

Remarks and Replies

The Syntax of Quantifiers and Quantifier Float

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The Arabic quantifier *kull* displays a Q__NP and NP__Q alternation. Shlonsky (1991) argues that in both patterns Q heads a QP projection with the NP as a complement that may undergo movement to [Spec, QP] or beyond to yield the NP__Q pattern and Q-float structures. On the contrary, I argue on the basis of evidence from reconstruction, Case, and agreement that the two patterns are radically different. In the Q__NP pattern Q is indeed the head of a QP projection that contains the NP. In the NP__Q pattern, however, Q heads a QP adjunct that modifies the NP and in some cases the VP.

Keywords: quantifier, quantifier float, agreement, Case, reconstruction, adverb

The quantifier (Q) *kull* in Arabic occurs in two patterns: (a) a Q__NP pattern, and (b) an NP__Q pattern. In the former pattern the quantifier displays properties also displayed by nominal heads of genitive constructions (the so-called Semitic *construct state*). In the latter pattern it carries a clitic that agrees with the NP to its left. The major previous analysis of a similar alternation—involving *kol*, the Hebrew equivalent of *kull*—has been provided by Shlonsky (1991). According to Shlonsky, the NP__Q pattern is derived from the Q__NP pattern by movement of the NP to the specifier position of a projection headed by Q. Given the specifier-head relation between NP and Q, the presence of the clitic, as an agreement morpheme, is accounted for. The analysis of the NP__Q pattern is extended to Q-float constructions, which are argued by Shlonsky to involve movement of the NP via [Spec, QP] to higher positions in the sentence (thus adopting, with slight modifications in the syntactic status of Q, Sportiche's (1988) analysis of Q-float). Shlonsky's account crucially assumes that in both the Q__NP pattern and the NP__Q pattern, Q is the head of the projection containing the NP it quantifies over. This analysis, in turn, makes the movement account that derives the NP__Q pattern from the Q__NP pattern plausible. In this article I will discuss some empirical generalizations that are best accounted for under the assumption that the syntactic status of Q and NP in the two patterns is radically different. With respect to the Q__NP pattern, I will provide additional arguments to support Shlonsky's theory that *kull* is indeed a head of the (QP) phrase containing the NP. However, I will demonstrate that the

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NP_Q pattern consists of an NP projection (headed by a noun) with Q + clitic functioning as an NP adjunct, and sometimes a VP adjunct.

1 The Q_NP Pattern and the Head Status of *kull*

One of the head properties that the quantifier *kull* displays is the ability to carry (agreement) clitics (Shlonsky 1991). Thus, *kull* can carry the same set of clitics as nouns. This is illustrated by the following (nonexhaustive) paradigms from Standard Arabic (1) and Moroccan Arabic (2):

(1) *Standard Arabic*

| | | | |
|--------------|-----------------|----------------|-----------------|
| kull-u-naa | 'all of us' | kitaab-u-naa | 'our book' |
| kull-u-kum | 'all of you.MP' | kitaab-u-kum | 'your.MP book' |
| kull-u-kunna | 'all of you.FP' | kitaab-u-kunna | 'your.FP book' |
| kull-u-hum | 'all of them.M' | kitaab-u-hum | 'their.MP book' |
| kull-u-hunna | 'all of them.F' | kitaab-u-hunna | 'their.FP book' |

(2) *Moroccan Arabic*

| | | | |
|----------|----------------|----------|---------------|
| kull-na | 'all of us' | ktab-na | 'our book' |
| kull-kum | 'all of you.P' | ktab-kum | 'your.P book' |
| kull-hum | 'all of them' | ktab-hum | 'their book' |

Kull also displays two other properties of nominal heads. First, like the nominal heads in (3), *kull* can carry nominative, accusative, or genitive Case, as shown in (4).¹ Second, like nouns in the so-called Semitic construct state (3c), *kull* invariably assigns genitive Case to the following NP, as also shown in (4).²

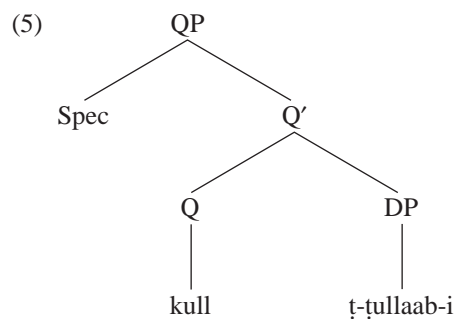
- (3) a. $\text{t-}\dot{\text{t}}\text{ullaab-u}$ $\text{Zaa}^{\text{--}}\text{-uu}$ (SA)
the-students-NOM come.PAST-3MP
'The students came.'
- b. $\text{ra}^{\text{--}}\text{ay-tu}$ $\text{t-}\dot{\text{t}}\text{ullaab-a}$
see.PAST-1S the-students-ACC
'I saw the students.'
- c. kitaab-u $\text{t-}\dot{\text{t}}\text{ullaab-i}$
book-NOM the-students-GEN
'the book of the students'
- d. ma^7a $\text{t-}\dot{\text{t}}\text{ullaab-i}$
with the-students-GEN
'with the-students'

¹ Consonants transcribed with under dots represent so-called pharyngealized or emphatic segments. The initials LA, MA, and SA following the examples stand for *Lebanese Arabic*, *Moroccan Arabic*, and *Standard Arabic*, respectively.

² The construct state in Arabic and Hebrew has been studied extensively. See Aoun 1978, Borer 1984, 1988, 1996, Mohammad 1988, Ritter 1987, 1991, Ouhalla 1991, Fassi Fehri 1993, Siloni 1997, and Benmamoun, forthcoming.

- (4) a. kull-u ʔ-tullaab-i ʒaa⁻-uu (SA)
 all-NOM the-students-GEN come.PAST-3MP
 ‘All the students came.’
 b. ra⁻ay-tu kull-a ʔ-tullaab-i
 see.PAST-1S all-ACC the-students-GEN
 ‘I saw all the students.’
 c. kitaab-u kull-i ʔ-tullaab-i
 book-NOM all-GEN the-students-GEN
 ‘the book of all the students’
 d. ma⁷a kull-i ʔ-tullaab-i
 with all-GEN the-students-GEN
 ‘with all the students’

Given that *kull* displays properties of heads, particularly the ability to host clitics, Shlonsky (1991:163) argues that its Hebrew equivalent, *kol*, is a head with the genitive NP as complement, as shown in (5) (see also Fassi Fehri 1982:217).

