

# Ordering discontinuous $\varphi$ -feature Agree: Verbal *-s* in North Eastern English

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North Eastern English differs from Standard English with respect to agreement: According to the *Northern Subject Rule* (NSR), 3SG agreement marking (*verbal -s*) occurs on verbs in clauses with non-3SG subjects provided that they are not personal pronouns adjacent to the verb. However, data from the *Diachronic Electronic Corpus of Tyneside English* shows that verbal *-s* also does not occur with non-adjacent personal pronouns subjects in contemporary North Eastern English. I argue that verbal *-s* with non-pronominal non-3SG subjects follows from two conceptual assumptions: Firstly, the requirement to order feature-driven elementary operations and secondly, splitting up  $\varphi$ -Agree into two separate operations (i. e. person and number Agree). The difference in agreement between North Eastern English and Standard English stems from the different ordering of features on T. In Standard English, person and number probes are ordered before the structure building feature, which triggers movement. In the North Eastern English order, however, the structure-building feature intervenes between the two probe features. The full DP/pronoun split is explained by different kinds of movement: In the case of a full DP subject movement to Spec/TP bleeds number agreement and verbal *-s* emerges, while pronominal subjects remain in the c-command domain of T because they head-move to T.

## 1 Introduction

This article is concerned with agreement variation in North Eastern English (NEE). In the literature, this phenomenon is often called *Northern Subject Rule* (NSR; see e.g. Pietsch 2005a,b). According to the NSR, verbs can take the 3SG agreement marker *-s* (*verbal -s*)<sup>1</sup> in clauses with non-3SG subjects as shown in (1a). Crucially, this is not possible if the

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<sup>1</sup>If not specified otherwise, I will use this term (i. e. *verbal -s*) to refer to the occurrence of 3SG morphology on verbs in the context of non-3SG subjects.

subject is a personal pronoun as in (1b), except if the pronominal subject is non-adjacent to the verb (1c) and (1d).

- (1) Traditional NSR pattern:
  - a. The cars **drives** fast.
  - b. \*They **drives** fast.
  - c. They really **drives** fast.
  - d. They look cool and **drives** fast.

A definition of the NSR with its conditions given is in (2). This definition follows the terminology in the literature although the PSC is strictly speaking not a rule and, thus, I will use the terms PSC and *adjacency condition* interchangeably.

- (2) Northern Subject Rule (NSR; Childs 2012: 319–320):

The 3SG present tense agreement marker *-s* (verbal *-s*) can occur with non-3SG subjects under the following conditions.

  - a. Type-of-Subject Constraint (TSC):

Verbal *-s* is permitted if the subject is not a personal pronoun.
  - b. Position-of-Subject Constraint (PSC):

Verbal *-s* can occur with personal pronouns as the subject if the subject and verb are non-adjacent.

I propose an analysis which makes use of ordering feature-driven elementary operations.  $\varphi$ -feature Agree is split up into two distinct probe operations (hence, *discontinuous  $\varphi$ -feature Agree*). Variation between NEE and Standard English (StE) agreement arises from the intervention of internal Merge between two instances of Agree (i. e. person  $\pi$  and number  $\#$ ) in the case of NEE. Internal Merge bleeds number agreement as the subject DP moves out of the c-command domain of T before it can value the number feature on T. In post-syntactic morphology the exponent *-s* is inserted. Crucially, personal pronouns are able to remain in the c-command domain of T after Internal Merge as they head-adjoin to T. Therefore, pronominal subjects are able to value the number feature on T resulting in successful number agreement.

The paper is structured as follows: In Section 2, I will illustrate the environments of verbal *-s* in NEE on the basis of a corpus study. Interestingly, the data will show that the adjacency condition in (2b) is no longer productive in contemporary NEE. Section 3 contains the proposal along with crucial theoretical considerations for the analysis of verbal *-s*. In Section 4, I will summarize previous and alternative accounts on verbal *-s* in non-standard varieties of English and compare them to the proposal of Section 3. Lastly, Section 5 concludes the discussion and provides an outlook.

## 2 Data

### 2.1 The corpus

The variety of North Eastern English is spoken in the North East of England comprising the counties Northumberland and Durham, the metropolitan county Tyne and Wear

Table 1: Verbal *-s* with non-3SG subjects

	Adjacent		Non-adjacent		Total	
3PL full DPs	15/977	1.54%	0/84	0%	15/1061	1.41%
Pro. (excl. <i>says</i> )	2/16423	0.01%	0/799	0%	2/17222	0.01%
Pro. and <i>says</i>	59/208	28.37%	0/17	0%	59/225	26.22%
<i>I</i> and <i>says</i>	57/61	93.44%	0/10	0%	57/71	80.28%

(including Gateshead, Newcastle upon Tyne and Sunderland) and parts of North Yorkshire. Empirical evidence comes from the *Newcastle Electronic Corpus of Tyneside English 2* (NECTE2), which is the most recent sub-corpus (2007–2010) of the *Diacronic Electronic Corpus of Tyneside English* (DECTE, Corrigan et al. 2012) and consists of 366,062 tokens from 44 interviews with female and male informants between the ages of 16 and 90. The query results were evaluated manually and instances of verbal *-s* relevant for this study were retrieved.<sup>2</sup>

## 2.2 Corpus data

Table 1 illustrates the frequencies of traditional NSR contexts (i. e. the full DP-pronominal split and the adjacency condition) in the NECTE2 corpus, while Table 2 depicts occurrences of *-s* in NSR-related constructions. The relative frequencies represent the occurrences of *-s* in a particular configuration (i. e. type of subject or syntactic construction) with respect to all instances of this configuration. In the constructions with pronominal subjects, co-occurrences of *I* with *was* were excluded from the count.

