

HEBREW FLOATING QUANTIFIERS

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Abstract

This paper addresses the issue of Floating Quantifier phenomena in Hebrew, focusing on the case of the universal quantifier *kol* ('all') and proposes a new, non-derivational analysis in the LFG framework in which the floating and the non-floating quantifier constructions are treated separately. This is based on semantic evidence showing that the quantifiers in these constructions have non-identical semantic effects. Thus, there is no need to assume a derivational relation between the two constructions.

I propose to analyze the Floating Quantifier construction in Hebrew as an instance of Topicalization, accompanied by Triggered Inversion. The incorporated pronoun on the floating quantifier is explained by the Extended Coherence Principle, when the pronoun is anaphorically bound by the topic. The pragmatic markedness of this construction naturally follows from this analysis, it being an instance of Topicalization.¹

1. Introduction

1.1 Floating Quantifier phenomenon

The phenomenon of Floating Quantifiers (henceforth FQ) is demonstrated in (1) for French:

- (1) a. *Tous les enfants ont vu ce film.*
all the children have seen this movie
'All the children have seen this movie.'
- b. *Les enfants ont tous vu ce film.*
the children have all seen this movie
'The children have all seen this movie.'
- c. *Les enfants verront tous ce film.*
the children see.fut all this movie
'The children will all see the movie.' (Sportiche 1988:426-7)

What is particularly interesting in these constructions is the relation between the quantifier *tous* and the DP it modifies, *les enfants* in (1b,c), where it seems that the quantifier has floated rightwards from its DP. Similar constructions exist in Hebrew as well:

- (2) a. *kol ha-yeladim halxu la-yam*
all the-children.MASC.PL went to-the-sea
'All the children went to the sea'

¹ This paper was presented at the LFG09 conference and is based on my MA thesis. I wish to thank my supervisor, Prof. Yehuda Falk and participants in the LFG09 for comments.

- b. *ha-yeladim kul-am halxu la-yam*
 the-children.MASC.PL all.3.MASC.PL went to-the-sea
 ‘The children went all to the sea.’
- c. *ha-yeladim halxu kul-am la-yam*
 the-children.MASC.PL went all.3.MASC.PL to-the-sea
 ‘The children went all to the sea.’

This paper focuses on the universal quantifier *kol* (‘all’). The quantifier may appear adjacent to the NP, forming a QP² ((2a)), thus it will be referred to as NP-adjacent Q.³ Alternatively, it can appear in FQ constructions, as in (2b,c). However, the difference between French and Hebrew is that in Hebrew the quantifier must appear in its inflected form with an incorporated pronoun,⁴ thus agreeing with the subject in number and gender (and is phonologically realized as *kul* and not *kol*). Moreover, the FQ construction is discourse marked in Hebrew.

In the sections below I will provide an account for the FQ phenomena in Hebrew (which can probably be extended to related Semitic languages as well). Some particular facts require an explanation: first, the incorporated pronoun on the FQ, which agrees with the antecedent NP; second, the nature of the relation between the NP-adjacent Q and the FQ constructions. Moreover, an analysis of FQ phenomenon in Hebrew must also take into account the pragmatic markedness of this construction and the interaction of these pragmatic factors with the syntax of the construction. And finally, the important question to ask is what accounts for the quantifier ‘float’, or alternatively, why does the quantifier surface in a different position.

2. Previous Accounts

2.1. Adverbial analyses

Adverbial accounts treat FQs as adverbs. As was originally noted by Kayne (1975), and mentioned by Pollock (1989), Baltin (1995) and Hurst (2007), FQs occupy positions in which adverbs canonically surface, namely

² I adopt Shlonsky’s (1991) proposal to analyze the Q with its DP/NP as a functional projection QP, with Q being its functional head in the sense of Abney (1987), for the following reasons: (cf. also Spector 2008, Fassi Fehri 1988, Shlonsky 1991)

- The Q in Hebrew can host clitics (or incorporated pronouns) (2b) and (7b). Only lexical and functional heads can do this in Hebrew.
- Q selects its DP/NP, e.g. *kol* subcategorizes for a definite plural or collective NP.
- Q selects for partitive PPs (some Qs allow it and some do not).
- Q and its DP/NP or its incorporated pronoun form a constituent.

³ I follow Falk (2006) in his analyzing the definite noun phrases in Hebrew as NPs.

