

# Post-syntactic agreement?\*

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## Abstract

This paper looks at cases of mismatch in subject-verb number agreement. Specifically, we focus on British English, Turkish and Classical Greek. In these languages, it is possible to find either a plural or singular subject which consistently triggers the opposite number on the verb. To resolve these cases, a covert partitive projection is proposed that is quite similar in spirit to an earlier proposal which has been dubbed the *Hidden Partitives Hypothesis* (Jackendoff, 1968; Selkirk, 1977; Bresnan, 1973). We propose a parameter which allows this projection over plural DPs in languages like Turkish, and the feature [Collective] for the cases of British English and Classical Greek.

## 1 Introduction

In this paper, we look at agreement relations across categories: Noun-Adjective, Noun-Determiner and Subject-Verb agreement.

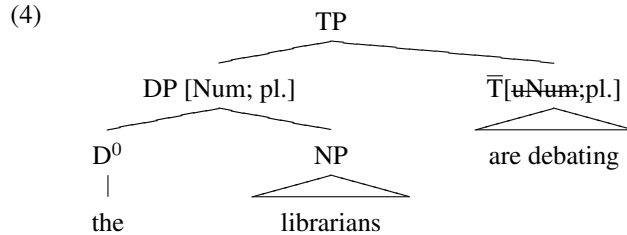
- (1) **Noun-Determiner agreement**  
[<sub>sg.</sub> A][<sub>sg.</sub> boy]
- (2) **Noun-Determiner-Adjective agreement**  
[<sub>fem.</sub> La][<sub>fem.</sub> seule][<sub>fem.</sub> fille]
- (3) **Subject-Verb agreement**  
[<sub>pl.</sub> The][<sub>pl.</sub> boys][<sub>pl.</sub> sing]

*The standard theory* about such agreement relations is that one of the categories involved carries interpretable and valued  $\Phi$ -features, and that the other category inherits these features by virtue of agreement. Technically, the proposal is that the interpretable and valued  $\Phi$ -features on one of the categories must match the uninterpretable  $\Phi$ -features of the other category involved. If matching/agreement obtains, then a checking relation is established and the uninterpretable features get valued as well as deleted or erased. In this paper, we focus

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on the Subject-Verb number agreement relation. The tree in (4) exemplifies this relation for a simple English sentence.



However, several cases are found cross-linguistically which appear problematic for this view. Among these are the cases of British English collective nouns, Classical Greek neuters and Turkish nouns.

### British English

- (5) [<sub>sg.</sub> A] [<sub>sg.</sub> committee] [<sub>pl.</sub> were] holding a meeting in here.  
 (6) [<sub>sg.</sub> The] [<sub>sg.</sub> enemy] [<sub>pl.</sub> were] showing up in groups of three or four to turn in their weapons.  
 (7) [<sub>sg.</sub> The] [<sub>sg.</sub> government] [<sub>pl.</sub> have] not announced a new policy.

The well-known British English collective nouns, henceforth BCN, trigger plural agreement on the verb when found in the subject position, that is, even when these nouns surface as singular. According to the standard theory of agreement, the verb should also surface as singular.

**Classical Greek**, henceforth CG, has a set of nouns, usually referred to as neuters, which trigger singular agreement on the verb they agree with, whenever they are marked for plural. Such a mismatch between the subject and the verb is unaccounted for in the standard theory.

- (8) [<sub>pl.</sub> τᾱ] [<sub>pl.</sub> τέκν - ᾱ] [<sub>sg.</sub> γράφ - εἶ] τᾱ γράμματα  
 the children writes the letters  
 ‘The children write the letters.’  
 (9) [<sub>pl.</sub> τᾱ] [<sub>pl.</sub> ζῶ - ᾱ] [<sub>sg.</sub> τρέκ - εἶ]  
 the animals runs  
 ‘The animals run.’

