

Article drop in headlines: failure of CP-level Agree*

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1 Introduction

This paper considers the distribution of the phenomenon of dropped articles in a particular register of English, most clearly exemplified by newspaper headlines.

(1) \emptyset Man bites \emptyset dog

This process of article drop is not entirely free, as noted by Mårdh 1980, Stowell 1991 and Weir 2009; the headline in (2) is not grammatical, for example.

(2) *A man bites \emptyset dog

Indefinite article-less DPs appear to have particular semantic properties which are not shared by article-ful DPs. In particular, article-less DPs appear to be obligatorily wide-scope. Other quantifiers in the

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sentence cannot scopally interact with an article-less DP, while they can interact with an article-ful DP (by taking scope over it, for example). This contrast is illustrated in (3).

- (3) a. Man persuades girl to dance with every senator.
 ((*a*) *girl* > *every senator* OK; *every senator* > (*a*) *girl* difficult)
- b. Man persuades a girl to dance with every senator.
 (both scopes OK)

In this paper, I propose an explanation of these facts. I argue, following Reinhart 1997 and Winter 1997, that indefinite DPs contain choice function variables. I will argue that in standard English the Principle of Full Interpretation requires this choice function variable to be spelled out, while in headlines this principle is potentially violable. I will argue that the indefinite force of indefinite DPs is granted by an existential operator which binds the choice function variables introduced by the indefinite, following Winter 1997. I propose that this existential operator enters into an Agree relation with the choice function variable, providing the pronunciation *a* (following ideas contained in Kratzer & Shimoyama 2002 and Kratzer 2005). I will argue that, in headlines, this Agree relation fails when the existential operator is in a high position; specifically, I will argue that in headlines, elements in the CP layer do not enter into Agree relations with elements below them. This will account for both the failure to pronounce articles in certain DPs and the fact that DPs without articles take obligatory widest scope. I will provide evidence that this analysis can also capture certain other features of ‘reduced written register’, such as constraints on dropping of pronouns in diary or ‘text message’ contexts. This proposal builds on the ‘clausal truncation’ analysis proposed by Rizzi 1994, Haegeman 1997, 2007; I will argue that casting this analysis in terms of Agree relations can better account for the data.

Firstly, in section 2, I will consider the patterns of grammatical alternations which an analysis of article drop must take into account. In section 3, I review previous ‘truncation’-based analyses of ‘reduced

written register’, and propose a revision of them in terms of the establishment of Agree relations. Sections 4 and 5 consider how articles receive their spellout under Agree, and the implications of failure to Agree in the CP layer for the spellout of articles, while section 6 considers the semantic implications of such an analysis, accounting for the obligatory wide scope of article-less DPs. Section 7 extends the analysis to the case of dropped definite articles. Section 8 sketches a way in which the analysis presented may also be able to account for the process of pronoun drop in reduced written register; finally, section 9 considers some avenues for future work, and concludes.

2 Data

Certain written registers of English show systematic omissions of certain elements. These written registers have been referred to as ‘block language’ by Straumann 1935, or as ‘reduced written register’ by Weir 2012. Such registers include diaries (Haegeman 1987b, 1997, 2007, Haegeman & Ihsane 1999, 2001, Weir 2012), text messages, other informal electronic communications such as emails or posts on social networking sites, recipes (Haegeman 1987a), and newspaper headlines (Mårdh 1980, Stowell 1991, 1999, de Lange 2004, Weir 2009).

For example, one characteristic of these registers is pronoun drop. While English is standardly assumed not to be a *pro*-drop language, something similar to *pro*-drop appears to be taking place in examples such as the below, which are grammatical sentences in the informal written registers (diaries, text messages, etc.) which I adduce below.

- (4) a. \emptyset Was raining yesterday.
 b. \emptyset Don’t want to go to the party.
 c. \emptyset Saw Bill yesterday. \emptyset Wasn’t a happy man.
 d. \emptyset Have to work so (\emptyset)¹ can’t come.

¹This position may be pronoun drop, or this sentence may simply be verb phrase conjunction: *I have to work so can’t come*.

In (4), subject pronouns are being dropped. It is also possible to drop object pronouns; this is a feature of recipe register, as discussed by Haegeman 1987a.

- (5)
- a. Bake \emptyset for thirty minutes.
 - b. Chop \emptyset finely and then add \emptyset to mixture.
 - c. Allow \emptyset to cool.

Object pronouns may also be dropped in the informal, diary-type registers, as (6) shows:

- (6)
- a. \emptyset Received my credit card statement in the mail today. \emptyset Will shred \emptyset later.
 - b. \emptyset Saw ex in street. \emptyset Had very strong desire to trip \emptyset up.

Another element which can be dropped in these registers is articles, which will be the main focus of this paper. This is particularly notable in the case of headlines.

- (7) Man bites dog

- (8) (from Weir 2009:5, originally from www.guardian.co.uk, 18 July 2009)

- a. \emptyset British first world war veteran dies at 113
- b. China quarantines \emptyset UK school group
- c. Purnell: I lost faith in \emptyset PM months ago
- d. \emptyset Malaysian suspected in \emptyset Jakarta blasts

Article drop is possible in the informal diary-type registers also:

- (9)
- a. Will go to \emptyset gym tomorrow.
 - b. Received credit card statement in \emptyset mail.

- c. Finally have \emptyset new job!
- d. You going to \emptyset party tonight?²

These deletions, however, show curious asymmetries. As pointed out in Stowell 1991 and Weir 2009, and as noted in Mårdh 1980's corpus study of 'headlines', there are restrictions on the co-occurrence in a sentence of noun phrases bearing articles with noun phrases which do not bear articles. The relevant data are shown schematically in (10).

- (10)
- a. Man bites dog
 - b. Man bites a dog
 - c. ?A man bites a dog.
 - d. *A man bites dog.

Mårdh 1980 finds no instances of article-ful noun phrases preceding article-less noun phrases in the corpus of headlines which she investigates. On the basis of this, Mårdh proposes a restriction based on linear order: article-ful noun phrases may not linearly precede article-less noun phrases. Stowell 1991 revises this condition to one of c-command: an article-ful noun phrase may not c-command an article-less noun phrase.

There are also intriguing scope asymmetries in the interpretations of article-less and article-ful noun phrases in headlines. Consider the below examples.

- (11) Professor reads every law on the books
 ((a) *professor* > *every law* OK; *every law* > (a) *professor* difficult)

²This paper is not going to consider the reasons behind the omission of the verb *are* in this example. My initial suspicion is that this is *phonological* deletion of unstressed left-edge material, as argued for by Weir 2012. However, other examples such as *What you doing?* may argue against such a proposal. I leave this matter aside here.

- (12) a. Man persuades girl to dance with every senator.
 ((*a girl* > *every senator* OK; *every senator* > (*a girl*) difficult)
- b. Man persuades a girl to dance with every senator.
 (both scopes OK)
- (13) a. General orders soldier to shoot each insurgent
 ((*a soldier* > *each insurgent* OK; *each insurgent* > (*a soldier*) difficult)
- b. General orders a soldier to shoot each insurgent
 (both scopes OK)

In all of these cases, an article-less noun phrase appears to have obligatory widest scope; a quantifier like *every* or *each* cannot take scope over the article-less noun phrase. Article-less indefinite noun phrases in headlines appear to be working like specific indefinites (Farkas 1994); a headline like *man bites dog* can be paraphrased as *a certain man bit a certain dog*. However, when the article is restored, scope relations become once again possible, as shown in (12b) and (13b); *every-* and *each-*quantifiers can take scope over a phrase like *a girl*.

In this paper, I will propose an analysis of article drop which captures both of the properties outlined above; both the fact that article-ful noun phrases may not c-command article-less noun phrases, and that article-less noun phrases appear to take obligatory widest scope while article-ful noun phrases may enter into scopal relations. I will argue that the pronunciation of *a* is licensed by an existential operator which is generated in the scope position of that existential. That position may be very high in the clause; for the wide-scope case, perhaps in the CP layer. Building on a ‘truncation’ analysis of reduced written register (Rizzi 1994, Haegeman 1997, 2007), I will suggest that the Agree operation is not active at the CP layer in that register. This will then have the effect that wide-scope indefinites do not receive a pronunciation as *a* (as they do not establish an Agree relation with the existential

operator which is in CP); and, if Agree is the driver of movement (Chomsky 2000), it will have the further effect that quantifiers such as *every* cannot raise to a position above the scope of the indefinite. Firstly, I will describe the ‘truncation’ account of reduced written register as it has been presented in the literature, before turning to the question of how a revised version of the truncation analysis can account for article drop.

3 The ‘truncation’ analysis of reduced written register

3.1 Truncation: Rizzi 1994, Haegeman 2007

The ‘truncation’ analysis was first proposed to account for null subjects in child speech. A stage of ‘subject drop’ is a common acquisitional stage, even for children acquiring languages like English which do not standardly have null subjects; for discussion of the English case see, among many others, Gerken 1991, Rizzi 1994, Roeper & Rohrbacher 2000, Orfitelli & Hyams 2008, Hyams 2011.³ One influential grammatical model of this fact is the truncation model, originally due to Rizzi 1994. In such models, the highest projections in a clause are *truncated*. In Rizzi’s original model, this meant exactly what it said: children acquiring their language initially do not project layers of structure above the IP layer. CP, or layers of functional structure comprising the ‘CP layer’ (as in Rizzi 1997), are not projected.