⁴ In the sense of Bresnan (2001).

to the left of V and to the right of verbal elements, such as auxiliaries and modals.

- (3) *Les soldats ont {tous les deux} été {tous les deux} présentés {tous les deux} à Anne par ce garçon.*
 the soldiers have {all the two} been{all the two} introduced {all the two} to Anne by this boy
 ‘Both soldiers were introduced to Anne by this boy.’ (Kayne 1975)

This holds for both English and French. Moreover, the possibilities for the position of adverbs in these languages correspond to the possible positions of placing FQs. While English allows an adverb or an FQ to immediately follow the subject, French does not:

- (4) a. My friends all/probably will leave.
 b. **Les enfants tous/bientôt vont partir.*
 the children all/soon will leave
 ‘The children will all/soon leave’ (Pollock 1989)

Moreover, it was observed by Sag (1978) that FQs pattern with adverbs, and not with negation, in the case of VP-ellipsis:

- (5) a. Otto has read this book, and my brothers have (all/certainly) read it, too.
 b. Otto has read this book, and my brothers have (*all/*certainly)____, too.
 c. Otto has read this book, but my brothers have (n't/not/*all)____.

However, Bobaljik (2003) points that it was noted by Kayne (1981) and Beletti (1982) that the dependence between an FQ and an NP obeys in essence the same locality constraints (in terms of c-command) as those holding between an anaphor and its antecedent. Thus, the DP must c-command the FQ in (6), and no finite clause boundary or specified subject may intervene between them, as shown in (7):

- (6) a. **[The mother of my friends_i] has all_i left.*
 b. **La mère de mes amis_i est tous_i partie.*
 the mother of my friends is all left
 intended: ‘The mother(s) of all my friends left.’ (Kayne 1981)
- (7) a. **My friends_i think that I have all_i left.*
 b. **Mes amis_i pensent que je suis tous_i parti.*
 my friends think that I am all left
 intended: ‘My friends all think that I have left.’ (Kayne 1981)

Thus, FQs were treated as anaphoric adverbs, related to their hosts via binding. Baltin (1995), on the other hand, argues that FQs are preverbs, a class of adverbs adjoined to the left edge of a predicate.

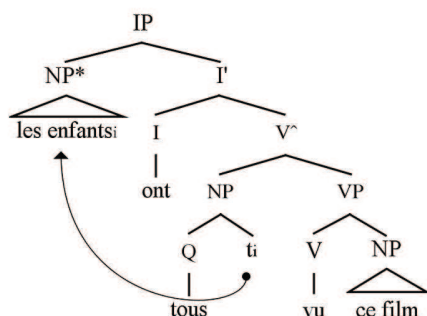
When trying to formalize these analyses for Hebrew, one encounters a problem. Hebrew exhibits an incorporated pronoun on the floated Q, which is not a property of adverbs. This type of pronoun is usually attached to NPs and to Qs. Thus, we would not want to claim that there exists a special category of adverbs in Hebrew which can host incorporated pronouns. While it is true also for Hebrew that there is a locality constraint between the antecedent NP and the FQ, I believe this can be explained by other means, as we shall further see, taking into account the presence of an incorporated pronoun on the FQ and the pragmatic markedness of the FQ construction.

2.2. Derivational analyses

The most influential account of FQs in the literature is Sportiche (1988) for French. This analysis was eventually taken as an argument for the Subject Internal VP-Hypothesis, based on the distribution and the proposed structural position of FQs in French. Several known properties of FQs served as a background for Sportiche's analysis. First, it has been assumed that FQs and NP-adjacent Qs modify their related NP in the same way, e.g. *tous* in (1a) and (1b,c) universally quantifies over the set denoted by the NP. Second, in some languages (e.g. Romance), the quantifier and its NP agree in number and gender, pointing out determiner-like properties of the quantifier. Third, FQs tend to appear on the left periphery of VP. And finally, there is an anaphoric locality condition on FQs and their NP antecedent (Kayne 1981, Beletti 1982).