Verbal *-s* occurs in clauses with non-3SG full DP subjects and lexical verbs (3a),<sup>3</sup> and with both present tense (3b) as well as past tense *be* (3c). *Be* clearly shows the NSR pattern: Verbal *-s* (i. e. *is* and *was*) occurs in clauses with 3PL full DP subjects, but not with non-(1/)*3SG* pronominal subjects.<sup>4</sup> Verbal *-s* on present or past tense *be* accounts for 14 of the 15 instances of verbal *-s* with full 3PL subjects in main clauses.

(3) Verbal *-s* with full 3PL subjects:

- a. It’s like two of these new skates **weighs** like half of the one I’ve got. [NECTE2]
- b. Their wages **is** out of this world. [NECTE2]
- c. All of our costumes **was** just getting dragged off and we were all fighting and stuff. [NECTE2]

<sup>2</sup>For the purpose of the study, the original NECTE2 files were pre-processed. The corpus files were stripped of XML, chunked, tokenized and annotated with Parts-of-Speech tags using the *Tree Tagger* tool (Schmid 1994, 1995). Subsequently, the tagged corpus files were converted into a database with *Pepper* (Zipser & Romary 2010) in order to make them compatible with the query tool *ANNIS* (Krause & Zeldes 2016).

<sup>3</sup>I assume here that the partitive construction in (3a) is a DP and has the following structure: [<sub>DP</sub> two [<sub>PP</sub> of [<sub>DP</sub> those new skates]]] (see also Stickey 2009 for a discussion).

<sup>4</sup>Past tense *be* is included here because there is no *was/were* levelling in NEE, rather “past tense *be* still preserves a reflex of the NSR in its distribution” (Cole 2008: 103). In the NECTE2 corpus, there are no instances of *you/we was* (0%, *N*=628).

According to the PSC constraint of the traditional NSR, verbal *-s* is not permitted with non-3SG pronominal subjects, except if the pronominal subject is not immediately adjacent to the verb (1c). As Table 1 suggests, non-adjacent pronominal subjects do not co-occur with verbal *-s* in the NECTE2 corpus; some examples are given in (4). This is in line with Cole’s (2008: 94) conclusion that the adjacency condition is no longer relevant in contemporary NEE. Studies by Childs (2012) and Buchstaller et al. (2013) also support the claim that the PSC is not productive in contemporary Northern English and Scottish varieties.

- (4) Full agreement with non-adjacent 3PL pronominal subjects:
- a. They really **love** their beer. [NECTE2]
  - b. You just don’t understand how normal they actually **are**. [NECTE2]
  - c. They always **think** that I’m the same. [NECTE2]

However, something must be said about the cases of non-3SG pronouns triggering *-s* on adjacent verbs, which is not predicted by the NSR conditions. Interestingly, 59 of the 61 instances of such configurations involve the lexical verb *says* (5), while the only other two instances are also introducing reported speech (6).

- (5) Non-3SG pronominal subjects and *says*:
- a. I **says** “you know that I’m a Geordie.” [NECTE2]
  - b. I thought playing the likes of Chelsea and Man U and them I **says** “no chance.” [NECTE2]
  - c. But as you **says** a new council took over didn’t they? [NECTE2]
  - d. They **says** “can you not swim?” [NECTE2]
- (6) 3PL pronominal subjects and *-s*:
- a. They **was** like “you’re not allowed to go on any school trips.” [NECTE2]
  - b. Then they **was** like “yeah, (NAME), you cannae stay.”<sup>5</sup> [NECTE2]

According to Cole (2008: 101), examples such as in (5) are unrelated to the NSR since they are part of a more widespread phenomenon of *-s* marking the historic present. The high relative frequency of *I says* (57/61) also hints at a fixed pattern (cf. Pietsch 2005b: 98). Indeed, verbal *-s* seems to be correlated with narrative contexts or habitual aspect in various contemporary English dialects, even those historically not linked to the NSR pattern (cf. Godfrey & Tagliamonte 1999 and references therein). Moreover, the narrative *-s* pattern is also attested in typical NSR dialects (Pietsch 2005b: 137–138). Given these facts and given that narrative *-s* does not follow the traditional NSR template (i.e. the split between full DPs and verb-adjacent pronouns), I will not consider it in the analysis in Section 3.3. However, a brief discussion of how *-s* could arise even with adjacent pronouns is included in fn. 22.

Turning to the constructions in Table 2, verbal *-s* is possible in relative clauses that modify a plural DP (7).

<sup>5</sup>*Cannae* is a dialectal form for ‘cannot’. Note also that names are redacted in the corpus.