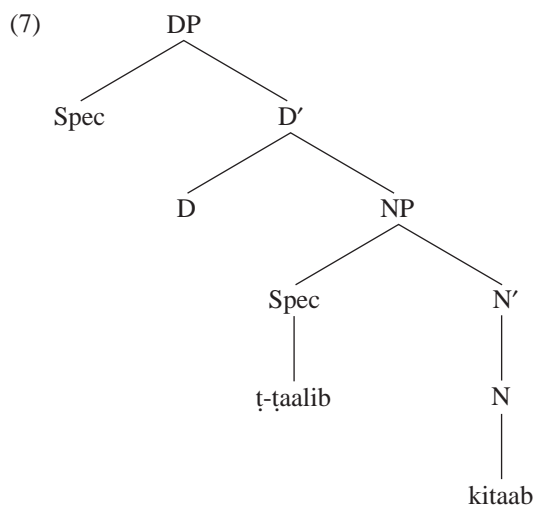


Elsewhere (Benmamoun 1993) I adopt Shlonsky's theory that *kull* is a head but argue that it is contained within the same representation as construct state (CS) nominals (see (6)) with the QP as complement of D and the genitive NP as specifier of Q.

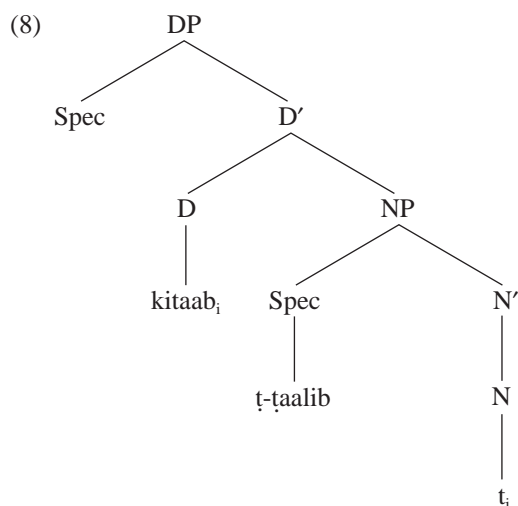
- (6) kitaab ʔ-taalib-i (SA)
 book the-student-GEN
 ‘the student's book’

Ritter (1987, 1991) and Mohammad (1988) propose that in the CS the first member is generated as a head of the lexical NP projection and the genitive noun is generated as specifier of the NP projection, as shown in (7).³

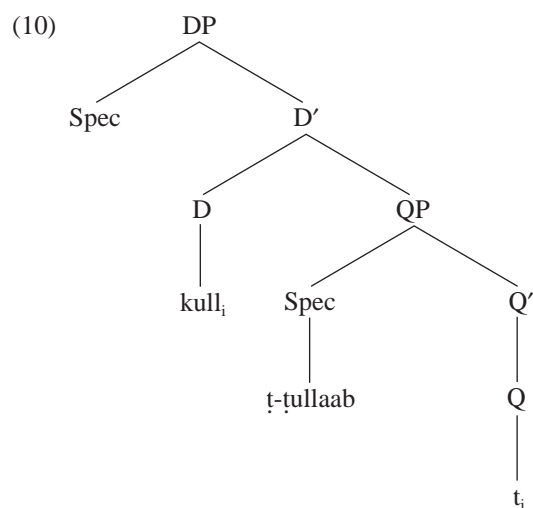
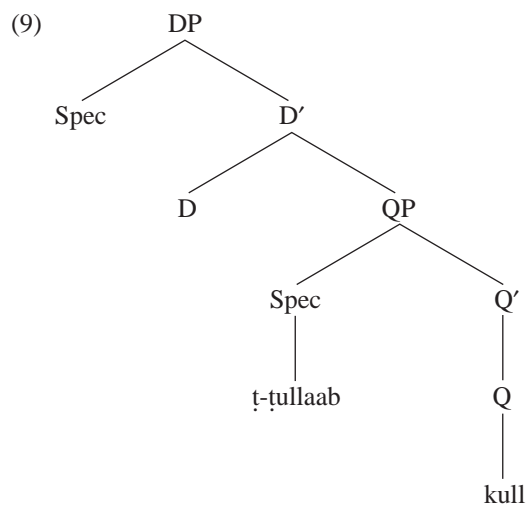
³ Actually, Ritter (1991) proposes a further functional projection headed by the number feature. The exact structure of the CS is not crucial for this article. The major generalization is that the quantifier *kull* can be a head of the CS.



The possessee-possessor order in the CS is then derived by moving the possessee (the head noun) to the head of DP, leaving the possessor (the genitive) within the lexical NP projection, as shown in (8).



Given that the quantifier *kull* and the NP that follows it in (4) display all the properties of the CS headed by nouns (6), I propose in Benmamoun 1993:34 to extend the same representation to the phrase headed by *kull*, as shown in (9). As shown in (10), *kull* is generated as head of a QP projection. The genitive NP, on the other hand, is generated in [Spec, QP]. The surface order is then derived by movement of Q to D. Such a representation makes the parallelism between *kull* and nominal heads of the CS complete.



Putting aside the differences between the representations in (5) and (9), the important point, convincingly argued for by Shlonsky (1991), is that in relation to the NP, *kull* is a head rather than an adjunct or a specifier.

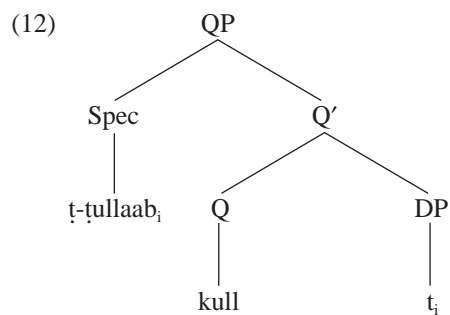
2 The NP_Q Pattern

2.1 Agreement

In addition to occurring to the right of *kull*, the NP can occur to its left. In this instance the quantifier carries a clitic, as illustrated in (11).