All the aforementioned facts led Sportiche to assume that the quantification in (1a) and (1b,c) is identical, that is to say that the floating and the non-floating quantifiers are of the same logical type. Thus, there is a derivational relation between them, i.e. they have the same underlying syntactic structure. FQ forms a constituent with the NP at D-structure and the phenomenon of Q-float is actually the stranding of the Q in situ, in a position adjacent to the trace of the NP (cf. (8) for (1a,b)):

(8)



Sportiche (1988)

The innovation of this analysis is the claim that the quantifier itself originates VP internally, even in the NP-adjacent NP cases, where on the surface the quantifier precedes its NP (cf.(1a)). That is to say that the original position of the quantifier is the 'floated' one. The quantifier then stays in situ, while its NP-associate is the one that moves to SPEC IP to get case, leaving a trace to the right of Q. Thus, even when the quantifier is stranded from its NP, the antecedent-anaphor relations still hold. This analysis captures the observation that even the floated Q is able to modify its NP and in some languages to agree with it, since at D-structure [Q NP] form a single constituent (Bobaljik 2003).

Shlonsky (1991) extends this analysis for Hebrew. While Hebrew quantifiers do not agree with their NPs in number and gender as in Romance languages, FQs in Hebrew host an incorporated pronoun (cf. 2b,c). Shlonsky treats this pronoun as an agreement clitic, which licenses movement of Q to SPEC QP and assumes a QP projection. The NP then moves to SPEC IP, creating a FQ configuration:

(9) [NP]_i ... [QP [e]_i Q [e]_i]

There are a few basic premises of the derivational accounts which seem problematic. To begin with, Sportiche (1988), followed by Shlonsky (1991) base their analyses on the assumption that the NP-adjacent Q and the FQ are semantically identical. In the next section I will show that in fact, they differ substantially.

Secondly, based on the alleged semantic identity of these two types of quantifiers, derivational accounts also propose a syntactic derivational relationship between the floating and the non-floating quantifier

constructions. However, I will claim that there is no justification for this assumption and will propose a different account of Hebrew FQs.

Finally, while the derivational accounts rely on the constituency of [Q NP/t] in both constructions, I will show that the quantifier forms a constituent with its NP only in the non-floating version, i.e. [Q NP].

3. Semantic Differences ⁵

Hebrew *kol* is polysemous.⁶ This paper deals with one interpretation of *kol*, namely that of English plural *all*. The *kol* we are dealing with takes a plural, definite NP or a plural incorporated pronoun as its complement.

As was already mentioned, one of the motivations for derivational accounts is the alleged semantic identity between NP-adjacent Qs and FQs (Sportiche 1988). In this section I will show that this is not so and claim that these quantifiers differ semantically on several counts:

3.1 Type of Predication:

NP-adjacent Q and Floating Q differ in type of predication, i.e. whether the sentence has a collective or distributive reading, depending on the position of the quantifier:

- (10) a. *kol ha-yeladim herimu even*
 all the-children picked up stone
 ‘All the children picked up a stone.’
 b. *ha-yeladim herimu kul-am even*
 the-children picked up all_{3.MASC.PL} stone
 ‘The children all picked up a stone.’

(10a) has both collective and distributive readings. If there is a group of six children, the sentence means either that each of the six children picked up one stone (six stones in total) on the distributive reading, or that the six children as a group picked up one stone (one stone in total) on the collective reading. (10b), on the other hand, is understood collectively. If there are six children, the most salient reading is that the six children as a group picked up one stone (one stone in total). Consider (11):

- (11) a. *kol ha-yeladim herimu even ve-Dani herim even.*
 all the-children picked up stone and-Dani picked up stone
 ‘All the children picked up a stone and Dani picked up a stone.’

⁵ This section was adopted from Spector and Moldovano (2007).

⁶ It can be translated into English *all, any, every, each, entire(ly)* and *whole*.

- b. ??? *ha-yeladim herimu kulam even ve-Dani*
 the-children.MASC.PL picked up all_{3.MASC.PL} stone and-Dani
herim even.
 picked up stone
 ‘The children all picked up a stone and Dani picked up a stone.’

Assuming that there are six children and Dani is one of them, (11a) is acceptable. The fact that sentence (11b) is odd shows that the distributive reading is less appealing when FQ is used: if the six children picked one stone as a group, it is infelicitous and redundant to claim that Dani, a group member, also picked up a stone.

3.2 Type of quantification:

NP-adjacent Q and FQ impose different readings in terms of sets vs. members of sets and presupposition of existence.