Table 2: Verbal *-s* in other constructions

		Total
Relative clauses	5/157	3.18%
Coordinated verbs	1/323	0.31%
Expletives (full verb)	50/182	27.47%
(contracted)	104/182	57.14%

(7) Verbal *-s* in relative clauses:

- a. And these clubs what’s paying this well they must be making the money to pay it out. [NECTE2]
- b. There was loads of words that **was** said. [NECTE2]
- c. People who know anything about Durham are probably the ex-students who’s went there. [NECTE2]
- d. ...all them that **was** in that video with that young sixteen-year-old bird. [NECTE2]

A further interesting case is verbal *-s* with coordinated verbs, whereby the first verb shows full agreement with the subject, while the second verb shows verbal *-s* as illustrated in (8). However, the only instance of this construction in the corpus is again introducing reported speech.

(8) Verbal *-s* with coordinated verbs:

- You **put** this facade on on the outside and **thinks** “he’s a fit looking guy.” [NECTE2]

Further cases of verbal *-s* are exemplified in (9) where expletive *there* together with a plural associate (e.g. *mud rivers* in (9a)) seemingly trigger singular agreement. However, Cole (2008: 105) classifies this as a “default singular system” which she claims to be a part of a wider non-standard pattern that is also present in varieties that do not show NSR-type agreement variation. Moreover, Wilson & Henry (1998: 11–12) argue that verbal *-s* and singular morphology with existential *there* are independent phenomena in Belfast English (given that the former seems to be disappearing while the latter is spreading). Nevertheless, syntactically, these examples seem to pattern with the (proper) NSR in the sense that the involvement of non-3SG full DPs (in this case, the plural associate) can trigger verbal *-s* on the main verb.

(9) Verbal *-s* with expletive *there*:

- a. There **was** like mud rivers and stuff. [NECTE2]
- b. There’s always people in Whitley Bay like going out. [NECTE2]

To summarise, the corpus data suggest that verbal *-s* can be triggered by non-pronominal 3PL subjects in contemporary NEE. An analysis of the NSR must primarily focus on the apparent split between full DP subjects and pronominal subjects in their ability to trigger verbal *-s*. Moreover, constructions such as verbal *-s* in relative clauses and with expletive *there* should be accounted for.

### 3 Discontinuous Agree

In the following, I will make some assumptions about the syntax and morphology for the analysis of verbal *-s* in North Eastern English (Section 3.1). In the ensuing Section 3.2, I will propose that verbal *-s* is the result of discontinuous Agree. In NEE, internal Merge intervenes between two instances of Agree. While full DP subjects move out of the c-command domain of T to Spec/TP (resulting in unsuccessful number probing and verbal *-s*), pronominal subjects remain in the c-command domain of T and therefore full agreement is established. In Section 3.3 this proposal is applied to the data. Finally, Section 3.4 extends the analysis to capture varieties with an intact adjacency condition, while Section 3.5 briefly discusses an alternative feature ordering.

#### 3.1 Assumptions

##### 3.1.1 Syntactic operations

Elementary syntactic operations are feature-driven (Chomsky 2000, 2001). Merge cyclically builds up syntactic structure and is triggered by structure-building features [ $\bullet F \bullet$ ]. Syntactic movement can be translated into internal Merge: The merged object is already part of the derivation but is displaced and merged again at a higher position in the structure. The second operation is Agree, which encodes arguments by case assignment and/or agreement. It is triggered by unvalued probing features [ $*F : \square *$ ]<sup>6</sup> and operates under c-command. Agree values the probe feature according to the feature value on the respective goal. A standard definition of Agree along the lines of Chomsky (2001) is given in (10).

- (10) Agree:  
A probe  $\alpha$  can agree with a goal  $\beta$  iff (a) to (d) hold.
- $\alpha$  is unvalued and seeks the value of (a feature on)  $\beta$
  - $\alpha$  c-commands  $\beta$
  - $\beta$  is the closest goal to  $\alpha$
  - $\beta$  is associated with an unvalued or matching case feature<sup>7</sup>
- (11) Closeness (Heck & Richards 2010: 690):  
Goal  $\beta$  is closer to probe  $\alpha$  than goal  $\gamma$  if (a) and (b) hold.
- $\alpha$  c-commands both  $\beta$  and  $\gamma$
  - $\beta$  c-commands  $\gamma$  and  $\gamma$  does not c-command  $\beta$

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<sup>6</sup>In the remainder of this paper, the notation of unvalued probing features will be abbreviated to [ $*F*$ ], while valued features will be displayed as [ $F : \pm\alpha$ ].

<sup>7</sup>The so-called activity condition is adapted to cases where a syntactic node hosts several unvalued probes that are sequentially discharged. This formulation ensures that more than one probe can be valued by features on the same goal. At the same time, the activity condition prevents agreement between T and the internal DP if it raises to Spec/vP, because  $DP_{Int}$  would have already received case from v.

Furthermore, given that syntactic operations are able to show transparent interaction, they have to apply sequentially instead of simultaneously. As both Merge and Agree can be triggered on the same head, an order of the operations is required. This is accomplished by ordering the (structure-building and probing) features on a head via language-specific parameters (Heck & Müller 2007; Müller 2009; Georgi 2013, 2014).