This does not in itself imply that subjects would be missing from child utterances, as subjects, by assumption, reside in the Spec of IP (or TP, or SubjP (Rizzi & Shlonsky 2007) – the label is not important; what is important is that the canonical location for the subject is in the ‘IP layer’, not the ‘CP layer’). The subject is not ‘pruned’ in any sense. Rather, the configuration created by ‘truncation’ (Rizzi 1994 argues) licenses a particular type of empty category. Normally, there would be a requirement that nominal empty categories (those which are not *pro*, which is licensed by agreement)

³Having said that English does not standardly have null subjects, see Weir 2012 for discussion of a phonological process of left-edge deletion in adult English which can look a lot like subject drop.

should be licensed; that is, there should be some equivalent of the Empty Category Principle:

(14) (Rizzi 1994:(23))

Empty categories ⟨-p⟩ [that is, not pronominal – AW] must be chain-connected to an antecedent.

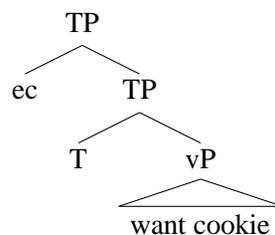
Rizzi's innovation is to add a rider to the condition in (14).

(15) ... if they can. (Rizzi 1994:(31))

The effect of this rider is to relax the condition for empty categories, such that an empty category could survive ungoverned if it were in the highest possible position in the phrase marker – a position where no antecedent could even potentially govern the empty category. Such an empty category would not be ruled out by the ECP, as modified.

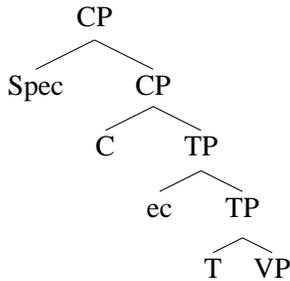
This modified ECP, in combination with truncation, is what licenses the (optional) child null subject, described by Rizzi as ‘the null constant, a non-variable R-expression’ (p. 159). If the child does not project CP, then this empty category resides in [Spec, IP]. By assumption, this is the highest position in the CP-less clause. As such, the empty category is licensed.

(16)



As children acquire a better command of the grammar and project a CP layer, then a location (namely, [Spec, CP]) is generated which could host a *potential* antecedent for the empty category in [Spec, IP]. As such, the empty category is no longer licensed; it *could* be chain-connected to a potential antecedent in [Spec, CP], and so *must* be.

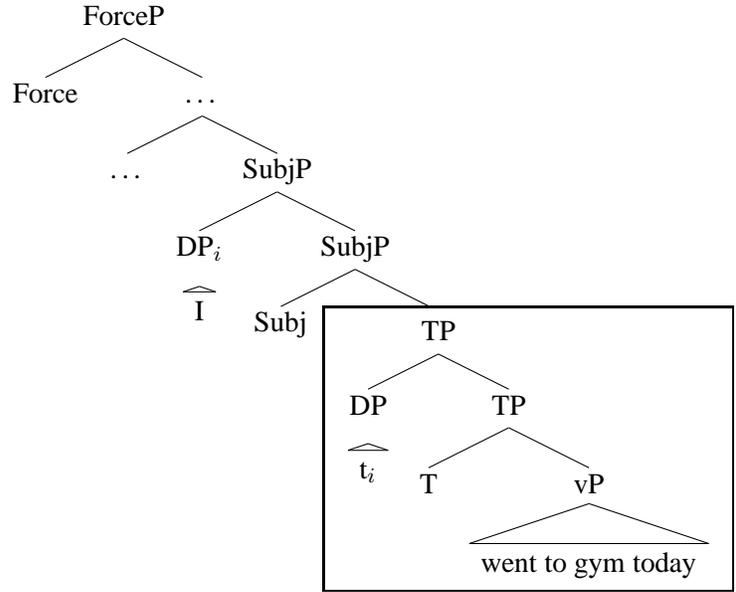
(17) Empty category not licensed:



This analysis can clearly be extended to ‘diary drop’, and indeed Haegeman 1997 does this explicitly, arguing that diary drop also represents a ‘truncated’ register where (root) CP is not projected. Haegeman 2007 adopts a variant of the same overall approach. In Haegeman 2007, ‘truncation’ is not modeled as a failure to project the high regions of the tree, but rather as a failure to spell them out. In a phase-based approach to spellout (Chomsky 2001, 2008, and much other work), Haegeman points out (following work by Rizzi 2006) that there must be a ‘highest’ phase head, a head that selects its complement and sends it to spellout, but is not itself selected by any phase head. Rizzi 2006 has argued that this is responsible, for example, for the failure to pronounced complementizers in root clauses; as the highest phase head in an utterance, they are not selected by any higher head such that they can be sent to spellout. Haegeman’s proposal is that ‘truncation’ is the selection of a head other than the canonical highest head (say, Force⁰) as the highest phase head. Concretely, Haegeman argues that in the English diary drop register, Subj⁰ is the highest phase head. SubjP is a phrase for hosting sentential subjects argued for by Rizzi & Shlonsky 2007, above TP, but below the CP layer. Subjects move to the specifier of SubjP. If Subj⁰ is designated as the highest phase head, then this entails that material

in SubjP's Spec, and any material merged higher than SubjP, would not be spelt out. I illustrate this in (18). I mark material that is sent to spellout with a box.

(18)



Haegeman argues that, in addition to the English diary drop cases, cases of topic drop (in e.g. Brazilian Portuguese) can be analyzed as choosing Top as the highest phase head, thereby spelling out all material (including the subject) to the exclusion of material which has moved to [Spec, TopP].

Both of these approaches to truncation have the advantage that they capture certain other features of the relevant registers, over and above subject drop. The most salient one is the failure of elements to move to the CP layer. In diary English, as noted above, null subjects are incompatible with elements which have moved to the CP layer; either T⁰-to-C⁰ movement, as in the case of subject-Aux inversion; *wh*-movement (which of course entails subject-Aux inversion as well); or topicalization.

- (19) a. ∅ Went to gym today.
- b. *Should ∅ go to gym tomorrow?
- c. *What should ∅ say to professor tomorrow?

- d. *Where should \emptyset go for lunch?
- e. *Under no circumstances will \emptyset do such a thing.
- f. *More problems, \emptyset don't need. (Haegeman)

If the CP layer is simply not projected (as in Rizzi 1994), or is not sent to spellout (as in Haegeman 2007), then the phenomena in (19) are expected. Movement to the CP layer is either simply not possible if CP isn't projected, or is possible but would entail moving out of the spellout domain.

3.2 Problems for the truncation analysis

There are, however, some problems for a truncation analysis whereby structure in the CP layer is either not projected or not sent to spellout. Haegeman 1997 notes that fronted modifiers, for example, *are* compatible with subject drop:

- (20)
- a. Tomorrow \emptyset will go to gym.
 - b. Yesterday \emptyset rained all day.
 - c. At the restaurant \emptyset got drunker than I care to remember.

Haegeman 2007 proposes a derivation of cases like (20a) from sentences such as *I tomorrow will go to the gym*, arguing that a sentence-medial position of an modifier like *tomorrow* is possible in certain 'journalistic' registers (Haegeman 2002):

- (21) The Prime Minister tomorrow will deny...

In this case, Haegeman argues, the modifier is a TP adjunct; however, the subject has raised out of TP into SubjP, out of the spellout domain. The modifier *tomorrow* is pronounced, to the exclusion of the subject.

One concern about this solution is that the ‘journalistic’ register which permits sentence-medial adverbs, as in (21), is not clearly the same register as is used in diaries. Subject drop is not *obligatory* in diaries, and if it is not used, the sentence-medial adverbs sound peculiar in a diary context:

- (22) a. I will go to the gym tomorrow.
 b. !I tomorrow will go to the gym.

3.3 A revised analysis: failure of CP-level Agree

I argue that the difference between a fronted argument (as in *More problems, don't need*) and a fronted modifier (as in *Tomorrow will go to gym*) is that a fronted argument has clearly *moved* to its position. By contrast, an adjunct like *tomorrow* may be base-generated. I will argue that the constraint in cases of reduced written register is not one of whether material may be present in the CP layer; it can be, suggesting that a truncation account where the material in the CP layer is not projected or not pronounced is not on the right track. The constraint, I argue, is that material can't *move* to the CP layer. Support for this is to be found in the following data.

Standard English cases:

- (23) a. [It is likely [that John will win tomorrow.]]
 b. Tomorrow, [it is likely [that John will win t]]
- (24) a. [I want [to see a good turnout tomorrow.]]
 b. Tomorrow, [I want [to see a good turnout t]]
- (25) a. [I want you [to smile at the dinner.]]
 b. At the dinner, [I want you [to smile t]]

Diary drop cases:

- (26) a. \emptyset Is likely that John will win tomorrow.
 b. *Tomorrow, \emptyset is likely that John will win.
- (27) a. \emptyset Want to see a good turnout tomorrow.
 b. *Tomorrow, \emptyset want to see a good turnout.
- (28) a. \emptyset Want you to smile at the dinner.
 b. *At the dinner, \emptyset want you to smile.

In all of the standard English cases, an adjunct modifying the embedded clause can be pronounced at the front of the matrix clause. Being pronounced in a location different from the location of semantic interpretation is diagnostic of movement of the adjunct in these cases. Putting an adjunct which is to be interpreted with respect to the embedded clause at the front of the matrix clause in the diary drop cases, however, leads to a degradation. This degradation does not occur if the adjunct modifies the main clause, that is, if it can be interpreted in the position in which it is pronounced.