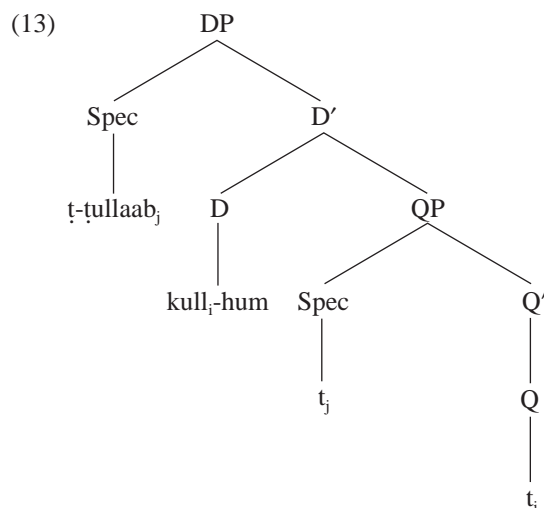
- (11) a. $\text{\textasciitilde{t}\text{-}\text{t}\text{u}\text{l}\text{l}\text{a}\text{a}\text{b}\text{-}\text{u}}$ $\text{kull}\text{-}\text{u}\text{-}\text{hum}$ $\text{\textasciitilde{z}\text{a}\text{a}\text{-}\text{u}\text{u}}$ (SA)
 the-students-NOM all-NOM-them come.PAST-3MP
 ‘All the students came.’
- b. $\text{ra}\text{-}\text{a}\text{y}\text{-}\text{tu}$ $\text{\textasciitilde{t}\text{-}\text{t}\text{u}\text{l}\text{l}\text{a}\text{a}\text{b}\text{-}\text{a}}$ $\text{kull}\text{-}\text{a}\text{-}\text{hum}$
 see.PAST-1S the-students-ACC all-ACC-them
 ‘I saw all the students.’
- c. $\text{kitaab}\text{-}\text{u}$ $\text{\textasciitilde{t}\text{-}\text{t}\text{u}\text{l}\text{l}\text{a}\text{a}\text{b}\text{-}\text{i}}$ $\text{kull}\text{-}\text{i}\text{-}\text{him}$
 book-NOM the-students-GEN all-GEN-them
 ‘the book of all the students’
- d. $\text{ma}\text{'}\text{a}$ $\text{\textasciitilde{t}\text{-}\text{t}\text{u}\text{l}\text{l}\text{a}\text{a}\text{b}\text{-}\text{i}}$ $\text{kull}\text{-}\text{i}\text{-}\text{him}$
 with the-students-GEN all-GEN-them
 ‘with all the students’

In these examples the presence of the pronominal clitic on the quantifier *kull* is obligatory. According to Shlonsky (1991:164–165), these examples are derived from their counterparts in (1) by movement of the NP to [Spec, QP] (12). The clitic then is the result of a specifier-head relation between the quantifier and the NP.⁴ This is the analysis I adopt in Benmamoun 1993 except that in the account I give there, the NP moves to [Spec, DP] (13). However, the essential point is that the NP is in a specifier-head relation with Q in the sentences in (11), which accounts for the presence of the clitic.⁵



⁴ For the view that the clitic is a realization of agreement with a pronominal, see Shlonsky 1997 and Aoun and Benmamoun 1998.

⁵ Treating the clitic as a pure agreement morpheme gets around the potential violation of the θ -Criterion and the binding theory that would ensue if it were treated as a pronominal or as licensing a null pronominal (Benmamoun 1993).



Therefore, in both cases we are dealing with the same constituent headed by the quantifier *kull*; the NP__Q pattern is derived from the Q__NP pattern by movement.

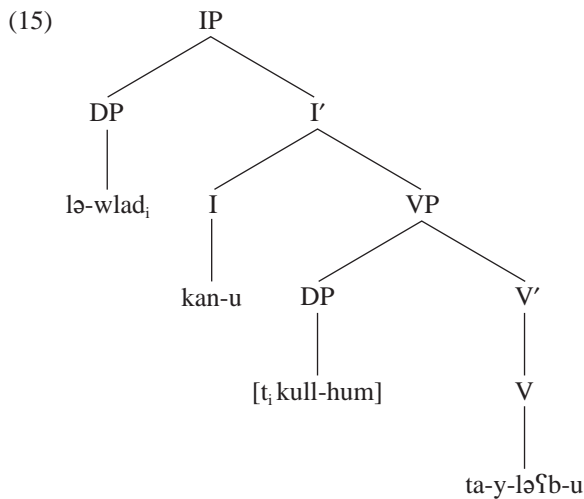
2.2 Quantifier Float

The movement account easily extends to instances of quantifier float (Q-float) where *kull* and the NP it relates to clearly do not form a single constituent.

- (14) a. t-tullaab-u kaan-uu kull-u-hum ya-drus-uun (SA)
 the-students-NOM be.PAST-3MP all-NOM-them 3-study-MP
 'The students were all studying.'
- b. lə-wlad kan-u kull-hum ta-y-lə⁷b-u (MA)
 the-children be.PAST-P all-them ASP-3-play-P
 'The children were all playing.'

As argued in Shlonsky 1991, the presence of the clitic on the quantifier can be easily explained if we assume that Q-float is derived by NP-movement through [Spec, QP/DP]. A representation of (14b) consistent with this analysis is given in (15) on page 628. In this respect, Shlonsky's analysis is similar to that of Sportiche (1988), who argues that floating quantifiers are contained within a phrase that hosts a trace of the NP. The only difference is that Sportiche considers the quantifier to be an adjunct of the NP, whereas Shlonsky considers it to be the head of the phrase that in turn contains a trace of the NP.

In short, the idea that the quantifier *kull* is the head of the projection that contains it has allowed for a simple analysis of the word order alternations it displays with respect to the NP it quantifies over. The differences between the Q__NP pattern and the NP__Q pattern are attributed to movement affecting the NP. Therefore, instead of different phrase structure schemas for the two patterns, one single schema augmented with movement is posited. In the next section I will



argue that the NP in the NP__Q pattern is not the specifier of QP/DP but is itself the head of the construction with Q(P) as adjunct.

