the quantifier suu-dai, the quantifier san-dai does not take scope over all of the trucks that are being driven in a row. It only takes scope over the three that hit the guardrail. It therefore cannot have been stranded by the subject in this sentence. Since it takes scope only over vehicles that have the property of having hit the guardrail, it can only be construed as an adjunct to the predicate.

Another compelling reason for positing adverbial numeral quantifiers is that there are numeral quantifiers whose classifier is incompatible with any DP that might be
associated with them. These are referred to as event classifiers. In the following two examples, the direct object is a pistol that has been fired twice, but the classifier はつ attached to the numeral is the classifier used for shots, blasts or explosions, not for pistols. The only possible phrase that can be associated with the numeral quantifier is the predicate:

  John-NOM this pistol-ACC two-Cl. fired  
  (John fired two shots from this pistol.)

  John-NOM pistol-ACC there two-Cl. fired  
  (John shot a pistol twice there.)

There is other evidence for the adverbiality of numeral quantifiers such as the ones in (112b) and (113), such as the fact that floating numeral quantifiers can be coordinated with adverbs:

(115) Shoon-nin-ga, [san-nin katsu tashikani] sono jiko-o mokugekishita.  
  witnesses-Cl.-NOM three-Cl. and certainly the accident-ACC witnessed  
  (Three witnesses certainly witnessed the accident.)

I have mentioned that one argument in favour of the split analysis in (112) is that numeral quantifiers such as the one in (112b) have a forced distributive reading while numerals like the one in (112a) can be interpreted distributively or collectively. I will now present more compelling evidence from Kobuchi-Philip (2003) for the forced distributive reading of adverbial numeral quantifiers and also discuss what it is that might cause the forced distributivity.

Consider first the so-called “once only” predicates, which, because they describe events that can only occur once, require a collective reading. Because a floating adverbial numeral quantifier must be interpreted distributively, it cannot occur with a “once only” predicate:

(116) *Otoko-ga Hibiyakooen-no baiente, san-nin Tanaka-o koroshita.  
  men-NOM Hibiya Park-GEN kiosk-in three-Cl. Tanako-ACC killed  
  (Three men killed Tanaka at the kiosk in Hibiya Park.)

Even a partially collective predicate is incompatible with a floating numeral. For example, if there are only two copies of Newsweek left in a shop and three customers buy them, either the three customers buy the two copies together, as a group, in which case there is a collective reading, or two customers buy one copy together and the other customer buys the remaining copy, which would be an instance of partial collectivity. In the following discourse from Kobuchi-Philip (2003), neither of these collective readings is possible because the adverbial numeral quantifier forces an impossible distributive reading:
Kesa Newsweek-ga, ni-bu nokotteita.
this morning Newsweek-NOM two-Cl. remained
*Sono Newsweek-o kyaku-ga, san-nin katta.
these Newsweek-ACC customers-NOM three-Cl. bought

(This morning two copies of Newsweek remained. Three customers bought them.)

The second sentence is ungrammatical because it cannot be true of each customer that he or she bought the two magazines. Perhaps the most convincing evidence in Kobuchi-Philip (2003) that adverbial numeral quantifiers must be interpreted distributively is the following pair of sentences from the field of chemistry:

(118) a. Futa-tsu-no suiso-genshi-ga kono ondo-de
two-Cl.-GEN hydrogen atom-NOM this temperature-at
hito-tsu-no suiso-bunshi-o tsukuru.
one-Cl.-GEN hydrogen molecule-ACC form

b. *Suiso-genshi-ga kono ondo-de,
hydrogen atom-NOM this temperature-at
futa-tsu hito-tsu-no suiso-bunshi-o tsukuru.
two-Cl. one-Cl.-GEN hydrogen molecule-ACC form

(At this temperature two hydrogen atoms form one hydrogen molecule.)

We have seen syntactic, semantic and phonological reasons for the split analysis in (112) proposed in Kobuchi-Philip (2003). What remains to be done is to explain why adverbial numeral quantifiers in Japanese must have a distributive interpretation. I will now present Kobuchi-Philip’s arguments and my own comments.