- (29) a. Yesterday \emptyset rained all day.
 b. Tomorrow, \emptyset will see a good turnout.
 c. At the dinner, \emptyset smiled all the time.
- (30) a. Yesterday \emptyset was likely that John would win (but it isn't today)
 b. Yesterday \emptyset wanted to have a curry. (Don't today.)
 (that is, the time of wanting was yesterday, not necessarily the time of having a curry)

From these data, I suggest the generalization that what is prohibited in diary register is *movement* to the CP layer. Base-generating modifiers in the CP layer is possible; only movement is barred. Further support for this comes from the contrast in (31), suggesting that while movement (i.e. a filler-gap dependency) of a topic is incompatible with subject drop, a base-generated topic (resumed by a pronoun) is compatible:⁴

- (31) a. *More problems, Ø don't need
 b. More problems, Ø don't need 'em

This asymmetry between movement to the CP layer (blocked) and base-generation in the CP layer (permitted) is not predicted by any of the 'truncation' analyses proposed in the literature. In these analyses, the CP layer as a whole is either not present or is not spelt out; neither of these alternatives makes a distinction between movement to the CP layer or base-generation in the CP layer – both should be ruled out. I therefore reject the truncation account. But I would like to propose an alternative based on it.

- (32) *No Agree in the CP layer in 'reduced written register'*

In the 'reduced written register' represented by diaries (and also headlines, text messages, social networking/'Facebook register', etc), elements in the CP layer do not establish Agree relations with elements below.

This condition is intended to rule out movement, while permitting base-generation of elements in CP. If we assume that Agree is the driver of movement – that is, elements which move do so as a consequence

⁴Haegeman 2007:fn. 8 notes this asymmetry, but suggests that there is an intonation break suggesting the existence of two separate clauses: *More problems. Don't need 'em*. I do not think this intonation break is absolutely required, however; in my opinion (insofar as one can have prosodic judgments concerning a sentence which is only grammatical in writing), (30b) is well-formed with the same prosodic contour as (30a), suggesting that the structures are relatively parallel and that (30b) should be analyzed as one sentence rather than two.

of their being probed by a higher head, and move to adjoin to that head (in the case of head-to-head movement) or to the Spec of that head, as in Chomsky 2000 – then if Agree is not active in the CP layer, we rule out any movement to CP. However, elements which are merged in to positions in CP, without the mediation of Agree, are expected to be grammatical.

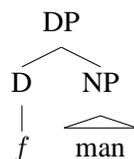
I have not given a reason why the principle in (32) motivates subject drop. Subjects are normally considered to move to [Spec, TP], a position below the CP layer, so it is not clear that (32) would do anything to block the expression of subjects. I will consider this issue in section 8. For now, I will turn to how the lack of Agree in CP, a modification of the truncation approach proposed in earlier work to analyze the phenomenon of reduced written register, has an effect on the spellout of articles.

4 How articles get their pronunciation

4.1 What is an indefinite article?

In this paper, I will follow the approach to indefinite DPs taken by Reinhart 1997 and Winter 1997. That is, I will analyze indefinite articles as having the denotation of choice functions, functions which combine with a predicate and return an entity which is in the extension of that predicate. An indefinite DP is built up as below.

(33) a.



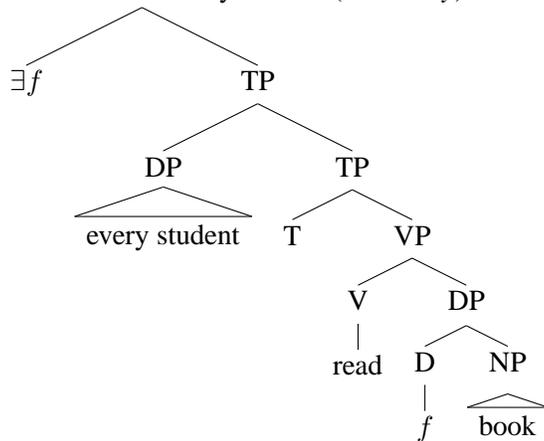
b. $\llbracket (33a) \rrbracket = f(\text{man})$ (that is, some entity in the extension of *man*)

In the theory of Reinhart and Winter, these choice functions can be existentially closed. Winter specifically argues that they can be existentially closed at any point in the tree, in order to account for scopal ambiguities – the fact that indefinites can take scope either below or above quantifiers such

as *every*, in examples like the below.

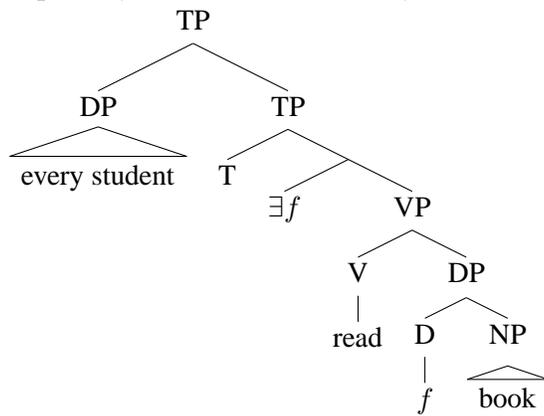
(34) Every student read a book.

(35) a. One book for every student ($a > every$):



‘There is a way of picking books such that every student read the book thus picked out.’

b. A possibly different book for every student ($every > a$):



‘For every student x , there is a way of picking books such that x read the book thus picked out.’

In this paper, I will take the strong position that choice functions are how *all* singular indefinites are ‘constructed’. That is, I take the position (along with Winter 1997) that *a man* has no quantificational

force of its own; any quantificational force is might appear to have is a result of the interaction of quantifiers in the sentence and the site of existential closure of the choice function, as sketched above.

I will also take the position that one single \exists operator can be responsible for closing many choice function variables. That is, the \exists operator being appealed to here is unselective, and binds any free variable in its scope. We could represent this with a rule of composition given in (36).

- (36) $[[\exists]]$ composes with an expression ξ of type $\langle t \rangle$, or type $\langle \alpha, \langle \beta, \dots \langle \sigma, t \rangle \rangle \rangle$ (that is, an expression which would be of type $\langle t \rangle$ after λ -application) which contains free choice function variables. It returns an expression of the same type as ξ in which all the free choice function variables in ξ are existentially bound.

This, for example, would result in a translation of a structure like (37a) below into the semantic representation in (37b). (I abbreviate the details of the QR of the subject *every senator*.)

- (37) a. Every senator [\exists [convinced [f girl] [to dance with [g boy]]]] (pronounced *Every senator convinced a girl to dance with a boy*)
- b. $\forall x.\text{senator}(x) \rightarrow \exists f, g.x \text{ convinced } f(\text{girl}) \text{ to dance with } g\text{boy}$
- For every senator x , there is a way of picking out girls and a way of picking out boys such that x convinced the picked-out girl to dance with the picked-out boy.

This is the ‘low scope’ reading of the indefinites, with different boys and girls for each senator; different scopes are achieved by closing the choice functions at different levels. For wide-scope for both indefinites, \exists can be inserted at a position above *every senator*:⁵

⁵There is a potential problem here, which is that in this system, *a boy* cannot take widest scope while leaving *a girl* to take narrow scope. Either \exists captures both indefinites at a high level (above *every senator*), or it captures neither. This is problematic in light of the fact that *Every senator convinced a girl to dance with a boy* does seem to have a reading where the girls co-vary with the senators, but *a boy* takes wide scope (that is, there is one particular boy). However, this sense of the sentence may not be a separate reading from the one where the universal takes scope over both indefinites. It faces a familiar

- (38) a. \exists [Every senator [convinced [*f* girl] [to dance with [*g* boy]]]]
 b. $\exists f, g. \forall x. \text{senator}(x) \rightarrow x \text{ convinced } f(\text{girl}) \text{ to dance with } g(\text{boy})$

There is a way of picking out girls and a way of picking out boys such that for every senator x , x convinced the picked-out girl to dance with the picked-out boy.

4.2 How to say *a*

A singular indefinite, on the view sketched above, is constructed by the combination of a choice function within DP which combines with a predicate, and an existential binder of that choice function higher in the tree. How I will account for article drop in headlines exploits the ‘bipartite’ nature of indefinites on this conception. I will adopt a variant of the analysis in Kratzer 2005, which itself builds on the work of Beghelli & Stowell 1997. On Kratzer’s analysis, an article like *a* bears an uninterpretable feature, which is checked by an unpronounced existential operator higher in the clause.⁶ In this way, the \exists operator (in the clausal spine) licenses the pronunciation of *a* within the nominal domain, through the mediation of the Agree relation which checks *a*’s uninterpretable feature.

In order to capture the headline data, I argue a revision to this view. Rather than *a* bearing an uninterpretable feature which has to be checked, I argue that the pronunciation of the choice function component of an indefinite DP is governed by the PRINCIPLE OF FULL INTERPRETATION (Chomsky 1995), a principle which states that every element in the syntax must receive some spellout expression.

I make the assumption that choice function variables are not ‘inherently’ specified for pronunciation.