**Turkish Nouns**, henceforth TN, are divided in two sets that behave differently with regards to subject-verb agreement. Animate nouns trigger singular agreement on the verb when they bear singular morphology, as expected, but trigger either singular or plural agreement on the verb whenever they surface with plural morphology. Inanimate nouns consistently trigger singular agreement on the verb when bearing plural number.

- (10) [<sub>sg.</sub> çocuk] ev-e [<sub>sg.</sub> gidiyor].  
 child home-DIR is going  
 ‘A child is going home.’
- (11) \* [<sub>sg.</sub> çocuk] ev-e [<sub>pl.</sub> gidiyor-lar].  
 child home-DIR are going  
 \*‘A child are going home.’
- (12) [<sub>pl.</sub> çocuk-lar] ev-e [<sub>sg.</sub> gidiyor].  
 child-PL. home-DIR is going  
 ‘The children are going home.’
- (13) [<sub>pl.</sub> çocuk-lar] ev-e [<sub>pl.</sub> gidiyor-lar].  
 child-PL. home-DIR are going  
 ‘The children are going home.’
- (14) [<sub>pl.</sub> bardak-lar] [<sub>sg.</sub> düşüyor].  
 glass-PL. is falling  
 ‘The glasses are falling.’

Furthermore, both the noun and the verb can surface with singular morphology whenever the subject-noun is modified by a numeral; this is probably due to a partitive interpretation.

- (15) [<sub>pl.</sub> İki] [<sub>sg.</sub> çocuk] ev-e [<sub>sg.</sub> gidiyor].  
 two child home-DIR is going  
 ‘Two children are going home.’

In these examples the mismatch between the verb and the subject it agrees with can go both ways, while in the case of TN and CG, the subject is in the plural and triggers singular agreement with the verb. In the case of BCN, the subject surfaces with singular morphology whereas the verb it agrees with bears a plural feature.

Notice that in the case of BCN and CG, there is only a restricted set of nouns that trigger this surprising, yet not unprincipled, agreement. In the case of TN, all nouns may enter into this mismatch relationship when found in the plural, with a subset of nouns, the inanimates, that triggers it automatically. Hence, the following example is ungrammatical in Turkish.

- (16) \* [<sub>pl.</sub> bardak-lar] [<sub>pl.</sub> düşüyor-lar].  
 \*glass-PL. are falling  
 ‘The glasses are falling.’

Furthermore, the presence or absence of a determiner does not seem to bear on the issue. Although the cases of BCN and CG both involve determiners, bare nouns in Turkish are subject to this agreement relationship as well. In fact, focusing on the cases of BCN and CG, they seem to mirror each other. In both cases, a specific set

of nouns trigger the mismatch agreement relationship: BCNs trigger plural on the verb whenever found in the singular (or plural), and CG neuters trigger singular on the verb whenever found plural (or singular). The inanimate nouns in Turkish also fall in the same class as the CG neuters in this regard.

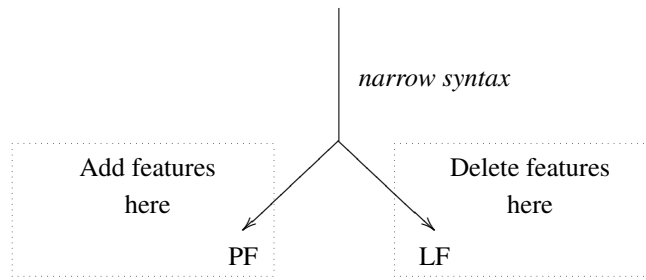
## 2 Other Analyses

Other approaches to agreement have suggested that Subject-Verb agreement is post-syntactic rather than syntactic. Bobaljik (2006) proposes that agreement takes place at PF after m-cases have been assigned. Bobaljik phrases his proposal as follows:

- (17) The finite verb agrees with the highest accessible NP in its domain. (p.3)

The notion of accessibility is defined in terms of case: only arguments bearing nominative case can enter into an agreement relationship with the verb. It is the dependence of agreement on case that leads Bobaljik to suggest that agreement takes place at PF, since case assignment also occurs at PF in the adopted framework. Thus, uninterpretable features are not deleted at LF as in the standard minimalist view, but rather are added at PF, as shown in (18).