Since  $\varphi$ -features are further subdivided into a person  $[\pi]$  and a number feature  $[\#]$ ,<sup>8</sup> which can be valued independently from each other, person and number each require a distinct probing operation (see e.g. Laka 1993; Taraldsen 1995; Béjar 2003; Béjar & Rezac 2003; Sigurðsson 2004; Sigurðsson & Holmberg 2008; Preminger 2014). In other words, if a head H has two probing features  $[\ast\pi\ast]$  and  $[\ast\#\ast]$ ,<sup>9</sup> two separate Agree operations are triggered on H instead of a single instance of uniform  $\varphi$ -Agree. Again, the operations apply sequentially, with  $[\ast\pi\ast]$  being universally ordered before  $[\ast\#\ast]$  (c.f. Béjar & Rezac 2003; Coon & Keine 2019).

### 3.1.2 Pronominal head movement

Additionally, an assumption about (English) personal pronouns has to be made: On the basis of bare phrase structure (Chomsky 1995), personal pronouns are taken to be minimal and maximal at the same time as they do not project any further (hence, the notation  $D^{\min/\max}$ ; cf. Muysken & van Riemsdijk 1986 and van Riemsdijk 1998).<sup>10</sup> Thus, personal pronouns should be able to show characteristics of both, phrases and heads, that is they should be able to adjoin directly to heads under head movement (see also Déprez 1994; in an LFG analysis by Börjars & Chapman 1998, pronominal clitics are adjoined to the verb). Head movement of pronominal subjects is carried out because T is the closest landing spot for  $D^{\min/\max}$ . As a result, the personal pronoun is still under c-command of T after movement.<sup>11</sup>

A obvious problem with such an analysis arises in the face of T-to-C movement with subject-auxiliary as in inversion (12). Clearly, only the auxiliary moves to C, while the personal pronoun is left in the T domain:

- (12) a.  $[_C \text{ Would}]$  they know better?  
 b.  $\ast [_C \text{ They would}]$  know better?

If we allow for head movement of  $D^{\min/\max}$  to T, the lower T (i.e. the host of the complex head) has to excorporate and move to C. A head movement account that generally allows

<sup>8</sup>This is a simplification as well, as  $[\text{person}]$  is further subdivided into  $[\pm\text{author}]$  and  $[\pm\text{participant}]$ , with  $[\text{+3}]$  equalling  $[-\text{author}, -\text{participant}]$  (Nevins 2007). In the following number is taken to be  $[\pm\text{plural}]$ . Since gender is irrelevant for English verbal inflection and agreement, it is disregarded here.

<sup>9</sup>This is a departure from Sigurðsson & Holmberg (2008) and Preminger (2014), where  $\pi$  and  $\#$  are separate probing heads.

<sup>10</sup>A somewhat related idea comes from Wiltschko (1998), who assumes German personal pronouns to be the spell-out of  $\varphi$ -features (AgrD) without any internal structure.

<sup>11</sup>I assume a standard version of c-command (cf. Reinhart 1983; Chomsky 1986), where X c-commands Y iff X does not include Y, Y does not include X and every category that includes X also includes Y. A category X includes a different category Y only if every segment of X dominates Y. This ensures that after head movement  $D^{\min/\max}$  can c-command out of the complex T head to bind its trace.

excorporation comes from Roberts (2010a). However, while the incorporee is free to successively “pass through” complex heads, excorporation of the host (or projecting head) is only possible under pied-piping. This would generate the ungrammatical (12b). According to this account, the highest instance of T in a structure [T [D<sup>min/max</sup> T]] is attracted because of the A-over-A Principle (cf. Chomsky 1964a,b, 1973; Bresnan 1976) in (13). In a strict interpretation, A is taken to be a category with the result that it is always the highest instance of a category that is subject to some syntactic operation.

(13) A-over-A Principle (Chomsky 1973: 235):

If a transformation applies to a structure of the form  $[\alpha \dots [A \dots [A \dots] \dots] \dots]$ , where  $\alpha$  is a cyclic node, then it must be so interpreted as to apply to the higher phrase of the type A.

A closer look at the A-over-A Principle reveals that there are examples where the lower instance of a category is dislocated, such as DP extraction out of a DP (cf. Ross 1967). This seemingly violates a strict interpretation of the A-over-A Principle. However, there is an alternative interpretation of the A-over-A Principle already suggested by Chomsky (1973) and later adopted by Bresnan (1976): The A-over-A Principle can be viewed as prohibiting dislocation of a item that is not the most inclusive one which fits the structural description of the operation. In other words a syntactic object  $X_2$  can be moved even if it is dominated by a syntactic object  $X_1$  of the same category as long as the syntactic operation cannot apply to  $X_1$ .

Returning to T-to-C movement after pronominal head movement, we can say that excorporation of the lower T in a structure [T [D<sup>min/max</sup> T]] is not prohibited by the A-over-A Principle because the higher T does not fit the structural description of the attracting head C. T-to-C movement cannot apply to a complex head with an incorporated D.<sup>12</sup> This derives the grammatically correct sentence (12a) with subject-auxiliary inversion.

### 3.1.3 Morphology

I assume post-syntactic Distributed Morphology: Feature bundles are built up and valued in syntax, while morphological exponents are inserted post-syntactically. Crucially, the Subset Principle (Halle 1997) is modified and re-formulated as in (14) so that the most specific exponent with a non-conflicting feature value is inserted into a terminal node.

(14) Subset Principle:

A vocabulary item  $V$  is chosen for a syntactic context  $S$  iff (a) and (b) hold.