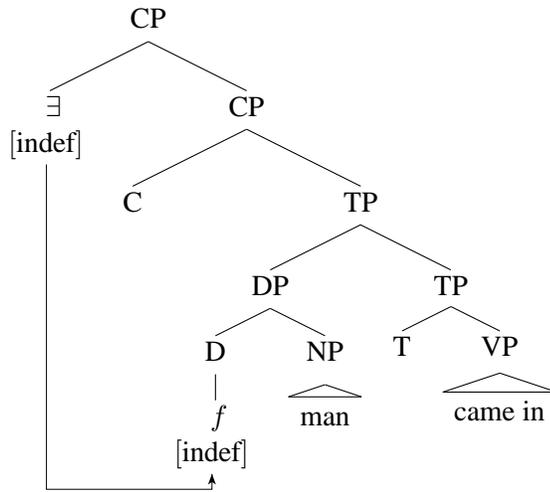
And yet, the Principle of Full Interpretation requires that these variables receive some sort of spellout.

problem with sentences where universals take scope over existentials, namely that the existential is not forced to co-vary for the truth conditions of the sentence to be satisfied; even with low scope for *a boy*, the picked-out boy could, ‘by chance’, be the same for each senator. As such, I will tentatively proceed as if this is not a problem, although this issue should be borne in mind.

⁶I do not here take over the precise Hamblin semantics for indefinites proposed by Kratzer & Shimoyama 2002 and Kratzer 2005, rather employing the Reinhart/Winter choice function semantics for indefinites. I suspect that the semantics proposed by Kratzer and Shimoyama is in fact compatible with the data and the general outline of the analysis presented here, and a task for future work would be to check whether this is true in all respects.

The way the grammar deals with this problem is via Agree. An Agree relation can be established between the existential operator and a choice function in its scope. We could imagine that this Agreement relation transmits certain features to the choice function, which provide a specification for the choice function’s pronunciation.⁷ Suppose that the feature [indef] provides the spellout specification *a*. Then the pronunciation of indefinites as *a* is governed by an Agree relation established between an \exists operator and a choice function variable, as schematized in (39).

(39) a.



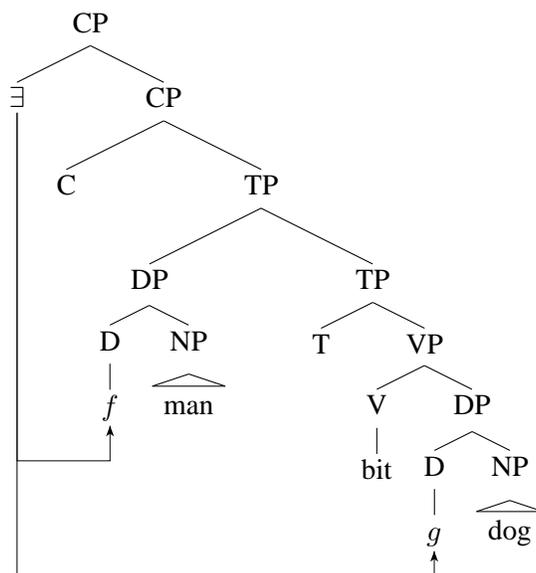
b. Pronunciation: *A man came in*

In the discussion of the semantics above, it was proposed that the \exists operator can be unselective, binding many choice function variables, not just one. I propose that the \exists operator can also enter into an Agree relation with many choice function variables in the syntax, following for example a model of Multiple Agree, where one head may probe and enter into an Agree relation more than once (Hiraiwa 2002, 2005, Chomsky 2004). This allows one \exists operator to provide the pronunciation for many choice function variables, satisfying the Principle of Full Interpretation. Schematically, a sentence like *a man*

⁷This view of binding has parallels with the method proposed for the ‘construction’ of reflexive and relative pronouns in Kratzer 2009, where features responsible for the spellout of these pronouns are also ‘transferred down’ by the mechanism of Agree.

bit a dog looks like the below.

(40)



(41) $\llbracket(40)\rrbracket = \exists f, g. \text{bit}(f(\text{man}), g(\text{dog}))$

‘There is a way of picking out men and a way of picking out dogs such that the picked-out man bit the picked-out dog.’

From this, we derive both the pronunciation and the meaning of indefinites such as *a dog*; they receive both from the presence of an \exists operator high in the clause.

4.3 What does \exists bind?

Here, I assume that the \exists operator, binding choice functions, is the *only* way of ‘creating’ indefinites; that is, there are no indefinites which have a quantificational force of their own, a conclusion argued for by Kamp 1981, Heim 1982, Reinhart 1997, Winter 1997, but argued against by (among many others) Diesing 1992 and Kratzer 1998.

My analysis also assumes that existential closure can happen at a clausal level; perhaps not as high a

level as the ‘text-level’ closure proposed by Heim 1982, but certainly at a high level. This conclusion has been argued against by Diesing 1992, on the basis of examples like (42).

(42) Firemen are tall.

Assuming that the bare plural *firemen* introduces a free variable, we do not want to claim that this variable can be existentially bound; we would predict that (42) has an existential reading (\approx *Some firemen are tall*) which it does not have. On the basis of this, Diesing argues that the domain of existential closure is the VP.

To circumvent this problem, I propose that there is a distinction between the variable being introduced by singular indefinites, such as *a fireman*, and that introduced by bare plurals such as *firemen*. The variable introduced by a singular indefinite is a choice function, as proposed above. The variable introduced by a bare plural is a variable over entities.

(43) a. $\llbracket \text{a fireman} \rrbracket = f(\text{fireman})$
 b. $\llbracket \text{firemen} \rrbracket = \text{fireman}(x)$

Singular indefinites introduce variables over choice functions, then. These variables, on the view proposed by Winter 1997⁸ get existentially closed, possibly at a high level. So *a boy arrived* receives the denotation in (44):

(44) $\llbracket \text{a boy arrived} \rrbracket = \exists f.(f(\llbracket \text{boy} \rrbracket)) \text{ arrived}$
 ‘There is a way of picking out a boy such that that boy arrived.’

Bare plurals, on the other hand, introduce variables over entities. For these variables, we can maintain the Diesing view that the domain of existential closure – existential closure of entity-type variables,

⁸But see Kratzer 1998, 2003, Matthewson 2001 for arguments against the existential closure view.

that is – is the VP, allowing us to derive the difference between *I saw fireman* (with an existential reading, contributed by the VP-level existential closure of the variable introduced by *firemen*) and *Firemen are tall* (no existential reading possible, only generic).

For singular indefinites, however, a choice function variable is introduced, and such variables can be closed at any level, including above the VP, as proposed e.g. in Winter 1997.⁹ Allowing for singular indefinites to have their choice functions closed at a level above the VP accounts for the presence of the existential reading in a sentence like *A team member is tall*.¹⁰

There are in fact other options for what \exists could be binding. See, for example, Kratzer & Shimoyama 2002 and Kratzer 2005 for a suggestion that operators like \exists might quantify over propositions. I will not choose between these views here. The important notion that I take over from the choice-functional analysis of Winter and Reinhart is that indefinites do not introduce their own quantificational force, and that their existential force is provided by an operator higher in the structure than the position that they are spoken in. The second of these conjuncts is also supported and developed in Kratzer & Shimoyama 2002 and Kratzer 2005, wherein there is also an analysis cast in terms of Agree for how the pronunciation of quantificational elements is licensed. While the precise analysis in Kratzer 2005 is not commensurate with what I say in this paper¹¹, the essential idea – that the pronunciation of determiners can be dependent on a relationship established with a higher operator – is the same. It is possible that the two approaches can be reconciled; I leave detailed exploration of that possibility to future work. It should be noted Kratzer 2005, contra the present analysis, assumes that (at least some) indefinites *can* have quantificational force of their own – although, interestingly, that quantificational force is also

⁹See also Matthewson 1999 for an analysis of a series of St'át'imcets determiners which she argues are choice functions *obligatorily* bound at a high (CP-level) position – although note also that Matthewson 2001 recants this claim.

¹⁰I have changed the example because *A fireman is tall* seems to only with difficulty allow the existential reading, rather seeming to have a generic interpretation. I am not sure why this difference should exist.

¹¹The essential difference is that Kratzer proposes that determiners are born with uninterpretable features which are checked by the higher quantificational operator, while I am assuming that determiners are born with no features; the requirement that the determiners spell out is driven not by uninterpretable features but by the Principle of Full Interpretation enforcing spellout.

argued to be provided by an operator separate from the determiner *a* itself. Kratzer does, however, tentatively consider the possibility that *all* quantification may be sentential (over propositions) and that there is no nominal quantification (which would entail that no indefinite would have ‘its own’ quantificational force), but concludes that ‘[e]xploring that possibility would require a very detailed investigation’.¹² The view that there is no truly nominal quantification, at least for indefinites, would be closer to what I propose in this paper – although I am not in a position to provide here the ‘detailed investigation’ which Kratzer calls for. The key point, however, is that there is precedent for believing both that (a) indefinites do not introduce their own quantificational force and (b) both the semantics and the pronunciation of determiners like *a* are dependent on operators outside the DP placed higher in the clause. I will now show how this analysis can account for the failure to pronounce indefinite articles in headlines.

5 Failure to Agree – failure to spell out

I have proposed that the following holds of reduced written English register.

(45) *No CP-level Agree* (repeated from (32))

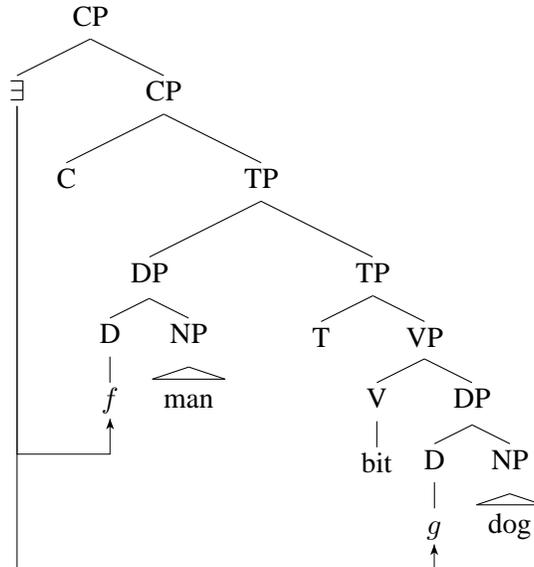
In ‘reduced written register’, elements in the CP layer do not Agree with elements below.