3 Q + Clitic as Adjunct

3.1 The Relation between the NP and Q + Clitic

Let us closely examine the argument that in the NP__Q pattern, Q is the head (or extended head) of the projection containing the NP as specifier. The argument rests crucially on the assumption that the clitic is an agreement marker and that agreement obtains exclusively in specifier-head configurations.

It turns out that the evidence presented for this argument does not necessarily support it. The clitic could be the realization of an agreement relation with a pronominal that is in turn coindexed with the NP. In some contexts this conclusion is inevitable; in others, desirable. Thus, in unbounded dependency contexts, where the NP and the quantifier are separated by islands, the NP could not have been located in its surface position by movement. Consider the following example:

- (16) hadu lə-wlad_i lli mš-at [island qbəl] (MA)
 these the-children that leave.PAST-3FS before
 ma-y-žī-w kull-hum_i
 NEG-3-come-P all-them
 'These are the children that she left before meeting them all.'

In this sentence the quantifier is separated from the relative operator in the matrix CP by an adjunct island. This is a classic context where only the resumptive strategy is allowed in Arabic (Aoun and Benmamoun 1998), in which case the quantifier must be agreeing with a null pronominal within the island.

(17) NP_i . . . [Q + clitic pro_i]

The idea that the clitic may correspond to agreement with a pronominal is desirable for another reason. As is well known, overt extraction out of genitive constructions in Arabic is ruled out.

(18) *l-wəld_i lli ža [DP ⁷amm t_i] (MA)
 the-boy that come.PAST.3MS uncle

The only option allowed is the resumptive strategy.⁶

(19) l-wəld_i lli ža [DP ⁷amm-u_i] (MA)
 the-boy that come.PAST.3MS uncle-his
 ‘the boy whose uncle came’

Given that overt extraction out of genitive constructions is not allowed in Arabic, the analysis of Q-float as movement of the NP out of a projection headed by Q becomes questionable. However, notice that the above arguments do not necessarily argue that Q-float is not derived by NP-movement. They only show that Q-float in Arabic is not derived by NP-movement from *within* a projection *headed* by Q.

But if the NP cannot be extracted out of QP, a question arises about Q-float and the relation between the NP and Q + clitic. Unlike in (16), where it is relatively safe to say that the NP is related to QP via the resumptive pronoun strategy, in (20) the NP subject is in an A-position

⁶ It could be argued that extraction out of DPs/QPs must proceed through [Spec, DP/QP]. The extracted *wh*-phrase triggers agreement on the head in D/Q (Shlonsky 1991). According to this hypothesis, (18) is ruled out because of failure to move the *wh*-phrase through [Spec, DP] or to spell out agreement on the head noun in D. Two problems arise for this analysis. First, elements that do not trigger agreement, such as PPs, still cannot move out of DPs.

- (i) a. qri-t lə-ktab dyal ⁷omar (MA)
 read.PAST-1S the-book of Omar
 ‘I read Omar’s book.’
 b. *dyal mən qri-ti lə-ktab
 of whom read.PAST-2S the-book

Second, the head noun of the CS cannot undergo head movement and combine with sentential negation (ii) although other nominal predicates can optionally do so (iii).

- (ii) a. ⁷omar ma-mu⁷allim-š (MA)
 Omar NEG-teacher-NEG
 ‘Omar is not a teacher.’
 b. ⁷omar ma-sī mu⁷allim
 Omar NEG-NEG teacher
- (iii) a. *⁷omar ma-mu⁷allim-š nadia
 Omar NEG-teacher-NEG Nadia
 b. ⁷omar ma-sī mu⁷allim nadia
 Omar NEG-NEG teacher Nadia
 ‘Omar is not Nadia’s teacher.’

As I show in Benmamoun, forthcoming, (iiia) is ungrammatical because the movement of the head of the CS to the head of the negative projection violates the ban on extraction out of DPs. So although movement through [Spec, DP] may be a necessary condition for extraction out of DPs, it is not sufficient. Pied-piping seems to be the only option available for elements within DPs targeted for overt movement.

given that it follows both the complementizer and the tensed auxiliary verb (on a par with post-verbal subjects in VSO clauses).

- (20) smə⁷t bəlli kan-u lə-wlad ɣadi kull-hum y-safr-u (MA)
 hear.past.1s that be.PAST-P the-children going all-them 3-travel-P
 'I heard that all the children were going to travel.'

Assuming the theory that the floating quantifier in (20) is related to the NP it quantifies over by movement, we are led to say that the NP is moved from a phrase containing Q + clitic and the NP but crucially that the NP is not within a projection headed by the quantifier. That is, it seems that although the NP in Q-float constructions is not extracted out of the QP projection, we still want to say that the NP originates from a position where Q + clitic is located. As I will show, drawing mainly on Aoun and Benmamoun 1998, there is strong support for this conclusion.

The crucial facts involve reconstruction effects. In (21), from Lebanese Arabic, the clitic-left-dislocated (CLLDed) NP containing the bound pronoun must reconstruct so that the pronoun can be c-commanded by the quantifier that binds it.

- (21) təlmiiz-a_i š-šitaan bta⁷rfo ʔanno kəll m⁷allme_i (LA)
 student-her the-naughty.MS know.2P that every teacher.F
 ʔaaʂəʂət-o
 punished.3FS-him
 'Her naughty student, you know that every teacher punished him.'

Aoun and Benmamoun (1998) argue that reconstruction effects obtain only when the element in question is derived by movement.⁷ Elements derived by the resumptive pronoun strategy (essentially base-generated) cannot reconstruct. Thus, an NP related to a clitic within an island cannot reconstruct, as shown in (22).⁸

- (22) *təlmiiz-a_i š-šitaan fallayto ʔablma kəll m⁷allme (LA)
 student-her the-naughty.MS left.2P before every teacher.F
 tʔaaʂəʂ-o
 punish.3FS-him
 'Her naughty student, you left before every teacher punished him.'

Lack of reconstruction is attributed to the CLLDed NP's being generated in its surface position rather than being placed there by movement.

Now consider a CLLDed NP related to a floating Q + clitic. The NP could not have come from within the QP, given the ban on extraction out of genitive constructions. It is therefore

⁷ Note that I am assuming with Shlonsky (1997) and Aoun and Benmamoun (1998) that clitics are agreement markers that can reflect an agreement relation with either a lexical NP or a null pronominal. See the works cited for details.