<sup>12</sup>It seems to be a fact that verb/auxiliary movement in English and German affects the smallest possible category. This is true for T-to-C movement, as well as German V2 movement of verbs with incorporated prepositions, where movement applies to the smaller V category and not to complex head:

- (i) a. weil niemand das Laub aufsammelt  
because nobody the leaves up-picks
- b. Niemand sammelt<sub>1</sub> das Laub auf t<sub>1</sub>.  
nobody picks the leaves up
- c. \*Niemand aufsammelt das Laub.



- a. Compatibility:  
For all features of  $V$  there is a matching feature in  $S$  without a conflicting feature value.
  - b.  $V$  is the most specific vocabulary item among those that satisfy (14a).
- (15) Specificity:  
A vocabulary item  $V_i$  is more specific than an vocabulary item  $V_j$  iff it matches more features of the syntactic context  $S$  than  $V_j$ .

Although a departure from Halle’s (1997) original, the formulation of the Subset Principle in (14a) still ensures compatibility with impoverishment. Suppose a VI specified as  $V \leftrightarrow [+a, +b]$  and the following possible syntactic contexts:

- (16) Hypothetical syntactic contexts:
- a.  $S_1[+a, +b]$
  - b.  $S_2[+a, -b]$
  - c.  $S_3[+a]$
  - d.  $S_4[+a, b: \square]$

Context  $S_1$  is fully specified and bears matching features for the features on  $V$ , thus  $V$  can be inserted. Context  $S_2$ , on the other hand, has a conflicting value on feature  $b$ , therefore,  $V$  cannot be inserted. Likewise,  $V$  cannot be inserted into context  $S_3$ , as feature  $b$  is deleted by impoverishment (i. e. there is no matching feature  $b$  in  $S_3$ ). Crucially, however,  $S_4$  has no value for  $b$ , while the feature is still present in the context, thus,  $V$  can be inserted. In other words: The feature has to be present in the context, but it can be unvalued. As will become clear in the analysis in Section 3.3.2 below,  $S_4$  is the relevant context for the NSR pattern.

Preminger (2014) argues that a probe can be left unvalued without causing the derivation to crash. In contrast to Preminger’s assumptions about Kichean, NEE probes are, crucially, not relativised (i. e. they do not have an expected value). This allows the insertion of a specific exponent instead of falling back on a “default” option if a probe is left unvalued because Agree cannot apply.

The VIs of English verbal inflection on present-tense regular verbs are depicted in (17). 3SG exponent  $-s$  is specified for  $[+3, -pl]$ , while  $\emptyset$  is the elsewhere case (see Halle & Marantz 1993).

- (17) English present tense Vocabulary Items:
- |              |                   |             |                  |
|--------------|-------------------|-------------|------------------|
| $-s$         | $\leftrightarrow$ | $[+3, -pl]$ | <i>3sg pres</i>  |
| $-\emptyset$ | $\leftrightarrow$ | $[\ ]$      | <i>elsewhere</i> |

Consider the formulation of the Subset Principle: A terminal node with the person feature valued as  $[+3]$  and the number feature not valued ( $[ \# : \square ]$ ) has  $-s$  as the most specific VI, as the value of the number feature does not conflict. If the terminal node is specified for  $[+3, +pl]$ , the elsewhere form  $-\emptyset$  is inserted.

### 3.2 Feature ordering on T in StE and NEE

The current proposal draws on ordering the features on T, which in turn decide the order of application of elementary operations. While in the StE ordering, person and number

Agree (i. e. full agreement) happen before merging the subject DP into the specifier of T (18a), the NEE ordering in (18b) places one Agree operation before and another one after (internal) Merge, respectively (hence, discontinuous  $\varphi$ -feature Agree).

(18) a. Ordering of features on T in StE:

$[\ast\pi\ast] \succ [\ast\#\ast] \succ [\bullet D \bullet]$

b. Ordering of features on T in NEE:

$[\ast\pi\ast] \succ [\bullet D \bullet] \succ [\ast\#\ast]$

In the case of the NEE ordering, movement of a (plural) full DP subject to Spec/TP bleeds  $\#$ -Agree, leaving the number feature on T unvalued. After post-syntactic vocabulary insertion verbal *-s* arises. Given the StE ordering, however, T is able to Agree with the DP in number before the subject moves into Spec/TP. Thus, agreement variation between StE and NEE is due to the ordering of features triggering syntactic operations and is, in consequence, determined by the syntax and not a morphological coincidence. The existence of a variety that exhibits verbal *-s* is expected given the split-up of  $\varphi$ -Agree and the need to determine a sequence of application of elementary operations.