From this principle, we can derive the facts concerning article drop in headlines. Let us recall the structure of a sentence with two indefinites, such as *a man bites a dog*,¹³ where the Agree relation is represented by the arrows.

¹²Pp. 36–7 in the manuscript version available at <http://semanticsarchive.net/Archive/2IxM2I5N/Indefinites%20and%20their%20operators.pdf>.

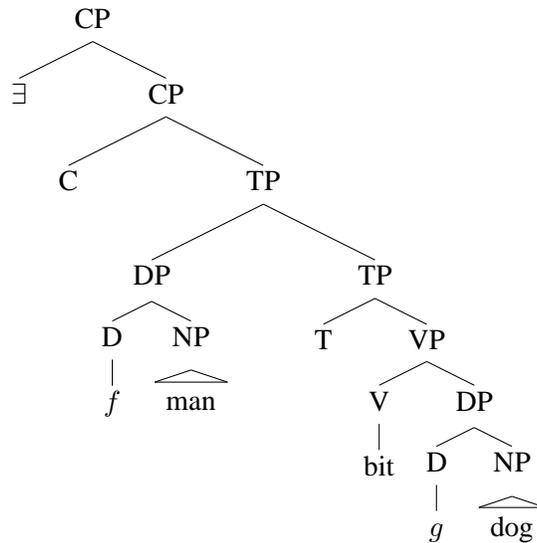
¹³I am not going to consider in this paper the source or interpretation of the present-as-past tense morphology in headlines, rather just taking the present tense form of *bites* for granted.

(46)



Now let us consider what happens if the Agree relation is severed, as proposed here.

(47)



In this structure, an indefinite semantics is still granted to the two DPs in the scope of \exists . Nothing prevents the existential closure of the choice function variables within the DPs by \exists , an unselective binder. What does differ is the possibility of morphological realization. If Agree is not active,

then \exists cannot transmit down the [indef] features to the determiners, and therefore cannot grant the pronunciation *a* to determiners in DPs.

What of the Principle of Full Interpretation, though? In standard English, on the account proposed here, this principle is what guarantees the pronunciation of articles like *a*; it drives the Agree relation which passes on the [indef] features. I argue that the Principle of Full Interpretation is not an absolute, inviolable principle, but rather a constraint which is satisfied to the greatest extent possible.¹⁴ In the case of determiners such as *a*, the way of satisfying the Principle of Full Interpretation is to establish the Agree relations between the \exists operator and the determiner. This ensures that there is a phonological exponent for the existentially closed choice function. In standard English, such an Agree relation can always be entered into, and so it *must* always be entered into; not to do so would be a gratuitous violation of the Principle of Full Interpretation. In reduced written register, however, Agree cannot be established in the CP layer. This restriction must be understood as categorical and inviolable.¹⁵ Given that restriction, then there will be some cases in which an Agree relation between an \exists operator and a choice function variable cannot be established, and no phonological exponent of the choice function (a pronunciation as *a*) can be generated; for example, the cases in which the \exists operator is in CP. On the current proposal, violations of the Principle of Full Interpretation aren't fatal; if there's nothing the grammar can do to fully satisfy the Principle of Full Interpretation, then it does 'the best it can'. Given the syntax in (47), 'the best it can' is the spellout in (48), where neither article receives a phonological exponent.

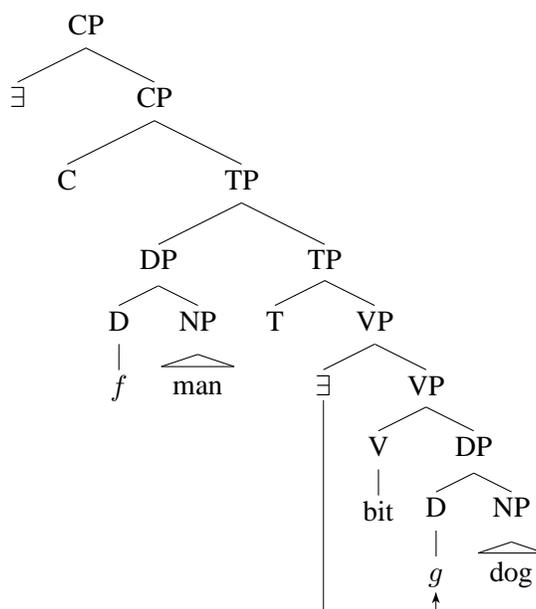
(48) Man bites dog

¹⁴This proposal is somewhat in the mold of Optimality Theory, although I am not proposing constraints which can have varied rankings with respect to each other as in OT.

¹⁵In a sense, it defines what it means for an utterance to be in reduced written register; if Agree is established in the CP layer, then an utterance isn't 'reduced'. See section 7, below, for a discussion of parametric variation between registers.

We should also be able to generate the pronunciation *Man bites a dog*. How can this be done? We could imagine that \exists -closure can happen at any level within the clause, including for example at the level of the VP, as proposed for example by Winter 1997. Such a low existential closure would have within its scope the object of the clause, but not the subject.

(49)

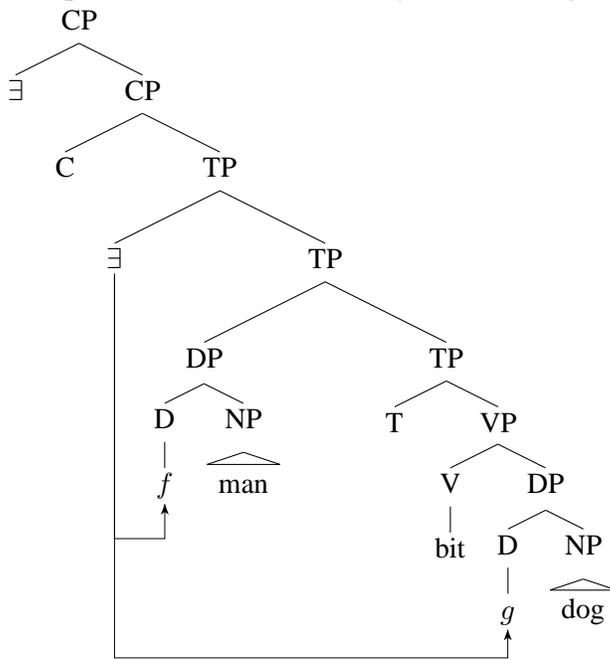


Semantically, this has exactly the same denotation as the structure with high existential closure, as two existential closures will not scopally interact (we will shortly consider cases where the different position of existential closure does have semantic import). But the morphophonological effect is different. Agree *is* active at the VP level in reduced written register, as notated by the arrow in (49). The low \exists is therefore capable of granting the pronunciation *a* to the choice function variable in the object DP, thereby generating the pronunciation:

(50) Man bites a dog

However, \exists is an unselective binder and Agreeer. What is *not* possible, therefore, is the insertion of \exists in such a way as it grants an *a* pronunciation to the choice function variable in the indefinite subject alone, to the exclusion of the object. Any place at which \exists could be inserted above the subject would either Agree with both the subject and the object, granting them both *a* pronunciations, or (if inserted at the CP level) would fail to Agree with any article in its scope. But there is no way in which \exists could Agree *only* with the subject.

(51) Two positions for \exists above the subject; neither Agrees with the subject alone



There is therefore no way of deriving the below pronunciation, as desired:

(52) *A man bites dog

A further prediction is made: once \exists is inserted, it should Agree with everything in its scope. This explains why Stowell 1991 made the generalization that article-ful DPs cannot c-command article-less DPs. That isn't strictly the right generalization; the generalization is not strictly one of c-command

between DPs, but rather the c-command relation between an \exists operator granting the *a* pronunciation, and the choice function variable to which it grants that pronunciation. Any choice function variable that \exists c-commands will receive the *a* pronunciation, ruling out a form like (53c). (I assume that an Appl(licative) head is involved in forming the double object construction, following Bruening 2010, but the precise choice of head is unimportant here, as long as we believe that \exists can be merged above that head but below the indirect object introduced by it.)

- (53) a. Dog gives man a bone
 [Dog gives [man [\exists Appl [a bone]]]]
- b. Dog gives a man a bone
 [Dog gives [\exists [a man Appl [a bone]]]]
- c. *Dog gives a man bone
 (would require \exists to take scope over the indirect object but not the direct object, which is impossible)

A way of distinguishing between a generalization involving c-command between DPs, and c-command between an \exists -operator and DPs, is to look at conjoined DPs. I assume, following Munn 1993, that in a conjoined DP like [John and Mary] or [every man and his wife], the first DP c-commands the second one, but not inversely.