⁸ Thanks to Joseph Aoun for discussion of the Lebanese Arabic data.

predicted that no reconstruction effects should obtain. However, this prediction is not borne out. The CLLDed NP can indeed reconstruct, as shown in (23).

- (23) ni⁻at bint-a_i fakkar-to ʔanno kill ʔemm_i (LA)
 grades daughter-her think.PAST-2P that every mother
 hafadhit-un kill-un
 memorize-them all-them
 ‘You thought every mother memorized all the grades of her daughter.’

However, when the CLLDed NP is related to a QP within an adjunct island, reconstruction is not possible.

- (24) *ni⁻at bint-a_i t⁷azzab-to la⁻inno kill ʔemm_i ma (LA)
 grades daughter-her bother.PAST-2P because every mother NEG
 hafid-it-un kill-un
 memorize.PAST-3FS-them all-them

What these facts show is that although the CLLDed NP is not extracted from within the QP projection, it is extracted from a position near Q + clitic (*kill-un* in (23)). The question is, Where is the NP coming from? To deal with this question, we need to revisit the NP__Q pattern. Recall that this pattern has been argued to display a specifier-head relation between NP and Q. In the next section I will discuss independent arguments showing that in the NP__Q pattern the quantifier is instead an adjunct that modifies the NP. In other words, the head of the phrase is a noun rather than Q. This analysis will in turn enable us to account for the reconstruction facts. The main conclusion, then, is that the NP__Q pattern is not derived from the Q__NP pattern.

3.2 The Adjunct Status of Q + Clitic in the NP__Q Pattern

Two main arguments can be given to show that the NP in the NP__Q pattern is not a specifier of QP/DP but is rather itself the main phrase modified by a QP. The first argument deals with the Case properties of the NP and Q; the second deals with agreement.

3.2.1 The Case Properties of NP and Q The Case on the NP in the NP__Q pattern varies according to the head that governs the projection containing the NP. This contrasts with the situation in the Q__NP pattern, where the NP invariably carries genitive Case.

- (25) a. t-tullaab-u kull-u-hum ʔaa⁻uu (SA)
 the-students-NOM all-NOM-them come.PAST-3MP
 ‘All the students came.’
 b. ra⁻ay-tu t-tullaab-a kull-a-hum
 see.PAST-1S the-students-ACC all-ACC-them
 ‘I saw all the students.’
 c. kitaab-u t-tullaab-i kull-i-him
 book-NOM the-students-GEN all-GEN-them
 ‘the book of all the students’

These facts are more consistent with an analysis whereby the noun *tullaab* is the head of the projection containing Q. As a head, it carries the Case assigned to the whole projection.⁹ As far as Q is concerned, it is simply an NP adjunct. Agreement with the NP in Case then follows from the fact that NP modifiers such as adjectives agree in Case.

- (26) a. $\check{z}aa\bar{a}$ $\check{t}\text{-}\check{t}aalib\text{-}u$ $l\text{-}\check{z}adiid\text{-}u$ (SA)
 come.PAST.3MS the-student-NOM the-new-NOM
 ‘The new student came.’
 b. $ra\bar{a}y\text{-}tu$ $\check{t}\text{-}\check{t}aalib\text{-}a$ $l\text{-}\check{z}adiid\text{-}a$
 see.PAST-1S the-student-ACC the-new-ACC
 ‘I saw the new student.’
 c. $kitaab\text{-}u$ $\check{t}\text{-}\check{t}aalib\text{-}i$ $l\text{-}\check{z}adiid\text{-}i$
 book-NOM the-student-GEN the-new-GEN
 ‘the book of the new student’

3.2.2 *Agreement in the Context of the NP__Q Pattern* When the NP related to Q is a pronominal, these constructions display an intriguing doubling phenomenon illustrated in (27) (Benmamoun 1993).

- (27) a. $tlaqa\text{-}*(hum)$ $kull\text{-}hum$ (MA)
 meet.PAST.3MS-them all-them
 ‘He met them all.’
 b. $ktub\text{-}*(hum)$ $kull\text{-}hum$
 books-them all-them
 ‘the books of all of them’
 c. $m^7a\text{-}*(hum)$ $kull\text{-}hum$
 with-them all-them
 ‘with them all’

As these examples show, both the governing verb (27a), noun (27b), and preposition (27c), on one hand, and *kull*, on the other, must carry the clitic. This doubling phenomenon is restricted to quantifiers such as *kull* ‘all’, *bu d* ‘alone’, and *bžuzž* ‘both’.

⁹ Merchant (1996:181–182) cites facts from German showing that when the Q precedes the NP, it may or may not agree with it in Case. On the other hand, in Q-float contexts the quantifier must agree in Case with the NP.

- (i) a. $Gestern$ $habe$ ich $all(e)$ $diese$ $Bucher$ $gelesen$.
 yesterday have I all.ACC these.ACC books read
 ‘I read all these books yesterday.’
 b. $Diese$ $Bucher$ $habe$ ich $gestern$ $alle$ $gelesen$.
 these.ACC all.ACC

Since the quantifier and the NP it quantifies over carry the same Case in both the Q__NP pattern and the Q-float construction, it is highly likely that the quantifier is a modifier of the NP in both cases. As a modifier, it agrees with the NP in Case. (Thanks to Hans Hock for discussion of the German facts.)

- (28) a. tlaqa-*(hum) buħd-hum (MA)
 meet.PAST.3MS-them only-them
 'He met them only.'
 b. ktub-*(hum) buħd-hum
 books-them only-them
 'their books only'
 c. m⁷a-*(hum) buħd-hum
 with-them alone-them
 'with them only'
- (29) a. tlaqa-*(hum) bžuž-hum
 meet.PAST.3MS-them both-them
 'He met them both.'
 b. ktub-*(hum) bžuž-hum
 books-them both-them
 'both their books'
 c. m⁷a-*(hum) bžuž-hum
 with-them both-them
 'with them both'

In particular, it is strictly ruled out in the context of other genitive (CS) nominals.