As a universal quantifier, FQ must range over the whole set, each and every member of it. It is as if the quantifier refers to each member of the set, so even in the case of collective predication, each member is counted in the group effort. This is not the case with *kol*:

- (12) a. *kol ha-feyot blondiniyot*
 All the-fairies_{3.FEM.PL} blonde_{3.FEM.PL}
 ‘All the fairies are blonde.’
 $\forall x(Fx \rightarrow Bx)$
- b. *ha-feyot kul-an blondiniyot*
 the-fairies_{3.FEM.PL} all_{3.FEM.PL} blonde_{3.FEM.PL}
 ‘The fairies are all blonde.’
 $\forall x(x_{1\dots n} \text{ is a fairy} \rightarrow Bx)$ ⁷

The Q in (12a) ranges over sets and reflects a relation between the set of fairies and the set of blondes. In particular, it says that the set of fairies is a subset of the set of blondes. The Q in (12b) ranges over members of sets and reflects a relation between individual fairies and the set of blondes.

Kol is also a strong quantifier (Milsark 1977). Strong quantifiers, unlike weak ones, such as numerals and *kama* -‘several’, presuppose existence of a background set. Thus, though *kol* as a logically universal quantifier does not entail existence, in the language it does presuppose existence.

⁷ The notation 1...n indicates individual (after Rullmann 2003).

- (13) a. *kol ha-parot ha-sgulot notnot xalav*
 all the-cows the-purple give milk
 ‘All the purple cows lactate.’
- b. ??? *ha-parot ha-sgulot notnot kul-am xalav*
 the-cows.FEM.PL the-purple.FEM.PL give all3.FEM.PL milk
 ‘The purple cows all lactate.’

Although both Qs presuppose existence, it seems that the presupposition is stronger in the case of FQ. This explains why it quantifies over individuals, as opposed to NP-adjacent Q which may quantify over an empty set. In (13), ‘purple cows’ denotes an empty set. The fact that it can appear with *kol* in (13a), but not with FQ in (13b), supports the claim that FQ presupposes the existence of the set denoted by the predicate it quantifies over. Since there are no purple cows, there are no members for FQ to range over, thus (13b) is odd.⁸

3.3. Scope ambiguities

The interaction of NP-adjacent Q and FQ with modality and/or negation results in scope ambiguities (Dowty and Brodie 1984).

- (14) a. *kol ha-mitxarim yexolim lenatzeax* $\diamond > \forall, \forall > \diamond$
 all the-contestants can win
 ‘All the contestants can win.’
- b. *ha-mitxarim yexolim kul-am lenatzeax* $\diamond > \forall$
 the-contestants.3.MASC.PL can all.3.MASC.PL win
 ‘The contestants can all win.’
- (15) a. *kol ha-mitxarim lo nitzxu* $\neg > \forall, \forall > \neg$
 all the-contestants not won
 ‘All the contestants did not win.’
- b. *ha-mitxarim kul-am lo nitzxu* $\neg > \forall$
 the-contestants.3.MASC.PL all.3.MASC.PL not won
 ‘The contestants did not all win.’

(14a) and (15a) have ambiguous readings such that the quantifier may take wide or narrow scope relative to a modal or negation. In the (b) sentences the

⁸ There are no purple cows in this world. We are not discussing possible worlds. If *possible* is added, sentence (13b) becomes grammatical:

Itaxen se ha-parot ha-sgulot notnot kulan xalav
 possible that the-cows.FEM.PL the-purple.FEM.PL give all3.FEM.PL milk
 ‘It is possible that the purple cows all lactate.’/ ‘Possibly, the purple cows all lactate.’

Q takes only narrow scope, below the modal or negation. Bobaljik (2003) also notes that NP-adjacent Q may undergo scope changing operations (QR, Reconstruction), while FQ is “frozen” in situ in terms of scope.

3.4 Genericity:

Bobaljik (2003) notes that only FQ constructions allow a generic interpretation.⁹

- (16) a. *All lions, tigers and bears are scary.*
 b. *Lions, tigers and bears are all scary.*

(16a) asserts that *every lion* is scary, *every tiger* is scary, and *every bear* is scary, that is, *all* quantifies over [lions, tigers and bears]. (16b) allows this reading as well. However, (16b) can also assert that *lions are generally scary*, and *tigers are generally scary*, and *bears are generally scary*, i.e. the predicate *be scary* is true of all of the terms in the subject NP, but it allows for the individual plural nouns to be interpreted as generics. This generic reading is unavailable in (16a). This is also true for Hebrew:

- (17) a. *kol ha-arayot, ha-nemerim ve-ha-dubim mafxidim*
 all the lions the-tigers and-the-bears scary
 ‘All lions, tigers and bears are scary.’
 b. *arayot, nemerim ve-dubim kulam mafxidim*
 lions tigers and-bears all.3.MASC.PL scary
 ‘Lions, tigers and bears are all scary.’