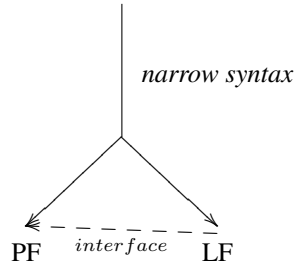
- (18)



However, this approach cannot solve the problematic cases pointed out above. Both Turkish and Classical Greek have overt case morphology, and the subjects in the examples above all bear nominative case. Thus, this approach to agreement alone cannot solve our dilemma. Nonetheless, the analysis we provide below could easily be made compatible with Bobaljik's proposal as for the location of agreement of  $\Phi$ -features in the architecture.

Another possible approach to post-syntactic agreement could involve operations performed by LF on the structure before it is sent to PF. Obviously this approach involves the introduction of a LF-PF interface, and thus an alteration to the Y-model as assumed in the Minimalist framework.

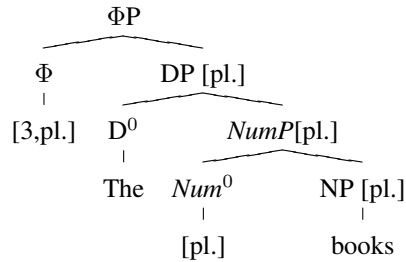
(19)



The diagram in (19) presents a basic possible alteration to the Y-model. Several proposals have been made which involve architectures different from the Y-model (Jackendoff, 2002; Bresnan, 1982, 2001; Sadock, 1991; Van Valin and LaPolla, 1997). The architectures involved by these other proposals are often more complicated (especially Jackendoff (2002)). The trade-off of such alternative architectures is in the tractability of the derivation algorithm: even though these structures might solve some problems, the overall complexity of the grammar is increased, and with it the number of considerations that must be taken into account in the derivation of simple sentences. This is not to say that modification of the standard Y-model is uncalled for, but rather that the proposed alternatives are overly complicated; and we do not believe that our problematic cases require such extended analyses.<sup>1</sup>

Another analysis is that of Sauerland (2003). Sauerland's proposal is twofold, involving both a syntactic and a semantic component. The syntactic component involves the addition of a  $\Phi$ P. Only the head of this phrase bears interpretable features and the features of the NP heads are assumed to be uninterpretable and checked by the feature of the  $\Phi$ -head (i.e. there is a  $\Phi$ P for every DP). The proposed structure is presented in (20).

(20)



As for the semantic component of the proposal, Sauerland suggests that the interpretable features found in  $\Phi$  must receive a presuppositional interpretation. The features found in  $\Phi$  are licensed by the semantics. The uninterpretable features (of the NP or VP) are licensed/checked by the features found in  $\Phi$ . The presupposition expressed by the [sg.] is assumed to be the following: “my sister

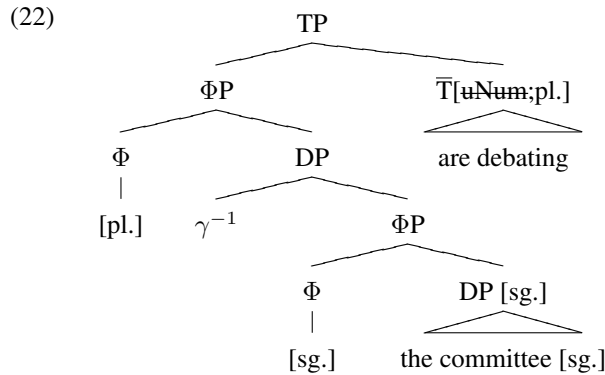
<sup>1</sup>Note that agreement mismatch has motivated semantic approaches to agreement in the past, Dowty and Jacobson (1988) is a notable case.

denotes an atom or a mass”. The [pl.] feature is not constrained by any presupposition. However, the presuppositions are constrained by the (pragmatic) maxim *Maximize Presupposition* argued for by Heim (1991), and shown in (21).