On Stowell's generalization – an article-ful DP may not c-command an article-less one – we would then expect a conjoined DP like [\emptyset man and a dog] to be grammatical in headlines. On the account proposed in the present paper, we don't. Why not? Because the presence of an article *a* is licensed by the presence of an \exists operator, which in a DP like [man and a dog] would have to be above [a dog] but not above the whole DP (as it would then license the pronunciation *a* on both of the conjuncts, leading to [a man and a dog]). But an \exists operator cannot close off a DP, which is of type $\langle e \rangle$. Existential closure

only makes sense when applied to a formula of type $\langle t \rangle$, or one of type $\langle t \rangle$ after λ -application. As such, a representation like [man and \exists [a dog]] is semantically ill-formed. We therefore predict that either both conjuncts in a conjoined DP should bear an indefinite article, or neither should, but there cannot be ‘mixing’. The relevant data are presented in (54), along with my tentative judgments of their grammaticality on an indefinite reading for the dropped article. I think that a definite reading is available in these cases, for reasons I will discuss in section 7.

- (54) a. ??Man and a dog attack a passer-by
 b. ??Passer-by attacks man and a dog

- (55) a. ??Escapee and a warden are found in bed together¹⁶
 b. ??Warden and an escapee are found in bed together

I believe that my hypothesis is borne out – that is, that these headlines are ill-formed – but to be sure of this, greater confidence is required concerning the judgments in (54), (55). I do not find them as bad as **A man bites dog*, and have no theory for why this is. The corpus study in Mårdh 1980 does not report the right sort of cases to test this. At least one other speaker (Kyle Johnson) finds (54), (55) ill-formed on the indefinite reading. If this is borne out, for example by further studies of corpora, then this would be support for the view advanced in this paper. I now turn to some predictions the account makes for the scope that article-less DPs can take.

¹⁶This is a constructed headline but a real story: http://www.huffingtonpost.co.uk/2012/04/12/escaped-convict-prison-officer-bed-police-raid_n_1420034.html

6 Accounting for scope facts

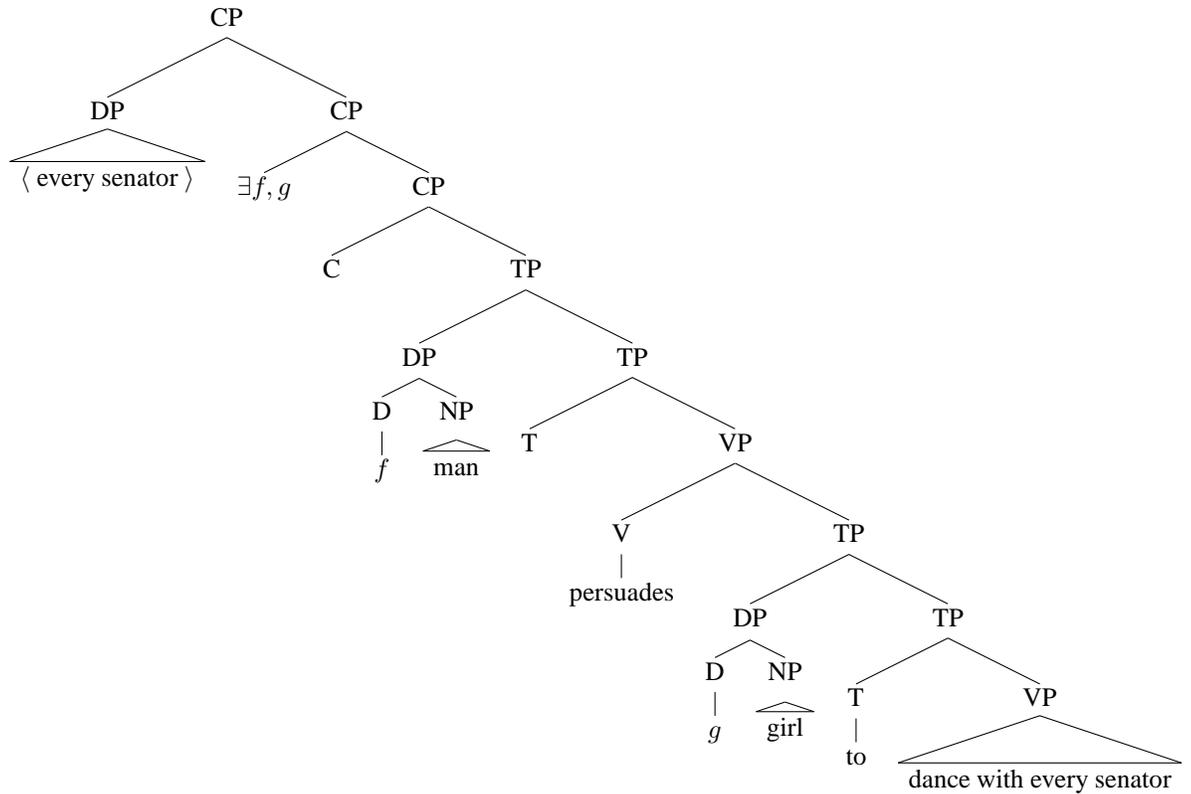
Recall the scope facts presented in (12), repeated here as (56).

- (56) a. Man persuades girl to dance with every senator.
 ((*a girl* > *every senator* OK; *every senator* > (*a girl* difficult)
- b. Man persuades a girl to dance with every senator.
 (both scopes OK)

We are now in a position to explain the fact that article-less indefinite DPs appear to have obligatory wide scope, while article-ful indefinite DPs appear to take part in scopal relations. Under the hypothesis pursued here, where article-less DPs are existentially bound by an operator very high in the clause, we expect article-less DPs to take wide scope. The position at which the existential closure is interpreted is very high in the clause. Why can't *every senator* QR to a position above that existential closure? The answer is that such an operation would involve (covert) movement of the phrase *every senator* to a position above the existential closure in the CP layer. (57a) shows the putative syntax and (57b) how such a structure would be interpreted to provide a wide-scope reading for the universal.¹⁷

¹⁷I have represented *persuades* as taking an ECM-type structure, where *girl* is a subject of the embedded TP, purely for expository reasons; what I say is also compatible with a raising-to-object analysis.

(57) a.



- b. $\llbracket(57a)\rrbracket = \forall x.\text{senator}(x) \rightarrow \exists f, g. f(\text{man}) \text{ persuaded } g(\text{girl}) \text{ to dance with } x$
 For every senator, there is a way of picking men and girls such that that man persuaded that girl to dance with that senator.

However, movement to the CP layer is precisely what is ruled out by the principle that Agree is not active in the CP layer, as discussed in section 3.3. Assuming that Agree is responsible for driving movement in the covert syntax just as much as in the overt syntax, we predict that this QR should be impossible. This is the reason why *every senator* cannot take scope over the two indefinites in (56a); the quantifier cannot move to a position above the existential operator binding the choice function variables in the article-less indefinites.¹⁸

¹⁸This approach predicts the grammaticality of a sentence like (58), as long as the indefinite is interpreted with wide scope.

(58) Every senator kisses girl

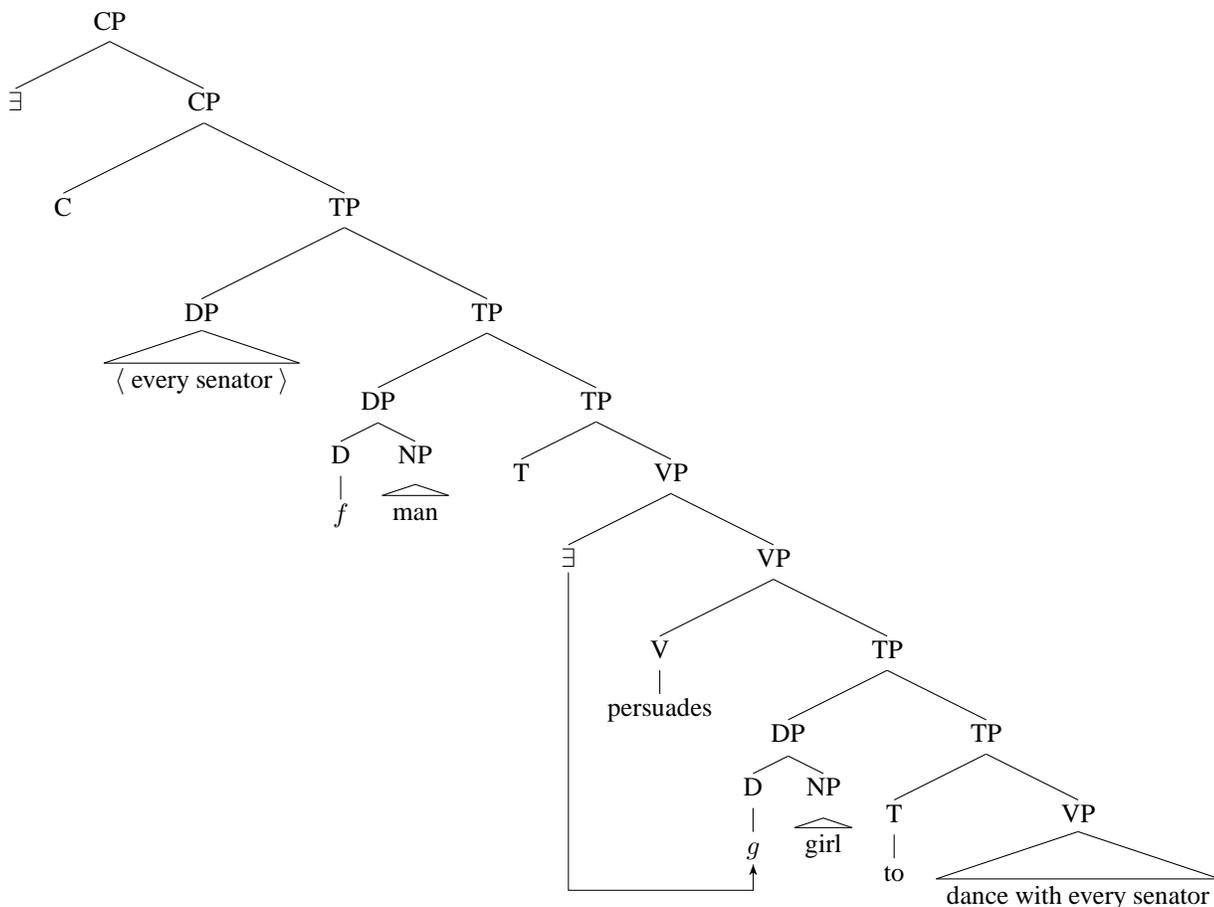
We thereby derive the fact that in *man persuades girl to dance with every senator*, *every senator* appears to be frozen in its scope position. How can we account for re-appearance of scope ambiguity in a headline like (59)?