All these semantic differences lead to the conclusion that NP-adjacent Q and FQ are not semantically identical quantifiers. This, of course, bears on the reading of the sentence in which they appear; constructions with NP-adjacent quantifiers thus differ semantically from constructions with floating quantifiers. These findings lead to the conclusion that it would be inaccurate to posit a derivational relation between the two, based on semantic identity. In other words, contrary to derivational accounts, I maintain that since there is no semantic identity, no syntactic identity follows.

⁹ Although Asudeh (p.c.) believes the genericity effect follows from coordination, citing *Lions are all scary* as not having a generic reading, one might still argue that the floated ‘all’ can quantify over kinds. In *Lions are all scary*, it has no choice but to quantify over individuals, because there is only one kind involved (Kagan, p.c.). However, further elaboration on this matter is out of the scope of this paper.

4. The Analysis

4.1. Constituency

Not everybody agrees that the two constructions should receive a unified account (Bobaljik 2003, Benmamoun 1999, inter alia), based on syntactic evidence such as reconstruction, Case and agreement. Another crucial piece of evidence comes from constituency tests. While one of the main ingredients of derivational accounts is the assumption that the quantifier and its modified NP form a constituent at all levels of representation, and thus both in the floating and the non-floating quantifier versions,¹⁰ application of several additional constituency tests shows that this is not the case in the FQ construction (cf. Spector 2008 for more tests):

(18) Adverb insertion

ha-tapuzim kim'at / vaday kul-am nirkevu
the-oranges almost/certainly all.3.MASC.PL got rotten
'The oranges all almost/certainly got rotten.'

(19) Preposing as a unit

**et ha-yeladim kul-am ani raiti*
ACC the-children all.3.MASC.PL I saw
'The children all I saw.'

(20) Sentence fragment

ha-yeladim ku-lam halxu la-yam
the-children all.3.MASC.PL went to-the-sea

A: *mi halax la-yam?*
Who went to-the-sea?

B: ** ha-yeladim kul-am*
The-children all.3.MASC.PL

(21) Relative Clause/PP modification

a. ** ha-yeladim kulam še ohavim lisxot halxu la-yam*
the-children all.3.MASC.PL that like swim went to-the-sea
'The children all who like swimming went to the sea.'

b. ** ha-yeladim kulam me-ha-gan šeli halxu le-tiyul*
the-children all.3.MASC.PL from-the-kindergarten my went to-trip
'The children all from my kindergarten went for a trip.'

¹⁰ Since one is derived from the other (cf. Sportiche 1988).

(22) VP ellipsis + but not

a. John likes [ice cream], but not [vegetables].

b. * *Dani axal et ha-tapuzim kul-am aval lo et ha-bananot*
Dani ate ACC the-oranges all.3.MASCPL but not ACC the-bananas
rub-an

most.3.FEM.PL

Lit: Dani ate the oranges all but not the bananas most

‘Dani ate all the oranges but not most the bananas.’

4.2. The proposal

I propose to analyze the FQ constructions in Hebrew¹¹ ((2b,c), repeated in (23)), as instances of Topicalization. When the Q appears post verbally in (23b), it involves Triggered Inversion:

(23) a. [ha-yeladim-**TOPIC**], [kulam-**SUBJ** halxu la-yam]
the-children.MASC.PL **all**3.MASC.PL went to-the-sea
‘The children went all to the sea.’

b. [ha-yeladim-**TOPIC**], [halxu kulam-**SUBJ** la-yam]
the-children.MASC.PL went **all**3.MASC.PL to-the-sea
‘The children went all to the sea.’

I assume that the NP *ha-yeladim* has an overlay discourse function TOPIC, while the real syntactic subject is *kul* + incorporated pronoun which agrees with the topic in number and gender. Aside from subjecthood and topichood tests which will be provided in the next section to support this analysis, FQ constructions of the above type¹² exhibit a unique intonational pattern, where there is a “comma”-break after *ha-yeladim*, separating it from the rest of the clause.