- (21) Use the more specific agreement feature possible whose presupposition is satisfied.

This maxim forces the [sg.] whenever it is required by the context. In other words, it blocks plural agreement whenever the [sg.] presupposition applies.

In another related paper, Sauerland proposes to deal with puzzling cases like that of collective nouns in British English by the recursion of the  $\Phi$ P as shown in (22).



Here the  $\gamma^{-1}$  is an operator which is assumed to have the following effect.

- (23)  $\gamma^{-1}$  : The group  $k$  (designed by the collective noun)  $\Rightarrow$  the plurality  $a \oplus b$

Even though we believe this proposal has some problems, it is nonetheless quite insightful. As will become clear in the next section, our analysis resembles that of Sauerland in many ways and we are indebted to him in this regard.

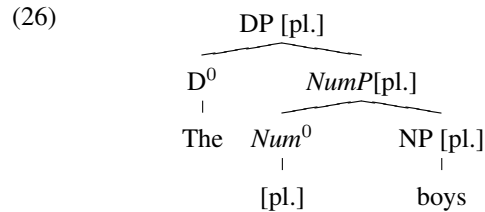
### 3 Our Analysis

First, it is important to notice that number agreement is consistent within the DP; that is, no cases of mismatch are found between the noun and the determiner (e.g. DP internal). This can be seen in BE and CG, as the following examples illustrate.

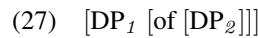
- (24) [[<sub>sg.</sub> A] [<sub>sg.</sub> committee]] [<sub>pl.</sub> were] holding a meeting in here.

- (25) [[<sub>pl.</sub> τα] [<sub>pl.</sub> τέκνα - α]] [<sub>sg.</sub> γράφ - ει] τα γράμματα  
 the children writes the letters  
 ‘The children write the letters.’

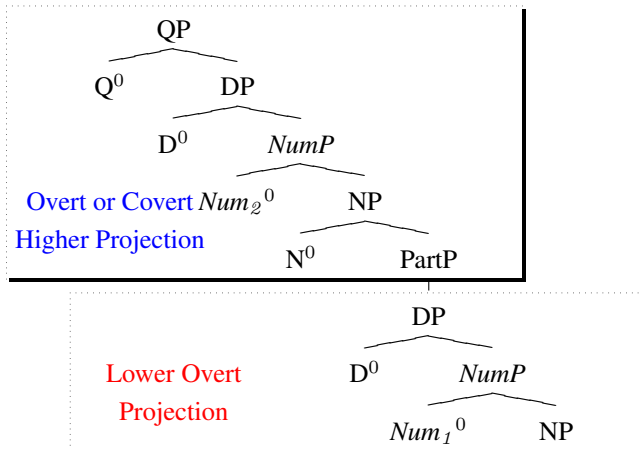
All functional or lexical categories bearing some  $\Phi$ -feature will agree with the other such categories under that DP. We adopt an analysis where the number feature is generated in NumP, and all the other categories (N, A, D) get it from the Num-head by syntactic agreement, as in (26).



Given this analysis, how is it possible that the verb and its subject are valued differently for number, as seen in our problematic cases? We propose that these DPs have a partitive structure with two DP components, and that it is the higher DP that enters a matching/agreeing relation with the verb.