- (30) ⁷əmm-(*hum) bba-hum (MA)
 uncle-(them) father-their
 'their father's uncle'

Before accounting for these constructions, let us rule out the hypothesis that this is a case of clitic doubling. First, neither Moroccan Arabic (the dialect under discussion) nor Standard Arabic allows clitic doubling.

- (31) a. *ktab-ha lə-l-mu⁷allima (MA)
 book-her to-the-teacher
 b. *kitaabu-haa li-l-mu⁷allima (SA)
 book-her to-the-teacher
 c. *šəf-t-ha lə-l-mu⁷allima (MA)
 see.PAST-1S-her to-the-teacher
 d. *ra⁻ayu-tu-ha li-l-mu⁷allima (SA)
 see.PAST-1S-her to-the-teacher

Second, unlike in familiar cases of clitic doubling, in these cases the clitic on the governing head cannot cooccur with a lexical NP.

- (32) a. *tlaqa-hum lə-wlad kull-hum (MA)
 meet.PAST.3MS-them the-children all-them

- b. *ktub-hum lə-wlad kull-hum
 books-them the-children all-them
 c. *m⁷a-hum lə-wlad kull-hum
 with-them the-children all-them

Finally, in dialects that do allow clitic doubling, such as Lebanese Arabic (Aoun 1996), it is not obligatory, whereas the doubling in (27) is.

- (33) a. kariim šeef ktab-o la-saami (LA)
 Karim see.PAST.3MS book-his to-Sami
 ‘Karim saw Sami’s book.’
 b. kariim šeef ktab saami
 Karim see.PAST.3MS book Sami
 ‘Karim saw Sami’s book.’
 c. kariim šeef ktab-o la-elo
 Karim see.PAST.3MS book-his to-him
 ‘Karim saw his book.’
 d. kariim šeef ktab-o
 Karim see.PAST.3MS book-his
 ‘Karim saw his book.’

Thus, the doubling phenomenon that obtains in the context of a QP associated with a clitic is not an instance of clitic doubling. Under the analysis where Q + clitic is an adjunct, the doubling phenomenon is fully predictable given that the main argument of the governing head is the pronominal rather than the quantifier. Under the alternative analysis these facts are puzzling since the head of the construction governed by the verb/noun/preposition is the quantifier.

Another related set of facts that is fully derivable from the present analysis concerns the agreement asymmetries found in Arabic. As is well known, in Standard Arabic the verb does not carry the number morpheme when the lexical subject is postverbal (34). On the other hand, when the subject is preverbal, the number suffix must be present (35).

- (34) a. ʔakal-**at** ʔ-ʔaalibaat-u (SA)
 eat.PAST-3FS the-students.FP-NOM
 ‘The students ate.’
 b. *ʔakal-**na** ʔ-ʔaalibaat-u
 eat.PAST-3FP the-student.FP-NOM
- (35) a. ʔ-ʔaalibaat-u ʔakal-**na**
 the-student.FP-NOM eat.PAST-3FP
 ‘The student ate.’
 b. *ʔ-ʔaalibaat-u ʔakal-**at**
 the-student.FP-NOM eat.PAST-3FS

A similar asymmetry arises in Moroccan Arabic in the context of the demonstrative *hada*

‘this.’ The plural and gender morpheme does not show up when the lexical NP follows the demonstrative (36a). On the other hand, when the lexical NP precedes the demonstrative, the plural and gender morpheme must be realized (36b).

- (36) a. had lə-wlad (MA)
 this the-children
 ‘these children’
 b. lə-wlad had-u
 the-children this-P
 ‘these children’
 c. *had-u lə-wlad
 this-P the-children

These agreement asymmetries are dealt with in sufficient detail in Benmamoun, forthcoming, and the references cited there. Here I will focus on the empirical generalization rather than on how it should be derived. Now, consider agreement in the context of the three patterns Q__NP, NP__Q + clitic, Q + clitic. In the context of the Q__NP and the NP__Q + clitic patterns Standard Arabic exhibits partial agreement (no number morpheme on the verb).

- (37) a. žaa⁻a kull-u t-ṭullaab-i (SA)
 come.PAST.3MS all-NOM the-students-GEN
 ‘All the students came.’
 b. žaa⁻a t-ṭullaab-u kull-u-hum
 come.PAST.3MS the-students-NOM all-NOM-them
 ‘All the students came.’

On the other hand, in the context of the Q + clitic pattern Standard Arabic exhibits full agreement (the verb carries the number morpheme).

- (38) a. žaa⁻-uu kull-u-hum (SA)
 come.PAST-3MP all-NOM-them
 ‘They all came.’
 b. *žaa⁻a kull-u-hum
 come.PAST.3MS all-NOM-them

These facts are as expected if in the context of the Q__NP and NP__Q patterns, we are dealing with QP and NP phrases, respectively, in which case the verb carries partial agreement because the subject in (37a) and (37b)—headed by *kull* and *ṭullaab*, respectively—is lexical.¹⁰ In the

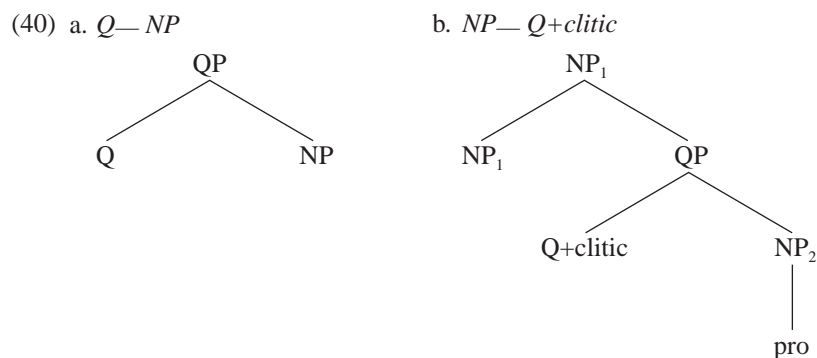
¹⁰ Notice that although Q is the head of QP in the Q__NP pattern, agreement accesses the features of the NP complement. Standard percolation conventions can be invoked to account for how the features are accessed. Alternatively, given the representation in (9), the NP and Q are in a specifier-head relation within the QP projection and thus the NP can transfer the features to Q. See Le Tourneau 1995 and Benmamoun 1998 for discussion of this specific issue. The situation may be different in other languages. As pointed out by one reviewer, in some languages, such as Russian, the phrase Q + genitive NP triggers the so-called default agreement. A crosslinguistic analysis of the issue of how agreement is carried out in the context of phrases containing quantifiers is beyond the scope of this article.