Kobuchi-Philip (2003) offers a semantic explanation for the forced distributive reading of adverbial numeral quantifiers, using the concept of *atomicity*. The term *atomicity* refers to the idea that when a Japanese numeral counts the quantity of elements specified by its classifier, it counts *individuals or atoms* rather than groups or sums of elements. This condition whereby classifiers must represent atoms is referred to as the *Atomicity Constraint*.17 This need to count individuals/atoms is what causes the distributivity of adverbial numeral quantifiers in Japanese. To understand this, consider the following sentence from Kobuchi-Philip (2003), in which the adverbial numeral quantifier must be interpreted distributively:

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17 For an explanation of this constraint the reader is referred to Kobuchi-Philip (2003) 201-207.
The numeral *san* (*three*) represents the intersection of the set of individuals specified by the classifier *nin*, which I will refer to as the *restriction* of the numeral, and the set of individuals with the property of having built a boat, which I will refer to as the *scope* of the numeral.\(^{18}\) Kobuchi-Philip argues that the atomicity of the classifier must persist after it has been intersected with the property specified by the predicate. For the atomicity of the classifier to be maintained, the property of having built a boat must be true of each individual included in the set specified by the classifier. In other words, the sentence in (119) can only be true if the property of having built a boat is true of each individual man, hence the forced distributive reading of the adverbial numeral quantifier. This explanation seems plausible to me, and I would suggest that the same line of reasoning might also be able to explain the ability of an adnominal numeral quantifier to have a distributive or a collective reading, provided, of course, that the predicate and pragmatics allow it. My reasoning is as follows:

Let’s assume that adnominal and adverbial numeral quantifiers are not really different in that they are both subject to the Atomicity Constraint, and let’s apply this idea to (113), repeated here:

\[
\text{(120) } \text{Narande hashitteita suu-dai-no torakku-ga,}
\]
\[
\text{in a row running some-Cl.-GEN truck-NOM}
\]
\[
\text{san-dai gaadireeru-ni butuskatta}
\]
\[
\text{three-Cl. guardrail-DAT hit}
\]

(Three of several trucks driving in a row hit the guardrail.)

Consider the adnominal numeral quantifier *suu-dai*. I assume, in keeping with the Atomicity Constraint, that the denotation of the classifier *dai* must be atomic. Furthermore, following Kobuchi-Philip’s argument, the intersection of the denotation of *dai* with the scope of *suu* (trucks being driven in a row) must also be atomic in order for the sentence to be true. That is, the property of being a truck driven in a row must be true for every item denoted by the *dai* in *suu-dai*. What is important is that the atomicity of the intersection of the restriction (the classifier) and the scope (the trucks) is assured within the nominal domain *independently of the predicate of the sentence*. Since the predicate has no role to play in ensuring that the intersection of the restriction and the scope remains atomic, it does not matter whether it produces a collective or distributive reading.

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\(^{18}\) I use the terms *restriction* and *scope* to facilitate discussion. The reader might well be used to other terms, such as *domain of quantification* and *nuclear scope*. 

Things are different for the adverbial san-dai in (120), whose scope is not specified by a nominal element but by the predicate. In order for the intersection of the restriction and scope of san to be atomic, the property of hitting a guardrail must be true of every item designated by dai. Since in the case of an adverbial numeral quantifier the predicate has a role to play in assuring atomicity, a distributive reading is required.

In this section I have given a brief, simplified overview of the theory of floating quantifiers presented in Kobuchi-Philip (2003 and 2006). I believe that this review has taught us three important things. First of all, there is evidence that Japanese has instances of true quantifier stranding that is consistent with the theory that I am defending, as shown in (110a) and (110b), repeated here:

(121) a. [Gakusei san-nin]-ga hon-o katta.
    students three-Cl-NOM. book-ACC bought

    b. [Gakusei-ga san-nin] hon-o katta.
    students-NOM three-Cl. book-ACC bought

Example (121a) is ambiguous for a collective or a distributive interpretation, and so is (121b). The scope of the numeral quantifier in both sentences must therefore be the subject DP, which means that the numeral quantifier is a stranded adnominal, not an adverbial. Furthermore, the position of the nominative marker in (121b) (or the lack of case marking on the numeral quantifier) can only be explained if one assumes that in this sentence the numeral quantifier has been stranded in a position below the one in which nominative case is assigned.