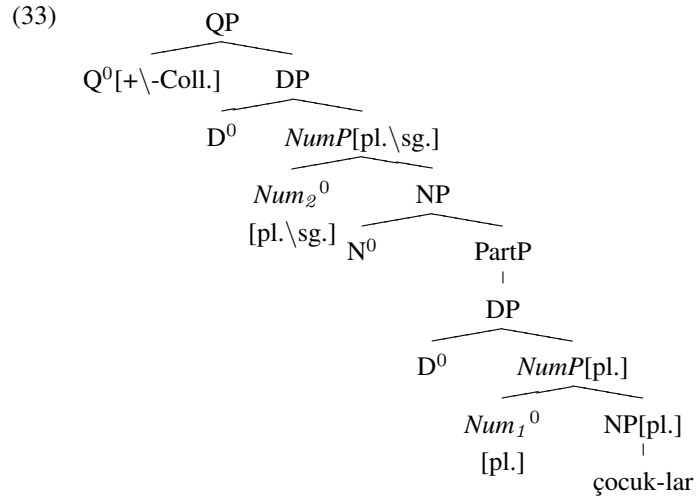
Both DPs have the same structure i.e. both dominate a NP and a NumP except that the higher DP may contain a different Num feature than the lower. The value of the Num feature in the higher DP (singular or plural) is selected by a silent partitive Q that dominates the higher DP. The proposed structure is that of (28).



We assume an empty  $N^0$  in the higher DP, a proposal advocated by Jackendoff (1977). Its presence is necessary to us, since we crucially need a NumP to bear the feature that will enter into an agreement relation with the verb. Following standard assumptions, this NumP can only be present as a functional projection on the noun, and thus the presence of the empty noun is required to trigger it.



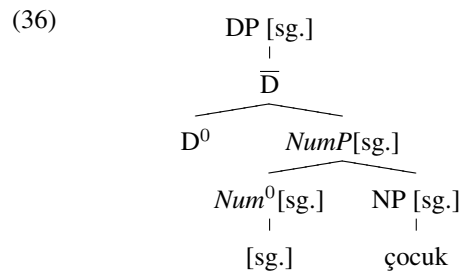




Coming back to the sentence labeled (10) above, one thing is important to notice. Whenever a noun is singular in Turkish, no variation is allowed in the agreement relation between the subject and the verb. Thus, the sentence (34) below is grammatical, while (35) is not.

- (34) [<sub>sg.</sub> çocuk] ev-e [<sub>sg.</sub> gidiyor].  
 child home-DIR is going  
 ‘A child is going home’
- (35) \* [<sub>sg.</sub> çocuk] ev-e [<sub>pl.</sub> gidiyor-lar].  
 child home-DIR are going  
 \*‘A child are going home.’

Obviously, if the higher DP and QP projections were present in all DPs in Turkish, we would predict (35) to be grammatical, as nothing would prevent the feature [Coll.] to vary in its value. However, (35) is *not* grammatical, and we thus propose that the covert QP projection can only be present whenever the *Num*-head of the lower DP bears a [pl.] feature. Hence, the DP in (34) has the following structure.



We propose that languages can vary in whether they allow a ‘hidden partitive’ to select a plural DP. Turkish allows such a structure for its animate nouns; the New York dialect of English does not. The fact that only [pl.] DPs can trigger this sort of *syntactic reinterpretation* of their value seems to bear directly on the semantic interpretation of the arguments. A group, an aggregate, can be perceived as plural when the focus is on its atoms, or singular whenever the focus is on the group itself, as an entity, without any information about its atoms. Hence, the singular noun in Turkish, being an atom itself, and impossible to break down into further parts, does not lend itself to syntactic reinterpretation. Here, we use the notion syntactic reinterpretation in order to avoid confusion in terms: this reinterpretation is of a purely mechanical, or syntactic, nature and varies on a binary basis (e.g. in regards to the [Coll.] feature). Although we do believe that such a reinterpretation will bear on the operations and interpretation at LF, we leave the exploration of this for later work.

This account of Turkish holds only for the set of animate nouns. It is clear that more has to be said with regards to the inanimate nouns. We return to them below in 3.3, when discussing the CG neuters.

