This paper discusses quantifier floating in Brazilian Portuguese (BP), arguing that the positions in which a quantifier can or cannot surface in a sentence are determined by the structure of the quantified constituent. Following Valmala Elguea (2008), I assume that quantifier floating is a discourse-driven phenomenon and that the split between the quantifier and its “associate” happens when there is a mismatch between their topic/focus values, as shown in (1):

(1) [Los estudiantes de física]_{Top} han conseguido [todos]_{Foc} beca. (Spanish - VE’s (31c))
the students of physics have got all grant

Given that the assignment of topic or focus features is not ruled by syntactic, but by semantic or discourse reasons, there arises the question of why quantifiers behave differently with respect to floating, as in (2), or simply do not float, as in (3):

(2) a. Cada um dos alunos ganhou dois livros.
each one of-the students received two books
b. Os alunos, ganharam todos dois livros.
    all the students received two books
b’. Os alunos, ganharam cada um dois livros.
c. Os alunos, ganharam dois livros cada um.
c’. *Os alunos, ganharam dois livros todos.

(3) a. Poucos alunos viram a palestra.
few students saw the lecture
b. *Alunos, viram poucos a palestra.
c. *Alunos, viram a palestra poucos.

I argue here that the answer to this question is to be found in the structure of the quantified constituents themselves. Assuming with Avelar (2006) that BP allows DP-to-DP adjunction, I propose that some QPs allow a DP adjoined to them, as is the case of cada um ‘each one’:

(4) [QP [Cada um] [DP (d)os alunos] ]
each one (of-)the students

Not being dominated by the QP, the DP os alunos can be raised to Spec,TP and thus the floating seen in (2b,c) obtains. By contrast, when aluno is the complement of the Q head cada, Relativized Minimality blocks the movement of the NP alone, since the QP is also a candidate to occupy Spec,TP:

(5) a. [TP [Cada aluno] [T ganhou dois livros] ]
each student received two books
b. *Aluno, ganhou cada dois livros.

On the other hand, some quantifiers (such as muitos ‘many’ and poucos ‘few’) are actually generated as the head of NumPs (selected by Ds), as shown by the fact that they (i) are in complementary distribution with cardinal numbers, (ii) can follow a determiner, and (iii) can co-
occur with a genuine Q-head quantifier (cf. (6)). That being the case, Relativized Minimality also
prevents the NP from moving to Spec, TP, as NumP can also occupy this position (cf. (3)).

(6) Todos os muitos/poucos/vinte alunos que estavam na sala já saíram.
all the many/few/twenty students that were in the room already left

I also show that taking quantifiers to be in the specifier of or adjoined to their associate DPs
(see e.g. references) is conceptually less economical and leads to overgeneration. For instance, in
order to explain the impossibility of floating in (7), where there is an informational mismatch
between the focused quantifier and its neutral associate, Valmala Elguea (2008) (who adopts the DP
analysis) stipulates that a focused Q, on its way to Spec,FocP, obligatorily pied-pipes an associate
that is not specified for a different discourse value.

(7) *[TodosFoc], han conseguido [t, los estudiantes de física] beca. (Spanish - VE’s (39))
all have got the students of physics grant

A QP analysis is preferable because it would solve the problem posed in (7) without the need to
invoke pied-piping. Since there is no operation that checks a “neutral feature”, no movement of the
DP out of the QP is required. When a Foc head probes the structure, as in (8), the whole QP moves
to Spec,FocP, carrying the DP along with it. Thus the lack of floating in (7) receives a
straightforward explanation.

(8) [Foc Focº [XP … [QP QFoc] [DPNeutral]]]

Besides, a DP analysis overgenerates with respect to sentences like (9). When probed by a
Top head, as in (10), the DP[Top] would move to Spec,TopP carrying its specifier QP along with it,
icorrectly allowing quantifiers to appear in topic positions and incorrectly preventing the expected split:

(9) *[Todos os livros], eu li t, semana passada.
all the books I read week last
(10) [Top Topº [XP … [DP[Top] [QP[Neutral]] [D’ [NP ]]]]

In order to be licensed in BP, quantifiers have to check a Case or a discourse-related feature
— contrary to Spanish, for instance, which allows quantifiers to appear in a neutral position, such as
Spec,vP (cf. Valmala Elguea 2008), which is impossible in BP:

bought each one two books

That being so, a quantifier that has no phi-features (and thus is unable to establish agreement)
would be expected not to appear in a nominative position. That is exactly what happens with the
floating use of tudo ‘all’ (lit. ‘everything’), which is a colloquial variant of todos in BP:

(12) a. *[TP [Tudo os meninos] [T tomou/tomaram o remédio errado] ]
all the boys took,3SG/3PL the medicine wrong
b. Todos/*tudo os meninos (todos/tudo) tomaram (todos/tudo) o remédio errado.

Finally, the proposal advocated here also accounts for the interesting contrast in (13):
In (13a), *cada um* checks oblique Case against the preposition *pra*. In turn, the DP *os meninos*, being an adjunct of QP (as shown in (4)), is still free to move from out of the QP without violating Relativized Minimality. In (13b), on the other hand, the DP *os meninos*, being a complement of Q, is unable to escape from a Case-checked QP (assume the DP is licensed via concord). The need of an extra (upper) copy of the preposition *pra* in (13a) points to another property of BP, namely, that the low left periphery is unable to license a Caseless DP:

(14) a. Eu li, *[*(d)o Machado de Assis]*i, os principais romances ti.
   I read (of-)the Machado de Assis the main novels
   b. *[[(D)o Machado de Assis]], eu li os principais romances ti.

(adapted from Avelar 2006:94)

To conclude, the different possibilities for quantifier floating in BP are shown to result from the interaction between the properties of its high and low left periphery fields and the structure associated with the quantified expressions.