Q + clitic pattern in (38), by contrast, the subject is a null pronominal, in which case full agreement is obligatory.

The same analysis carries over to the agreement asymmetries that arise in the context of the demonstrative *hada*.

- (39) a. had lə-wlad kull-hum (MA)
 this the-children all-them
 ‘all these children’
 b. had-u kull-hum
 this-P all-them
 ‘all these’
 c. *had kull-hum
 this all-them

In short, there is substantial syntactic evidence based on Case and agreement that in the pattern Q__NP, Q is the head of the projection containing the NP. On the other hand, when Q carries the clitic, as is the case when the NP precedes it or when the NP is a null pronominal, it heads a QP adjunct that modifies the NP. The agreement clitic on Q is triggered by a pronominal complement or specifier of QP (depending on whether we adopt (5) or (9) as the representation for QPs). The appearance of agreement between Q and the NP is then due to the fact that the pronominal complement/specifier of Q is coindexed with the NP, very much like control and appositive structures (Aoun, Hornstein, and Choueiri 1998). Putting aside other possible functional projections, the two patterns are represented as in (40).



NP₁ in (40b) could be either a lexical NP or a null pronominal. QP is essentially an appositive phrase. Since it is an appositive phrase and the main argument is the NP, the presence of the pronominal clitic, or the null pronominal licensed by the clitic, does not violate the θ -Criterion or the binding theory. Notice that this representation accounts for the reconstruction effects given that NP₁ originates from a projection to which the quantifier is adjoined. Moreover, agreement relations are sensitive to the lexical status of the head of NP₁ rather than Q.

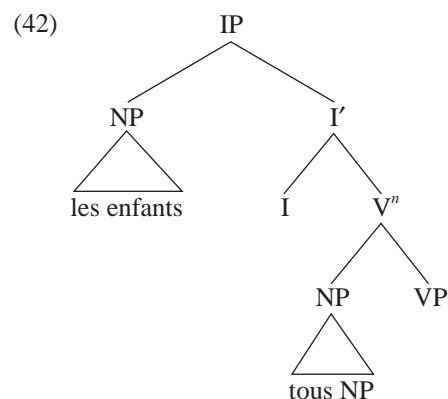
The conclusion, then, is that the two patterns, Q__NP and NP__Q, represent distinct syntactic

phrases involving different syntactic relations.¹¹ Before concluding the article, I would like to briefly explore Q-float constructions in light of the conclusion that Q + clitic is an adjunct. Specifically, given that the clitic on Q is no longer the result of a specifier-head relation with the NP, can we still maintain that floating quantifiers are contained within NPs, or are they best characterized as adverbs adjoined to VP?

4 Agreement and Q-Float

The argument that the clitic on Q is the result of a specifier-head relation with the NP has provided strong support for Sportiche's (1988) theory that floating quantifiers are not VP adverbs but stranded elements that are part of the projection containing the NP.¹² Thus, according to Sportiche, the French quantifier *tous* 'all' in (41) is contained within the projection where the subject is base-generated. Q-float is then due to the theory that NP-movement to [Spec, IP] can target the NP argument, leaving the quantifier behind in the base position of the subject, as illustrated in (42).

- (41) Les enfants ont tous vu ce film.
the children have all seen this movie



¹¹ If this analysis is correct, we are left with the conclusion that Q + clitic cannot be an argument but only an adjunct. The difference in behavior between Q + pronominal and Q + NP does not seem to be restricted to Arabic (and Hebrew). For example, in English the preposition *of* must be present if the complement of Q is a pronoun but not if it is a lexical NP (see Maling 1976).

- (i) a. all the children
b. *all them
c. all of them
- (ii) a. both Mary and Bill
b. *both them
c. both of them

I will leave this issue open.

¹² See, however, Doetjes 1992 for criticism of Sportiche's account and arguments for treating floating quantifiers as VP adverbs.

The most significant part of Shlonsky's (1991) analysis is that in Q-float constructions Q agrees with the NP. Since it is assumed that adverbials do not carry agreement, the theory that Q-float is the result of NP-movement that strands the quantifier becomes very plausible (Merchant 1996:180).¹³ However, the alternative I have provided takes care of the agreement issue. The quantifier agrees with the NP by virtue of its agreement with the pronominal within QP (NP₂ in (40b)), which is coindexed with the NP (NP₁ in (40b)). Thus, one can still maintain the generalization that bare adverbials of the usual sort do not carry agreement but heads of adverbial phrases (and certainly clauses) can carry agreement depending on the internal structure of the constituents they head. Now, since the agreement relation between Q + clitic and the NP is only indirect, it can no longer be taken as an argument against treating floating quantifiers as VP adverbs.

In the previous section I maintained that Q + clitic is contained within the NP as an adjunct modifier. In this respect, the present analysis is closer to Sportiche's (1988), whereby Q is analyzed as an NP adjunct. Although this is true for the facts discussed thus far, there are other contexts where even when Q carries the agreement clitic, it is hard to maintain that NP and Q share the same phrase at some point in the syntactic derivation. In these contexts Q + clitic is better characterized as a VP adverb.

Consider the Moroccan Arabic quantifier *bu d* 'alone'.

- (43) a. *l-wəld buhd-u ža* (MA)
 the-boy alone-his come.PAST.3MS
 'Only the boy came.'
 'The boy came alone.'
- b. *l-wəld ža buhd-u*
 the-boy come.PAST.3MS alone-his
 'The boy came alone.'
 'Only the boy came.'

This quantifier has two possible interpretations. The sentence in (43a) can mean either that the boy came alone or that only the boy came. The latter meaning is more prominent.¹⁴ The sentence in (43b) is equally ambiguous, although here the more prominent interpretation is that the boy came alone. Thus, *bu d*, which carries the clitic *-u*, can be interpreted as quantifying over the subject and restricting the reference to the boy. The implication then is that nobody else came. The other interpretation is that the quantifier modifies the verb by qualifying how the boy came. In this instance the boy came by himself. It leaves open the possibility that other people might have come but they could have come with someone else. The latter interpretation becomes more salient when we put another word for 'only', *yallah*, in front of the NP *l-wəld*.