Having just claimed above that singular nouns are not amenable to a syntactic reinterpretation of their plural value, how can we then get the facts of BCN agreement?

### 3.2 **British Collective Nouns**

British Collective nouns (BCN) are nouns which denote a group of members. For example, ‘family’ or ‘government’ denote at once a group and the members within it. These nouns can appear in the singular, yet they may trigger plural agreement with the verb. (They can also be plural, in which case there is nothing out of the ordinary.)

(37) The family quarrel among themselves.

(38) The government are debating the issue.

In (37) and (38), despite the fact that both the noun and the determiner are singular, the verb is in the plural. Since specific lexical items (collective nouns) trigger agreement mismatch in British English, we propose a syntactic feature which will account for this difference: we assume that BCNs have the feature [+Coll.]. The intuitive reason for this is that when the feature [+Coll.] is present, the group is *syntactically interpreted* as a plurality of members for verbal agreement. Thus the number feature [pl.] must be present in the tree, in order for it to consistently trigger a plural verb but not a plural determiner.

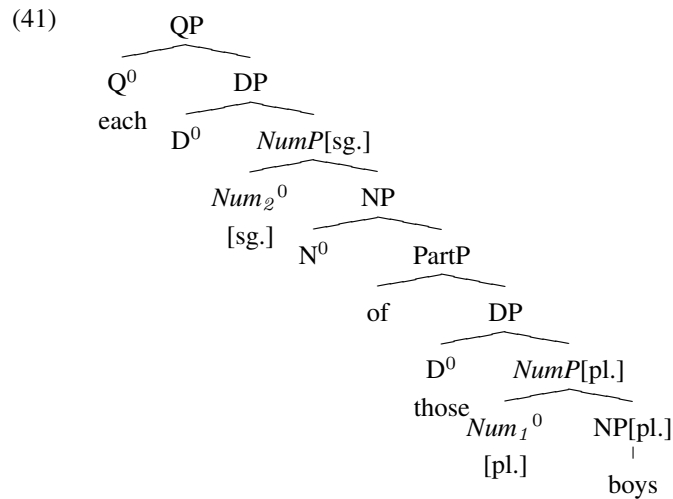
In the usual cases, a plural noun has a plural determiner and triggers plural agreement on the verb; thus there is no mismatch in number agreement. However, when nouns in a partitive construction are contained by a QP that is headed by an overt Q their number agreement with the verb can be mismatched, as in the following case:

- (39) Each of those boys eats his lunch.

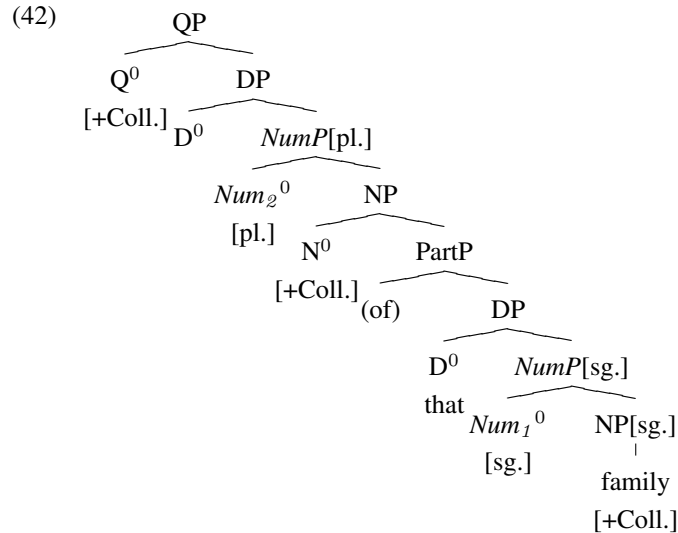
In the cases of this sort, the Q is overt, and triggers a predictable number agreement with the verb. Whereas ‘each’ will be followed by a singular verb, ‘all’ is followed by a plural verb.

- (40) All of the girls sing loudly.