According to the Extended Coherence Condition (ECC) in LFG, overlay functions must be linked or associated with arguments. In (23) ECC is observed by associating the topic with the incorporated pronoun on the Q, which functions as a subject. The incorporated pronoun on the quantifier is anaphorically bound by the TOPIC and the identification takes place via co-indexation. This is in line with Bresnan and Mchombo (1987): “A topic is bound whenever it is functionally identified with, or anaphorically binds a bound function”. This enables us to explain the obligatoriness of the pronoun on the floating Q.

¹¹ Cf. Falk (2006a): “...Quantifier Float is not a uniform syntactic construction crosslinguistically”.

¹² The present paper only examines FQs in subject position.

The alternation in word order in (23a,b) is accounted for by Triggered Inversion (cf. next section). And finally, Topicalization makes the FQ construction discourse-marked in Hebrew, which is normally a non-topic prominent language.

4.3. Basic assumptions

4.3.1. Topichood of *ha-yeladim*

Various definitions of topic exist in the literature. In this section I review a few of them to motivate the proposed Topicalization analysis.

For Chafe (1976), “the topic sets a spatial, temporal or individual framework within which the main predication holds”. According to Dik (1978), “the topic presents the entity 'about' which the predication predicates something in the given setting”. And indeed, *halxu kulam la-yam* predicates about *ha-yeladim*, by saying that 'as for the children – they all went to the sea'. Furthermore, topic represents old or given information (Chafe 1976). *Ha-yeladim* in (23) is the old information, while *kulam* is new. The new information presented in this sentence is that it is all children and not just some that went to the sea, while the set of children is assumed to be known or has already been identified in the discourse, in line with Bresnan and Mchombo (1987), who maintain that “the topic designates what is under discussion, whether previously mentioned or assumed in discourse”.

In addition, topics are usually definite and clause initial (Lambrecht 1981), and this is the case here. Notice that *ha-yeladim* in this construction cannot be indefinite:

- (24) * *yeladim halxu kulam la-yam*
 children.3.MASC.PL went all.3.MASC.PL to-the-sea.
 ‘children went all to the sea.’

Another piece of evidence is adopted from Bresnan (2001) for Chichewa. Bresnan claims that topics cannot be questioned, and subsequently, be focused. The common view is that in questions, the *wh*-word bears the FOCUS function. From this it follows that one may ask about the subject ((25)), but not about the topic ((26)):

- (25) a. [*ha-yeladim* **SUBJ**] *halxu la-yam*
 The-children went to-the-sea
- b. [*mi* **FOCUS**] *ata amarta še ___ halax la-yam?*
 who you said that ___ went to-the-sea
 ‘Who did you say that ___ went to the sea?’

- (26) a. *[ha-yeladim TOPIC] halxu kul-am la-yam*
 The-children went all.3.MASC.PL to-the-sea
- b. * *[mi FOC/TOP] ata amarta še __ halxu kul-am la-yam?*
 who you said that went all.3.MASC.PL to-the-sea
 ‘Who did you say that __all went to the sea?’

The ungrammaticality of (26b) follows from the fact that something cannot at the same time be both TOPIC (old information) and FOCUS (new information): it results in function clash. This also shows that *ha-yeladim* is not the subject of (23). Since it refers to the same entity as *kul-am*, the only option left for *ha-yeladim* is to be a topic.

4.3.2. Subjecthood of *kul-am*

Trying to convincingly show that *kul-am* is a subject is not easy. All the usual subject properties discussed in Falk (2006) distinguish primarily between subjects and objects and are often applicable to both subjects and topics, since cross-linguistically, the subject is usually the discourse topic. Therefore, the argumentation and the evidence have no choice but to be negative, i.e. since we established that *ha-yeladim* is not a subject, but a topic, the only other NP that can be the subject is *kul-am*. This hypothesis is supported by the following:

The governable grammatical functions can be divided into *semantically restricted* and *semantically unrestricted* functions (Bresnan 1982). The claim that *ku-lam* functions as a subject in this construction is supported by Fillmore (1986), who argues that “semantically unrestricted functions like SUBJ and OBJ can be associated with any semantic role”. And indeed, in the examples below, *kul-am* exhibits a wide range of semantic roles:

- (27) a. *Ha-yeladim halxu kulam la-yam*
 the-children went all.3.MASC.PL to-the-sea **Agent**
 ‘The children went all to the sea.’
- b. *Ha-yeladim kiblu kulam matanot*
 the-children received all.3.MASC.PL presents **Benefactive**
 ‘The children all received presents’.
- c. *Ha-yeladim ohavim kulam et ha-mora*
 the-children love all.3.MASC.PL ACC the-teacher **Experiencer**
 ‘The children all love the teacher.’