- (59) Man persuades a girl to dance with every senator
 (*every senator* > *a girl* OK)

In these cases, by hypothesis, *a* in *a girl* is having its pronunciation licensed by a relatively low-placed existential operator – an operator placed in a position in the clause in which Agree is still active. *Every senator* could then QR to a position – say, [Spec, TP] – which is above the existential closure of the choice function but which is still in the region of the clause where Agree is active, as in (60) below.

I think this is an accurate prediction (i.e. that (58) is indeed grammatical, although only on the reading where there is only one particular girl), but have not consulted other speakers or corpora to confirm this intuition.

(60) a.



- b. $\llbracket (60a) \rrbracket = \exists f. \forall x. \text{senator}(x) \rightarrow \exists g. f(\text{man}) \text{ persuaded } g(\text{girl}) \text{ to dance with } x$
 There is a way of picking out men such that for each senator, there is a way of picking out girls such that that man convinced that girl to dance with that senator.

Such a structure gives us the scope expected – *every senator* taking scope over *a girl*. *Every senator* cannot, however, take scope over the subject *man*, as expected; this would entail QR to the CP layer above the position from which the choice function f (picking out men) is being bound, which is impossible.

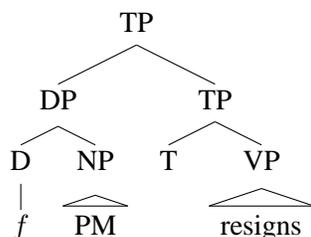
7 Dropped definites

We have seen an explanation for the dropping of indefinite articles. Definite articles, however, also drop in headlines (61) and reduced written register more generally (62).

- (61)
- a. Purnell: I lost faith in \emptyset PM months ago (Weir 2009, originally *Guardian* website 18 July 2009)
 - b. \emptyset Hidden persecution of Falun Gong (ditto)
 - c. Unmask the men who ended \emptyset strike, demand Tories (Mårdh 1980:131, originally *Daily Mirror* 9 May 1974)
 - d. Why \emptyset blast factory faces a public probe (*ibid.*, originally *Daily Mirror* 4 June 1974)
 - e. \emptyset Delivery of Raspberry Pi begins (BBC News website 14 April 2012)
- (62)
- a. Will go to \emptyset gym tomorrow.
 - b. Received credit card statement in \emptyset mail.
 - c. You going to \emptyset party tonight?

In all of the above cases, the article dropped is interpretable as a definite. How does this happen? In these cases, I suggest that a choice function variable is introduced in the DP, as in the indefinite cases. It is simply not bound in the structure. It is left open and is provided with a value by the interpretation function. The structure for a sentence like *PM resigns* (= ‘The Prime Minister resigns’) would be as below, where *g* is the interpretation function.

(63)



(64) $\llbracket(63)\rrbracket^g = \text{resign}(g(f)(\text{primeMinister}))$ (where $g(f)$ is a particular value for the choice function variable f)

In this case, and in the relevant context, there is only one possible Prime Minister, so any choice function will do (any choice function will map the set of prime ministers, a singleton set, onto its one and only member). But it is not necessary to have this sort of ‘strongly unique’ noun phrase (one which would always receive the definite article in standard English) to license a null definite article in reduced written register: as long as the discourse referent has been established, then a null definite article is possible, as can be seen from the examples in (65) ((a) representing headlines, (b) representing diary register).

- (65) a. \emptyset MAN BITES \emptyset DOG
 \emptyset Dog left speechless
- b. Saw \emptyset physics student and \emptyset sociology student at the party. \emptyset Physics student had \emptyset beard.

The second instance of *dog* and *physics student*, respectively, are definites, and may have null articles. Here, we might suppose that the definiteness of the second DP comes about via an anaphoric relation between the choice function variable in the second sentence and the variable in the first sentence, in the same way as pronouns establish anaphoric relations between sentences. Here, for example, is how the calculation of the denotations of the headlines in (65a) might proceed.

- (66) a. $[\exists f, h. [[f \text{ man}] \text{ bites } [h \text{ dog}]]]$. (f, h existentially bound.)
 ‘There is a way of picking out men and a way of picking out dogs such that that man bit that dog.’
- b. $[[k \text{ dog}] \text{ left speechless}]$. (Value of k provided by the assignment function.)
 ‘Using the same choice function as we’ve already established for picking out dogs, the dog thereby picked out was left speechless.’

There is a question here concerning why this choice function is not spelled out as *the*, given the Principle of Full Interpretation. An equivalent way of formulating this question is to ask why null definite articles are impossible in spoken English. If the Principle of Full Interpretation is violable, and if unpronounced choice function variables do not necessarily need a binder the syntax (which might provide the variables with a pronunciation via Agree), then why can’t spoken English contain unpronounced choice function variables (that is, unpronounced definite articles)? I haven’t been able to formulate a complete answer to this question. One proposal might be that, as well as the ban on Agree in the CP layer, another distinguishing characteristic of reduced written register is the violability of the Principle of Full Interpretation. In spoken English, the Principle of Full Interpretation is inviolable, leading to the requirement to provide some sort of spellout to any choice function variable.

We now have two differences between reduced written register and spoken English: (i) the failure to Agree in the CP layer, and (ii) the violability of the Principle of Full Interpretation. These two differences are not in principle linked; we could imagine one existing without the other. I illustrate the possible parametric variations in (67).

(67) A typology of registers

	PFI inviolable	PFI violable
Agree active in CP	Standard English	?
Agree not active in CP	*	Headlinese/diary register

I have marked with a * the cell in the table representing a language in which the Principle of Full Interpretation is inviolable and which would not have Agree in the CP layer. Such a language would appear to be contradictory in its requirements, on the assumptions made here: indefinite DPs, for example, containing unpronounced choice function variables, would require some sort of expression of their indefinite components. In the model conceived of here, this phonological expression would come about via Agree. However, if Agree is not active in the CP layer, then this would entail that anything which one wished to provide a spellout for via Agree from an element in the CP layer would not be able to receive such a spellout. This would violate the Principle of Full Interpretation, leading to a contradictory outcome. I suppose, then, that such a grammar is impossible, and we do not expect to find it attested.

However, we might expect to find the grammar represented by the cell which I have marked with ?. This grammar is one in which the Principle of Full Interpretation is violable, but Agree in the CP layer is still active. So, in this grammar, certain spellouts which rely on the presence of Agree in the CP layer – *wh*-movement, widest-scope indefinites, perhaps pronouns – are possible; however, a choice function variable which can receive an interpretation from the context, but which remains unpronounced, should still be possible.

I argue that this register is in fact attested in writing. Consider the headlines in (68). These are constructed examples, except (68a), as mentioned above taken from Mårdh 1980 and originally from the *Daily Mirror*.

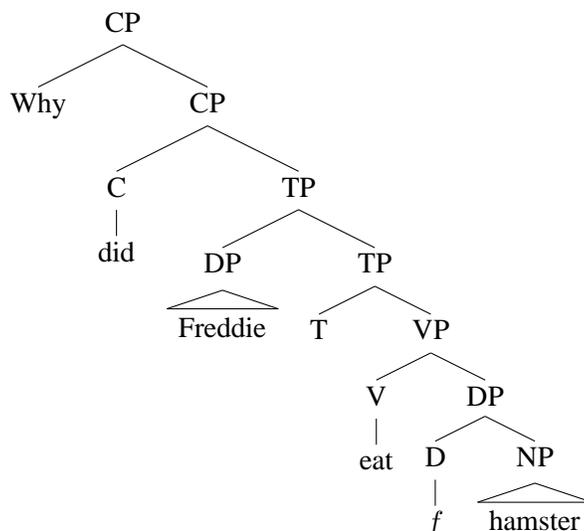
- (68) a. Why \emptyset blast factory faces a public probe
 b. What \emptyset Budget means for you

- c. Why \emptyset man bit \emptyset dog – exclusive
- d. Why I ate \emptyset hamster¹⁹
- e. Why did Freddie eat \emptyset hamster?
- f. Which civil servant was sacked by \emptyset regional director?

These are grammatical headlines. They all exhibit *wh*-movement, however. This suggests that in these headlines, at least, Agree is available in the CP layer; Agree is the force driving the movement of the *wh*-element to the left periphery of the clause. Null articles also appear in these headlines. But, crucially, these articles do not seem to be able to receive an indefinite interpretation. For example, (68c) appears unable to be understood as ‘why I ate *a* hamster’. The most accessible meaning appears to be ‘why I ate the hamster that has been the subject of previous discussion’. This is expected on the present analysis, if we consider the possibility that the grammar generating these sentences is one which allows Agree between the CP layer and lower layers of the clause, but which also allows the Principle of Full Interpretation to be violable. Agree in the CP layer would mean that all indefinite DPs would receive a spellout as *a*. ‘Definite’ DPs, on the other hand, can have a choice function whose interpretation is provided by the assignment function, and which is not required to spell out, due to the suspension of the Principle of Full Interpretation.