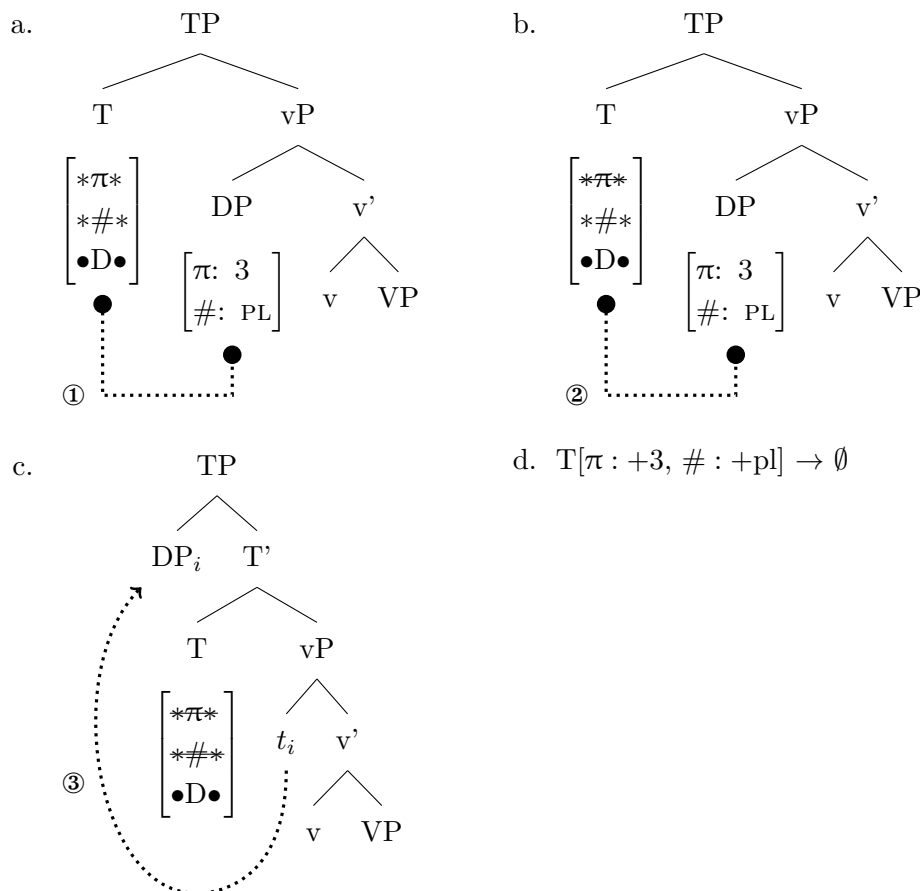
Variability between verbal *-s* and canonical agreement in the NECTE2 data can be explained by the possibility of both orderings for NEE speakers, whereby the standard ordering (18a) is becoming increasingly prevalent (see also Cole 2008 for diachronic data on verbal *-s* in NEE). Thus, a construction of two coordinated TPs (with and without verbal *-s*) such as *some do and some doesn't* (Pietsch 2005b: 178) involves code-switching between the orderings, rather than two different instances of T in a single grammar.

### 3.3 Analysis

#### 3.3.1 Standard English derivation

Given the StE ordering of features on T (18a) with  $\pi$ - and  $\#$ -Agree applying in immediate succession, the derivation of (canonical) StE agreement in clauses with a non-pronominal 3PL subject is unproblematic. First, T probes into its c-command domain for  $[\ast\pi\ast]$  and finds the subject DP; the feature is valued as  $[+3]$  via  $\pi$ -Agree (19a). Secondly, T probes for  $[\ast\#\ast]$  under c-command and values this feature as  $[+pl]$  after undergoing  $\#$ -Agree with the subject DP (19b). In a third step (19c), the subject DP moves into Spec/TP (internal Merge) and satisfies the  $[\bullet D \bullet]$ -feature on T (i. e. the EPP feature). Given that both Agree operations are successful, the elsewhere exponent  $-\emptyset$  is inserted into T during morphology (19d).

(19) Derivation of canonical agreement in StE:



### 3.3.2 North Eastern English derivations

In contrast to that, clauses with verbal *-s* and a 3PL full-DP subject, such as (3a) (repeated here as (20)), are derived as follows.

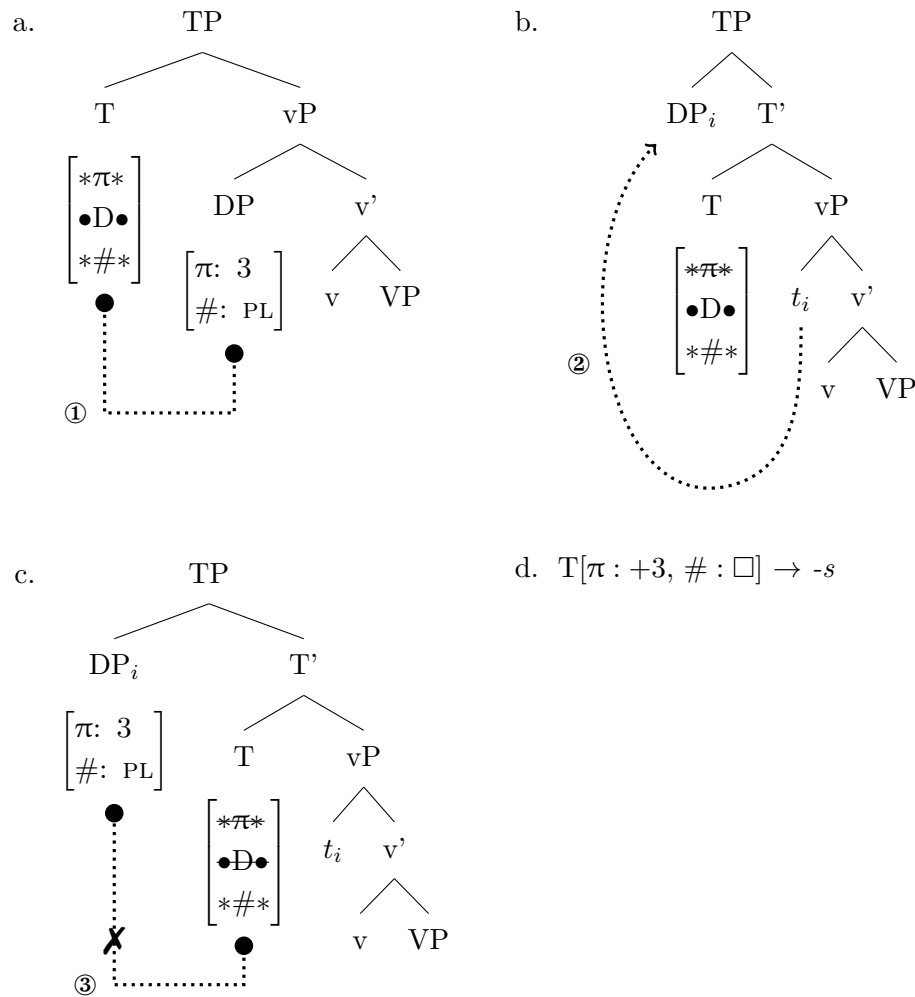
(20) (=3a)