These examples illustrate that the *NumP* sister of Q has a value predictable from this Q and not the DP below it. It is this latter DP which triggers number agreement with the verb. The *Num* in the lower DP is independent in value from that of the higher DP, and triggers number agreement within the lower DP (on all the relevant categories). Hence, these two *Num* need not have the same value, which accounts for a plural noun preceding a singular verb agreement in a partitive construction dominated by a quantifier. In (41) we provide a tree representation for a DP dominated by the quantifier ‘each’.



In much the same way, if a Noun has an inherent [+Coll.] feature, it projects a QP, with the important difference that the Q-head is covert. The projection looks as follows:



The *NumP* in the lower DP contains the plural feature which spreads across this latter DP. Thus ‘family’ is singular, as is its determiner. In the case of a regular noun (non-collective), there is no QP projection, and the information found in the *NumP* is that which is used for agreement with the verb. For BCN, the feature [+Coll.] triggers the projection of the QP, and the feature gets copied to Q (the feature [Coll.] is identical in the upper N projection and through it is inherited by the Q-head). The QP is a silent partitive whose only manifestation in the utterance is the change in number agreement. When Q has the feature [+Coll.], it selects a plural *Num*<sup>0</sup>, which in turn spreads in the DP and is used for the agreement with the verb. Thus the lower *NumP* is used for agreement within the lower DP, and the higher *NumP*’s feature is responsible for agreement with the verb. Since only specific lexical items have the feature, in this case BCNs, most nouns in British English do not trigger the projection.

The feature is copied into Q which is indirectly responsible for the plural agreement on the verb, a mirror image of the way the quantifier ‘each’ can be used to change plural agreement to singular. To summarize, the lexical item ‘each’ has the feature [-Coll.] and the lexical item ‘all’ has the feature [+Coll.], which consistently triggers [sg.] or [pl.] in their sister *Num* as in (43) and (44).

(43) ?Each boy of the boys loves his mother.

(44) ?All the boys of the boys love their mother.

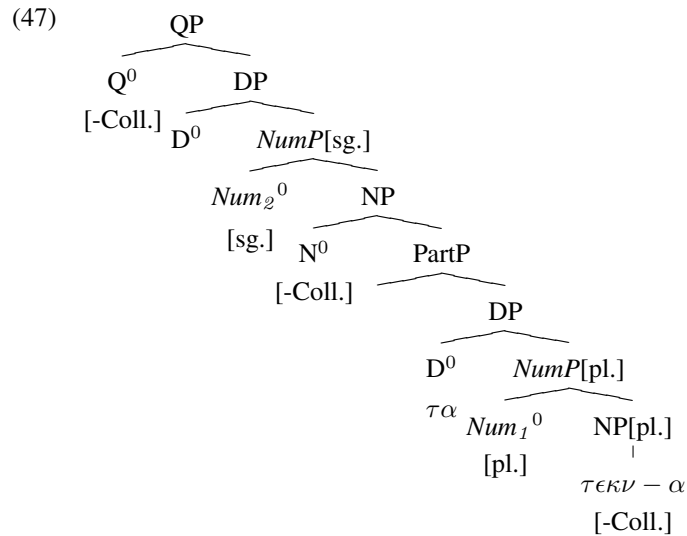
Here we have included overt nouns (and a determiner in the case of (44)) in the higher DPs, which can consist of further support for the analysis. We believe the uncertainty of native speakers with regards to these sentences emerges from pragmatic effects. More specifically, it is easily explained by Grice’s maxim of quantity.

### 3.3 Classical Greek Neuters

As mentioned above, the set of CG neuter nouns involved in agreement mismatch seems to mirror the collective nouns of British English. Some of the relevant examples are reproduced here under (45) and (46), with the proposed bracketing around the subject.