¹⁹After the famous headline in the British *Sun*, FREDDIE STARR ATE MY HAMSTER: http://en.wikipedia.org/wiki/Freddie_Starr#.22Freddie_Starr_ate_my_hamster.22

(69)



Further support from this may come from the following contrasts in diary register:

(70) a. \emptyset Found \emptyset phone in \emptyset street today.

b. I found \emptyset phone in \emptyset street today.

(71) a. \emptyset Need my advisor to sign \emptyset form.

b. I need my advisor to sign \emptyset form.²⁰

In the cases where the subject pronoun is dropped (the a-examples), the following dropped articles can be interpreted either as definite or indefinite (ignoring the case of *(the) street* in (70)). The cases where the subject pronouns are not dropped are grammatical as such. However, the dropped articles in these examples seem to only be interpretable on a definite reading. (71b), for example, does not seem to have a reading ‘I need my advisor to sign a form’, but only ‘*the* form’, a form that has been previously discussed. The indefinite reading, by contrast, is accessible in (71a).

²⁰Not everyone agrees about the status of these examples. Some informants have reported that the (b) sentences are simply ungrammatical, and others report that an indefinite reading is possible for the (b) sentences. The judgment I report in the text is mine, and is the majority view of those I have consulted, but clearly further investigation is required here.

Again, this is expected on the analysis proposed here. If subject pronouns depend on their spellout for the presence of Agree in the CP layer (an analysis which I will make an argument for shortly), then the presence of a subject pronoun can be used as a diagnostic; if the subject is present, then Agree in the CP layer is active. Just as in the headline cases, this forces a silent article to receive a definite interpretation. If it were indefinite, it would receive a pronunciation a (from the high \exists operator Agreeing with it). However, a choice function variable which receives an interpretation from the assignment function is still possible. Silent articles are thereby possible, but receive an obligatory definite interpretation.

We can therefore fill out the remaining cell in the table showing the ‘typology’ of registers:

(72) A typology of registers (revised)

	PFI is inviolable	PFI is violable
Agree active in CP	Standard English	Null-definite register
Agree not active in CP	*	‘Heavily reduced’ register

The ‘null-definite’ register is essentially identical to standard English, with the exception that definite articles can be dropped. The ‘heavily reduced’ register is the reduced written register which we are familiar with from e.g. Haegeman 1997, which manifests the dropping not just of definite articles but of indefinite articles and of pronouns, and which rules out movement to the CP layer.

8 A note on pronouns

I have suggested that the failure of the CP layer to Agree may be responsible for the failure to pronounce pronouns, as well as articles. It would certainly be desirable if this were the case, as analyzing pronoun drop was the main motivation for the ‘truncation’ proposals which form the basis for my analysis in the present paper. Constraints of time and space prevent me from presenting a fully fleshed-out analysis of pronoun drop in this paper, but I will sketch one possibility for how this is accomplished.

It may be that subjects, and possibly pronouns in general, are not born with the features that determine their phonological spellout. A pronoun whose denotation is the entity [[Andrew Weir]] can be realized as *I* if I am speaking, *you* if someone is speaking to me, or *he* if I am not present. Such pronouns get their shape from the speech context. Sigurdsson 2004 suggests that there is ‘matching’ of features between pronouns in an utterance, and logophoric operators hosted very high in the clause (in the CP layer). So, for example, in the sentence *You kicked me*, the pronoun *you* gets its pronunciation after undergoing feature matching with a Logophoric Patient (i.e. addressee) operator high in the structure. If this relation is to be modeled with Agree, then if Agree between the CP layer and layers below is blocked in reduced written register, we may explain why subject pronouns fail to spell out in these registers; they do not receive the features they require to receive a spellout, as they do not agree with the high operators which provide such features.

This argument is not complete, and will require further elaboration. Its main drawback is that it does not make a clear distinction between subjects and objects; presumably both types of pronoun would check their features against these high speech-level operators. We should expect both types of pronoun to drop in this case; and while objects can drop in diary dialect, they are not required to. The asymmetry between subjects and objects is also left unexplained: objects may not drop to the exclusion of subjects.

(73) Received my credit card bill in the mail today:

- a. \emptyset Will shred it later.
- b. \emptyset Will shred \emptyset later.
- c. *I will shred \emptyset later.

This remains to be explained on the ‘failure to Agree in CP’ account I have proposed here. I am hopeful that an explanation can be found, perhaps along similar lines to the explanation for the subject-object asymmetry I propose for articles in the present paper. For now, however, I will leave detailed exploration of the subject drop case to future work. I now turn to some other potential avenues for future work.

9 Further work

9.1 In what sense ‘reduced’?

Diaries, text messages, headlines, and other instances of ‘reduced written register’ seem able to ‘code-switch’ between the three cells of the table in (72). An utterance generated by any one of these grammars can be used in ‘diary/Facebook contexts’. Standard (spoken) English, by contrast, only allows the use of the grammar in the cell marked as Standard English.

A tantalizing open question is why this might be. This question is related to the question of how we have intuitions about the ‘reduced register’ at all. It has been reasonably clear from work with consultants on the topic that English speakers do have such intuitions, and they are often quite sharp. Could there be a sense in which the ‘reduced’ cells in the table in (72) are genuinely ‘reduced’? Taking an acquisitional view, might the ‘reduced’ cells represent possible stages of the acquisition of English – possible settings of parameters, say – which a child acquiring English goes through, but which remain available to users of English just in the ‘reduced written register’? Subject drop and article drop are both common features of the speech of children acquiring English (for subject drop, see references already cited; for article drop, see e.g. de Lange 2004), and perhaps it would be fruitful to attempt to take the analysis of reduced written register I propose here over to the child language acquisitional cases.

Taking a typological view, if parameters like the ones I have proposed in this paper do indeed exist, we expect to find spoken human languages which instantiate them. Do we? Languages like Japanese may be plausible candidates for a language corresponding to what I have called the ‘heavily reduced’ register. Japanese, in particular, seems to manifest the constellation of properties which would be expected for such a language: rampant *pro*-drop, no articles, scopal inertia (without overt scrambling), no *wh*-movement or distinct morphological form for *wh*-words (Japanese uses so-called ‘indeterminate pronouns’ to form questions; see e.g. Kratzer & Shimoyama 2002, Kratzer 2005). Detailed investigation of this possibility, however, I leave to further work.

9.2 Scope: really frozen?

The generalization that article-less DPs are obligatorily wide-scope in reduced written register may not be completely secure. Consider the examples in (74) below.²¹

- (74) a. Army posts guard in front of every building
 b. Party mails leaflet to every door
 c. Man gives bone to every dog

In these cases, it seems possible for the universally quantified DPs to take scope over the indefinite article-less DPs, i.e. a different guard for each building, a different leaflet²² for each door, a different bone for every dog.

Why these examples, where what is being embedded is a prepositional phrase, should differ in any way from examples like *Man persuades girl to dance with every senator* (where what is being embedded is a TP) is unclear. One possibility (not obviously compatible with the analysis I put forward here) is

²¹I am grateful to Coppe van Urk for bringing up examples like (74).

²²This is true both on the individual reading of ‘leaflet’ and the kind reading; obviously separate leaflets are sent to each individual door, but it could also be different kinds of leaflet.

that the wide-scope property is in fact a key property of article-less *subjects*. In *man persuades girl to dance with every senator*, the DP *girl* is the subject of *dance*. Even in the examples in (74), the subjects of the clauses seem to be obligatorily wide-scope. There can be different bones in (74c), but it is difficult (in my judgment) to have different men for each dog.

I do not have a complete analysis for these examples. However, I suspect it may not be coincidental that these examples involve double object structures, and moreover, involve structures with a measure of intensionality. If the army posts a guard in front of every building, that does not in fact entail that the guards actually got there; it's possible that the orders were issued but the guards got waylaid on their way. (How to account for this intensionality will not be my concern here, although see Beck & Johnson 2004 for an analysis of intensionality in double object cases.) It is known that intensionality can create 'scope illusions', where quantifiers appear to take wider scope than their surface position would predict; see, for example, Fox & Sauerland 1995 for scope illusions with generic sentences, and Abels & Martí 2010 for discussion of 'split scope' across intensional verbs in German. I have not fully elaborated whether these authors' analyses can extend to the present cases. An indication that this might be the right way of tackling the problem, however, is that (in my judgment) sentences with apparently similar form to those in (74), but in which no intensionality is present, have frozen scope for the universal quantifier:

- (75) Man eats hamster in front of every Cabinet minister
(only has a reading where the same hamster is eaten)

Clearly further work is required to fully handle these cases, however.

9.3 Conclusion

I have proposed an account of article drop in headlines, based on the failure of elements in the CP layer to establish an Agree relation with elements below them. I have argued that this relation is crucial for licensing the pronunciation of these elements; if the relation is not established, then the articles are not pronounced. Furthermore, I have proposed that this account, as a development of the ‘truncation’ account of Rizzi 1994 and Haegeman 2007, may explain facts about ‘reduced written register’ more generally. In general, I hope to have illustrated (following the work of Haegeman and Stowell) that facts about ‘reduced written register’ are not arbitrary, but grammatically based; and that they should be amenable to generative analysis. The account I present here will certainly not be the final word on what that analysis should be.

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