Two of these new skates weighs half of the one I've got. [NECTE2]

In NEE, the structure building feature [•D•] is ordered before the number probe feature [\*#\*] (18b). After T probes for person and ensuing  $\pi$ -Agree with the subject DP under c-command values T's [\*π\*]-feature as [+3] (21a), the DP moves into the specifier of TP satisfying the [•D•]-feature on T (21b). Subsequently, T probes for its number feature [\*#\*], but cannot find the subject DP as it previously moved out of T's c-command domain. Consequently, #-Agree is not successful (21c), leaving the (not relativised) [\*#\*]-feature on T unvalued. Thus, movement bleeds number agreement. Given the modification of the Subset Principle, verbal *-s* can be inserted into the terminal node T

in post-syntactic morphology, as T has no value for its number feature (21d).<sup>13</sup>

(21) Derivation of verbal *-s* in NEE:



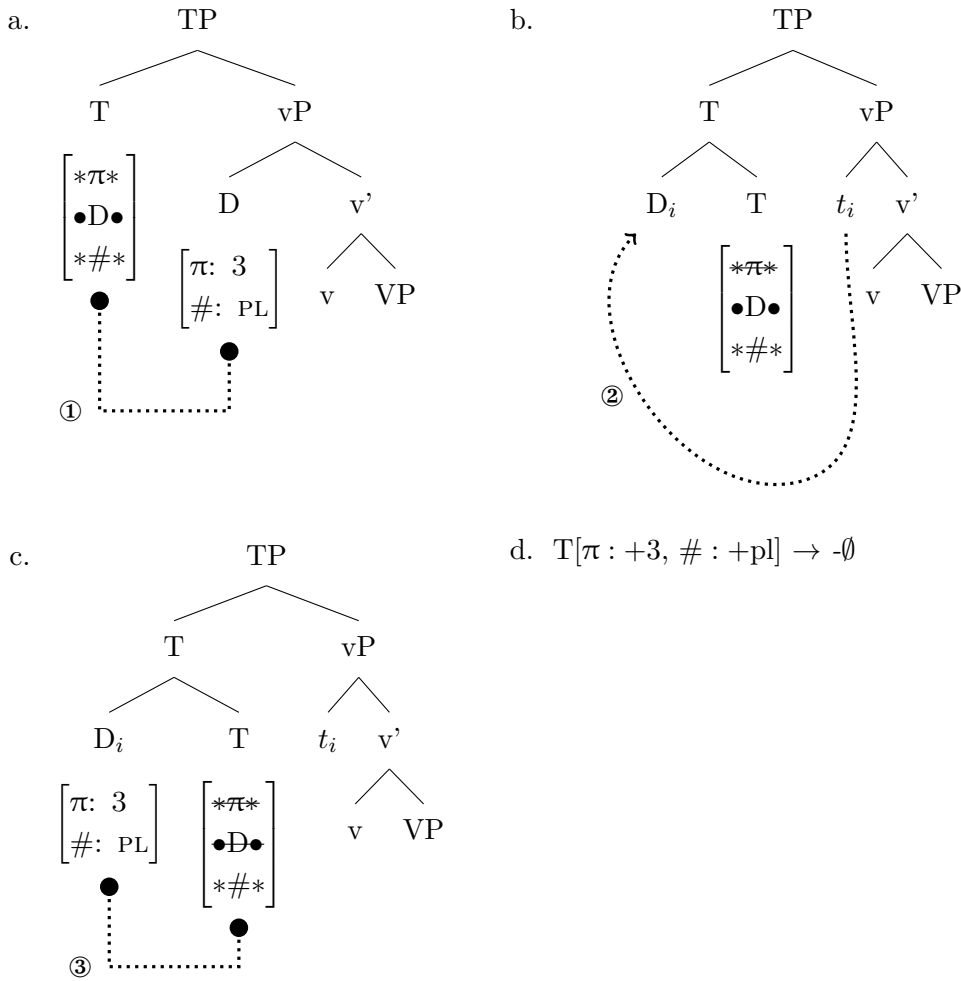
On the other hand, in clauses with non-3SG pronominal subjects, such as (22), verbal *-s* is not permitted according to the NSR.