Secondly, our review of the theory in Kobuchi-Philip (2003 and 2006) reminds us of something that we learned from West Ulster English, namely, that a language can have both adnominal and adverbial floating quantifiers. Whereas the numeral quantifiers in (121) are adnominal, in the following sentences they are adverbial:

(122) a. Gakusei-ga, [san-nin hon-o katta].
    students-NOM three-Cl. book-ACC bought

    b. San-nin1 gakusei-ga [t1 hon-o katta].
    three-Cl. students-NOM book-ACC bought

The sentence in (122a) has the same Surface Structure as (121b) but not only does it involve a pause and different intonation, its reading is distributive. The scope of the numeral quantifier is therefore the predicate, not the subject. Example (122b), which has the same semantics as (122a), would be derived from (122a) by scrambling the adverbial numeral quantifier.

Thirdly, we may have gained an understanding of why in the Indo-European languages there is a strong preference for a distributive interpretation of stranded universal quantifiers. The Germanic and Romance languages do not have classifiers,
which means that the restriction of a stranded quantifier in these language families is necessarily the associate DP. Consider the following sentence:

(123)  The students have all eaten a pizza.

Since there is no classifier in this sentence, the restriction of the quantifier is the DP the students and the scope is specified by the predicate eat a pizza. The restriction of the quantifier must be atomic, and this atomicity must be maintained in the intersection of the restriction and the scope. Thus, the property expressed by the predicate must be true of each person within the restriction of the quantifier, and a distributive reading is produced. This does not explain why a collective reading is also possible in (123), but it might explain why the distributive reading is the preferred reading of universal quantifiers in the Germanic and Romance languages.

In this section we have seen evidence that in Japanese some floating numeral quantifiers are best explained as stranded adnominals and others are best explained as adjuncts to a verbal phrase. We have also seen evidence that adnominal numeral quantifiers can be stranded in Japanese.

In Kobuchi-Philip (2003) it is argued that the forced distributive interpretation of adverbial floating numerals in Japanese results from the fact that not only the restriction of a quantifier but also the intersection of the restriction and the scope must be atomic. The property expressed by the predicate must therefore be true of every individual covered by the restriction, resulting in a distributive interpretation. I suggested that in the case of adnominal numeral quantifiers the predicate does not specify the scope of the numeral quantifier and thus plays no role in ensuring that the intersection of the restriction and scope of the quantifier is atomic. This perhaps allows more flexibility in collective vs. distributive interpretations.

The fact that the Germanic and Romance languages do not have classifiers comparable to the ones found in Japanese means that the restriction of a Germanic or Romance universal quantifier is its complement DP and its scope is specified by the predicate. I suggested that this might be the reason why there is a strong preference for a distributive interpretation of universal quantifiers in the Germanic and Romance languages.

7. Final Comments, Summary and Conclusions

In this chapter we have reviewed challenges that are faced by the Stranding Analysis and have also looked at several analyses in which it is claimed that all floating quantifiers are base-generated as adjuncts to a verbal phrase. We have found that the challenges faced by the Stranding Analysis are not really solved by taking an adverbial approach to floating quantifiers and that the adverbial approaches are themselves faced with significant problems and offer no compelling reason to abandon the Stranding Analysis. The approach in Kobuchi-Philip is different from the approaches in, for example, Baltin, Bobaljik and Doetjes in that it allows for the
possibility that a language can have floating quantifiers that originate inside a nominal phrase and floating quantifiers that originate as adjuncts to a verbal phrase. Other analyses not covered in this thesis are similar. For example, the conclusion reached in Benmamoun (1999), which is mainly about Arabic, is that some floating quantifiers seem to be the heads of a nominal phrase like a QP whereas others behave like adjuncts to a verbal phrase.

Apart from reaching the conclusion that the adverbial approaches do not offer a convincing alternative to the Stranding Analysis, we also found that adnominal and adverbial quantifiers can co-exist intra-linguistically. We saw this to a limited extent in West Ulster English and to a great extent in Japanese. Furthermore, and most importantly, we saw that when a language has both adnominal and adverbial quantifiers, like Japanese, the adnominal ones can undergo stranding. This is perhaps the most compelling evidence in support of the Stranding Analysis. If a language has quantifiers in floating positions and some of those quantifiers are adverbial and others adnominal, there is only one way for the adnominal quantifiers to end up in a floating position. They have to be stranded there.