Although semantically unrestricted functions can be either OBJ or SUBJ, it is clear that in this construction, *kul-am* is definitely not an OBJ, since e.g in

(27a) it is not selected by the verb, given that *go* is intransitive. This leaves *kul-am* with only one possible grammatical function, namely SUBJ.

4.3.3. Identification of the topic

According to the Extended Coherence Condition, overlay functions must be identified with arguments or adjuncts. In FQ constructions, the agreement features of the incorporated pronoun on the subject are identified with the same features on the topic. Thus, the topic is bound by the core function SUBJ. The proposed analysis enables us to explain the ungrammaticality of (28a,b):

- (28) a. **ha-yeladim* *halxu* *kul-an* *la-yam*
 the-child.PL.MASC went.3.PL. all-3.PL.FEM to-the-sea
 ‘The children went all(fem.) to the sea.’
- b. **ha-yeladim* *halxu* *kol la-yam*
 the-child.PL.MASC went.3.PL. all to-the-sea
 ‘The children went all(fem.) to the sea.’

The incorporated pronoun on Q in (28a) is 3.PERS.PL.FEM *-an*, and it needs to provide identification for the topic by the Extended Coherence Condition: the agreement features that sit on *-an* need to be co-referential with the same features on the topic. In (28a) they are not, thus the sentence is ungrammatical. In (28b), the FQ lacks the incorporated pronoun, thus leaving the topic unidentified with the subject.

At the same time, the topic serves as the antecedent for the anaphorically bound incorporated pronoun. Bresnan (2001) argues that “a pronominal inflection will be in complementary distribution with a headed syntactic phrase of the same function. Independent (headed) NPs that co-occur with these pronominal inflections must then have non-argument functions, like the dislocated topics. The incorporated pronoun will agree with such nominals anaphorically, in just the way a pronoun agrees with its antecedent... When dislocated topics are anaphorically linked to a pronominal element within the clause, what is identified is ...the referential index of the two functions”. Thus, *ha-yeladim* (the topic) binds the pronoun *-an* on the Q (the subject). This way, the topic is identified with the pronoun, which is anaphorically bound by it, in the sense of Dalrymple (1993).¹³

¹³ The formal mechanism of anaphoric binding and functional uncertainty is thoroughly discussed in Dalrymple (1993). For our purposes, a simple co-indexation of the topic’s f-structure and subject’s f-structure is sufficient.

4.3.4. Triggered Inversion

Triggered Inversion in Hebrew has been discussed by Borer (1995), Shlonsky and Doron (1992), and Shlonsky (1997). In LFG it has been discussed by Falk (2004) for the following:

- (29) a. *beyalduto, Eli patar targilei matematika*
 in childhood.3.SG.MASC, Eli solved exercises mathematics
 ‘In his childhood, Eli used to solve exercises in mathematics.’
 b. *beyalduto, patar Eli targilei matematika*
 in childhood.3.SG.MASC, solved Eli exercises mathematics
 ‘In his childhood, Eli used to solve exercises in mathematics.’

(29a) and (29b) are free variants, when the sole difference between them is the position of the verb and the subject. While (29a) has the regular SVO order, in the presence of a trigger, the order can be manifested as VSO as in (29b). According to Shlonsky (1997), “in Triggered Inversion, the verb moves... in the presence of a non subject initial elements”. For Falk (2004), a trigger is “an element with discourse prominence [that] can be placed at the beginning of a Hebrew clause”. Thus, a non subject initial element with discourse prominence in FQ constructions is the topic *ha-yeladim*.

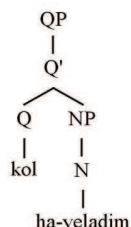
Topicalized constructions can be manifested as either SV or VS ((29a,b)), namely, the inversion is optional. In the same fashion Floating Quantifier constructions can be either SV or VS ((23a,b)). This accounts for the preverbal and post-verbal site of the quantifier ‘float’, since triggered subject-verb inversion is optional.