¹³ See Bobaljik 1998 for a detailed discussion of the syntactic status of floating quantifiers.

¹⁴ The prominence of a particular reading is obviously related to word order, an important issue with implications for the debate about the position(s) of the subject and the workings of movement.

- (44) yallah l-wəld lli ža buħd-u (MA)
 only the-boy that come.PAST.3MS alone-his
 ‘Only the boy came by himself.’

The same manner adverbial interpretation obtains if we conjoin the quantifier and a PP adverb.

- (45) ma-⁷raft-š waš ⁷omar ža buħd-u (MA)
 NEG-know.PAST.1S-NEG whether Omar come.PAST.3MS alone-his
 wla m⁷a xu-h
 or with brother-his
 ‘I don’t know whether Omar came alone or with his brother.’

Notice that the quantifier carries the clitic and is conjoined with a PP adverb. This fact suggests that the quantifier could not have originated in a projection containing the NP subject. Support for this conclusion is strengthened by the fact that the quantifiers *kull* and *bžuž* ‘both’ can cooccur with the quantifier *bu d* only under its adverbial interpretation.

- (46) a. lə-wlad kan-u bžuž-hum ta-y-lə⁷b-u buħd-hum (MA)
 the-children be.PAST-P both-them ASP-3-play-P alone-them
 ‘Both the children were playing alone/by themselves.’
 b. lə-wlad kan-u kull-hum ta-y-lə⁷b-u buħd-hum
 the-children be.PAST-P all-them ASP-3-play-P alone-them
 ‘All the children were playing alone/by themselves.’

In both sentences the most salient interpretation is the one where the quantifiers *bžuž* and *kull* modify the subject NP and *bu d* has a manner adverbial interpretation. If we change the order of the quantifiers, we get a different interpretation. Thus, in (47) *bu d* modifies the subject NP and *bžuž* has a manner adverbial interpretation.

- (47) ⁷omar w nadia buħd-hum ža-w bžuž-hum (MA)
 Omar and Nadia alone-them come.PAST-P both-them
 ‘Only Omar and Nadia came together.’

It is very unlikely that in (46) and (47) the quantifiers in each sentence could have originated in the same phrase. The fact that in each sentence both quantifiers carry the clitic strongly supports the idea that the presence of the clitic does not necessarily argue for a representation whereby the quantifier and the NP are generated in the same phrase.

Given the above facts, one is tempted to take a strong position and assume a unified analysis for Q-float, probably as VP-adjunction (Dowty and Brodie 1984, Williams 1994, Bobaljik 1995). However, this analysis cannot explain why Q+clitic can be displaced together with the NP (Shlonsky 1991).

- (48) a. l-wəld buħd-u smə⁷-t bəlli ža (MA)
 the-boy alone-his hear.PAST-1S that come.PAST.3MS
 ‘I heard that only the boy came.’

- b. lə-wlad bʒuʒ-hum byi-t l-mu⁷allim yə-tlaqa-hum
 the-children both-them want.PAST-1S the-director 3-meet-them
 ‘I want the director to meet both children.’
- c. lə-wlad kull-hum byi-t l-mu⁷allim yə-tlaqa-hum
 the-children all-them want.PAST-1S the-director 3-meet-them
 ‘I want the director to meet all the children.’

In these sentences both the NP and the Q + clitic are CLLDed. The fact that both NP and Q can be fronted suggests that they form a constituent, as originally argued by Shlonsky (1991). Moreover, the manner adverbial interpretation is not easily available, as shown in (49).

- (49) ??l-wəld buhd-u smə⁷-t bəlli ʒa (MA)
 the-boy alone-his hear.PAST-1S that come.PAST.3MS
 (w l-bənt hətta hiya)
 (and the girl also)

The reading where *bu d* has a manner adverbial interpretation is only marginally available in (49), and only with a heavy pause between *bu d* and the left-dislocated NP. This suggests that *bu d* is not within the constituent containing the NP. Most probably, it has been fronted on its own. Support for this comes from the fact that when *bu d* is related to a predicate inside an adjunct island, the adverbial interpretation is ruled out regardless of its prosodic property.

- (50) l-wəld buhd-u smə⁷-t bəlli mš-at mən bə⁷dma (MA)
 the-boy only-his hear.PAST-1S that leave.PAST-3FS from after
 tlaqat-u
 meet.PAST.3FS-him
 ‘Only the boy, I heard that she left after she met him.’
 ‘*The boy, I heard that she left after she met him alone.’

Absence of the adverbial interpretation for *bu d* in (50) is easily explained if *bu d* has been moved on its own, in which case the movement violates the ban on extraction from adjunct islands. The NP *l-wəld*, on the other hand, is base-generated in its surface position and binds a resumptive pronoun inside the adjunct clause.

In short, a unified analysis that reduces floating quantifiers to a single configuration, as NP adjuncts or VP adjuncts, does not seem to be empirically correct. In some instances a good case can be made that Q + clitic is an NP adjunct, and in others it seems to behave like a VP adjunct.¹⁵ To specifically determine which instance of Q + NP is an NP adjunct and which one is a VP adjunct, a detailed semantic and syntactic investigation of floating quantifiers is warranted. What I hope to have shown here is that the ability of Q to carry agreement clitics cannot be conclusively relied upon to determine the syntactic status of floating quantifiers.

¹⁵ The fact that floating quantifiers that are VP adjuncts agree with the subject may not be problematic if they are appositive phrases or small clauses with a pronominal that dictates agreement on Q.

5 Conclusion

The main objective of this article was to investigate the syntax of the quantifier *kull* ‘all’ in Arabic and see whether the two patterns Q__NP and NP__Q are both headed by Q. I argued that the two patterns display different syntactic properties: the former is indeed a QP headed by Q, whereas the latter is an NP with Q heading an adjunct phrase. In addition, I showed that one of the strong arguments that has been advanced for the specifier-head configuration attributed to the NP__Q pattern—namely, the presence of the agreement clitic on Q—does not necessarily warrant that conclusion. Quantifiers that are clearly adverbial adjuncts carry the same agreement clitic.

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