- (45)  $[_{QP} \text{-Coll.}]_{[DP} [_{NumP} \text{sg.}]_{[DP} \tau\alpha \tau\epsilon\kappa\nu - \alpha_{pl.}]]] [_{sg.} \gamma\rho\alpha\phi - \epsilon\iota] \tau\alpha$   
 the children writes the  
 γραμματα  
 letters  
 ‘The children write the letters.’
- (46)  $[_{QP} \text{-Coll.}]_{[DP} [_{NumP} \text{sg.}]_{[DP} \tau\alpha \zeta\omega - \alpha_{pl.}]]] [_{sg.} \tau\rho\epsilon\kappa - \epsilon\iota]$   
 the animals runs  
 ‘The animals run.’

Thus we suggest that these nouns have the lexical feature [-Coll.]. As in the case of British English, this feature is responsible for the projection of the higher DP dominated by a QP. The feature is also shared by both the lower and the higher N. The covert Q-head further inherits this feature from the higher N, to then select a [sg.] feature on the uppermost Num-head. The singular feature is then inherited by the verb through agreement, following the standard theory. The tree structure for a plural neuter noun’s entire projection is provided under (47).



Following our proposal, CG neuters mirror the BCNs because both bear the same lexical feature set on opposite values. Also, unlike Turkish animates, CG does not project a covert QP whenever the DP bears a [pl.] feature. However, the Turkish inanimate nouns behave exactly like the CG neuters, and we propose

that, just like the latter, they bear the feature [-Coll.] which triggers the projection of the very same structure as illustrated in (48).

- (48)  $[_{QP} \text{-Coll.} [_{DP} [_{NumP} \text{sg.} [_{DP} \text{bardak-lar pl.}]]]]_{[sg.]} \text{duşuyor}$   
 glass-PL. is falling  
 ‘The glasses are falling.’

Hence, Turkish is a language that has both a set of nouns bearing the [Coll.] feature and also allows for the covert partitive projection over a plural DP. In the present work, we do not provide any examples of languages that allows for the covert projection without having a set of nouns that bear the [Coll.] feature. Nothing in our proposal prevents such a possibility, and the finding of such a language could constitute of further support for the analysis.

### 3.4 Normal Cases

How can the normal cases, those where no subject-verb agreement mismatch (several varieties of English, e.g. American English), be obtained following our proposal? As mentioned in section 3.1, we suggest that languages differ as to whether the higher layer is projected or not in the presence of a lower plural DP. This in turn boils down to whether a certain language has covert Qs or not. Languages like American English do not have covert Qs, so the upper layer is not projected unless an overt Q is present. If the Q is overt, both possibilities obtain, as expected.

- (49) All N (of) the boys are singing. (ALL = a [+Coll.] Q)  
 (50) Each of the boys is singing. (EACH = a [-Coll.] Q)  
 (51) Every boy is singing.  
 (52) Every one of the boys is singing. (EVERY = a [-Coll.] Q)

The projection of the covert Q can also be triggered by the presence of the lexical [+/- Coll.] feature. We assume that this feature is present for certain sets of nouns in some languages, as we proposed for BCN, CG neuters and Turkish inanimate nouns. In the normal cases, the feature is absent altogether, not triggering any higher projection which in turn could potentially involve some agreement mismatch.

## 4 Summary and Conclusion

We have proposed that, in some languages, a covert QP can be projected over a DP in certain conditions. First, whenever the DP over which the QP is projected bears a [pl.]  $\Phi$ -feature. We assume this to be the case for Turkish animate nouns, where the value of the uppermost projection which agrees with the verb can freely vary. Second, we proposed a lexical feature borne by nouns which also triggers the QP projection whenever it is present within a DP. This [Coll.] feature also selects the

value of the higher *Num*-head: whenever the feature is [+Coll.], the *Num*-head is [pl.]; whenever it is [-Coll.], the *Num*-head is [sg.]. We suggested this feature to be present in both its values in Classical Greek, Turkish inanimates and British English, thus making the languages' behaviour as mirroring each other in some respects.

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