4.3.5 Contrasting NP-adjacent Q with FQ

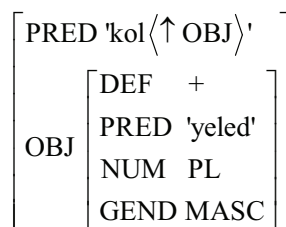
I. *Lexical Entry of NP-adjacent Q*

kol Q: PRED 'kol((↑OBJ))'
 (↑OBJ NUM)_{=c} PL
 (↑OBJ DEF)_{=c} +

C-Structure of NP-adjacent Q



F-Structure of NP-adjacent Q



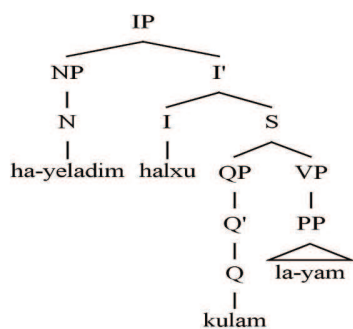
Despite the convention that the standard categories in LFG which take $(\uparrow \text{OBJ})$ are prepositions and verbs, I believe that since Q functions as the head of QP and takes a complement, this should be expressed in the f-structure as well by allowing Q to take $(\uparrow \text{OBJ})$. For supporting argumentation see Fassi Fehri (1988) for an analysis of Qs taking the complement NP as object in Arabic, and see Maling (1983) for kinds of adjectives that take OBJs.

II. *Lexical entry of FQ*

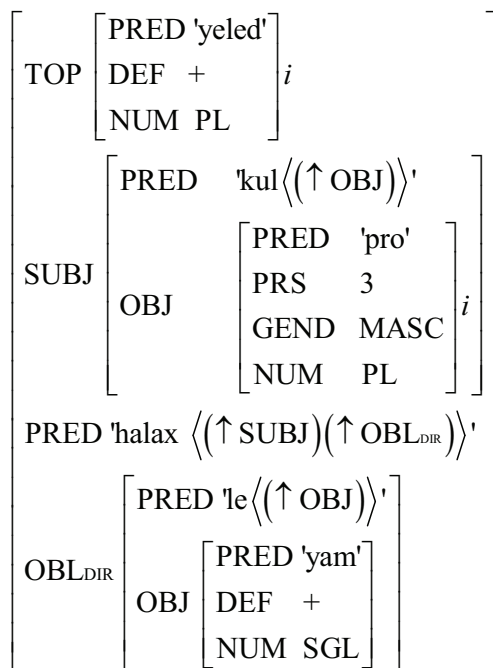
$kul[_]$ Q: PRED 'kul' $\langle \langle \uparrow \text{OBJ} \rangle \rangle'$
 $(\uparrow \text{OBJ PRED}) = \text{'PRO'}$

The notation $kul[_]$ stands for underspecified incorporated pronoun's features.

C-Structure of FQ:



F-Structure of FQ:



The anaphoric binding is indicated by the co-indexation of TOPs and SUBJs f-structures.

5. Conclusion

This paper presents a new LFG approach to the Floating Quantifier phenomenon in Hebrew by showing that there is no actual floating involved, but these are rather two different syntactic constructions. The proposed analysis accounts both for the markedness of the FQ construction and for the obligatory inflection of the quantifier in the "floated" preverbal and postverbal positions. The different position of Q-float site is explained by different positions of the verb and the subject via Triggered Inversion. When the uninflected Q appears in these positions (i.e., when the Q does not contain an incorporated pronoun whose function is to provide an anaphoric identification for the topic), the TOPIC function remains unidentified with an argument function (SUBJ), thus violating the Extended Coherence Principle, rendering these sentences ungrammatical. The markedness of FQ construction is explained by appealing to Topicalization. Topicalized constructions in a non-topic prominent language like Hebrew would always be discourse-marked.

Several directions are to be pursued in follow-up work, and which were not taken into account in the present work. First, prosodic aspects of FQ constructions at the syntax-phonology interface can shed light on the correctness of the proposed analysis. Second, other floated positions were not examined in this work, e.g. the right periphery of VP in object position ((30)) and the sentence-final constructions (cf. Hurst 2007), such as (31):

- (30) *axalti et ha-tapuzim kul-am*
ate.I ACC the-oranges all.3.MASC.PL
'I ate the oranges all = I ate all the oranges'
- (31) *ha-yeladim halxu la-yam kul-am*
the-children.MASC.PL went to-the-sea all.3.MASC.PL
'The children went to the sea all (of them).'

Another possible direction for further work might be to examine other Topicalization constructions in Hebrew. This would provide a broader view on discourse-marking strategies in Hebrew and would locate the FQ constructions in a proper and wider context.

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