<sup>13</sup>Although singular agreement in clauses with *there* and a plural associate (as in *there is mud rivers*) is argued not to be part of the NSR pattern (cf. Wilson & Henry 1998; Cole 2008), it still can be accounted for by the same analysis: Under the assumption that the  $\varphi$ -defective expletive is first merged below T (e.g. in a Small Clause, PrP or Pred<sub>EX</sub>P) alongside a lower nominal expression, *there* acquires its  $\varphi$ -values via Agree with the nominal (cf. Williams 1994; Hazout 2004; Hartmann 2008). After T is merged, *there* becomes a goal for operations triggered by features on T. Consequently, verbal *-s* arises under the NEE ordering as *there* is moved out of T's c-command domain before number probing. Crucially,  $\#$ -Agree is not possible between T and the associate if one assumes that Agree is constraint by the Phase Impenetrability Condition (Chomsky 2001), which prevents the associate from becoming a goal to operations on T because the associate does not raise to the phase edge.

(22) They weigh like half of the one I've got.

As with the verbal *-s* derivation, T probes for person and triggers  $\pi$ -Agree with the subject under c-command again valuing its [ $*\pi*$ ]-feature as [+3] (23a). In the next step, the assumptions about head movement of pronouns as  $D^{\min/\max}$  categories (outlined in Section 3.1.2) come into play: The pronoun adjoins to T via head movement satisfying the [ $\bullet D \bullet$ ]-feature on T, because the head of T is its closest landing site (23b).<sup>14</sup> Diverging from the previous derivation in (21), the subject pronoun is still in the c-command domain of T. Thus, #-probing and subsequent Agree is still possible, valuing the [ $*\#*$ ]-feature on T as [+pl] (23c). In post-syntactic morphology, the elsewhere form  $-\emptyset$  is inserted into T (23d).

(23) Derivation with pronominal subjects in NEE:



<sup>14</sup>Since D is not a complement of T, this movement step would technically violate the Head Movement Constraint (HMC; Travis 1984). However, this is unproblematic as D is still the nearest head to T and thus, minimality is observed. Moreover, e.g. Rivero (1994) and Roberts (1994, 2010a) provide approaches to head movement without incorporating the HMC at all.

### 3.3.3 Verbal -s with *be*

The same analysis as in (21) can also be applied to cases of verbal -s with *be* in present tense as in (3b), repeated here as (24a) and in past tense as in (3c), repeated here as (24b).

- (24) (=3b,c)
- a. Their wages **is** out of this world. [NECTE2]
- b. All of our costumes **was** just getting dragged off and we were all fighting and stuff. [NECTE2]

After successful  $\pi$ -Agree and failed  $\#$ -Agree of T with a 3PL subject DP, T is valued as [ $\pi$  : +3,  $\#$  :  $\square$ ] in both present and past tense clauses with *be*. Since the [ $*\#\#$ ]-feature value is not conflicting, the exponent *is* is inserted in present tense clauses as (24a), while *was* is inserted in the past tense case (24b). On the other hand,  $\#$ -Agree of T with a pronominal non-3SG subject, such as in the second clause of (24b) (*we were . . .*), is successful as the pronoun is still within the c-command domain of T after internal Merge. Thus, T receives a value for its [ $*\#\#$ ]-feature and canonical agreement morphology can arise after vocabulary insertion. The vocabulary entries of English present and past tense *be* are depicted in (25) and (26), respectively.<sup>15</sup>

(25) English present tense *be* Vocabulary Items:

is	$\leftrightarrow$	[+3, -pl]	<i>3sg pres</i>
am	$\leftrightarrow$	[+1, -pl]	<i>1sg pres</i>
are	$\leftrightarrow$	[ ]	<i>elsewhere</i>

(26) English past tense *be* Vocabulary Items:

was	$\leftrightarrow$	[-2, -pl]	<i>1/3sg past</i>
were	$\leftrightarrow$	[ ]	<i>elsewhere</i>

In addition, this system also captures the fact that NEE does not exhibit *was/were* variation (i. e. the variable occurrence of *was* with 1PL, 2SG and 2PL but crucially not with 3PL subjects in some varieties of English; c.f. Adger 2006; Adger & Smith 2010) as the pronominal subjects are still in the c-command domain of T after internal Merge and thus available for  $\#$ -probing.

### 3.3.4 Verbal -s in relative clauses

The proposal extends naturally to instances of verbal -s in relative clauses with an external plural DP as in (7) (repeated here as (27)) under the assumption that the head

<sup>15</sup>The VIs in (25) and (26) seem to predict that complex 1PL subjects would trigger *be* to spell out as *am* and *was*, respectively. There is, however, only limited data of complex pronoun-noun subjects in the NECTE2 corpus, all with canonical agreement (n=2). Moreover, impoverishment rules could be put into effect to ensure that *we linguists are/were* arises even with the NEE ordering:

- (ii) a. +1  $\rightarrow \emptyset$  / T[#: $\square$ ,  $\_$ ]  
 b. -2  $\rightarrow \emptyset$  / T[+1,  $\#\square$ ,  $\_$ ]

noun is first merged inside the relative clause and raises into an external position (so-called *head raising*; see also Kayne 1994; Bianchi 2000).

- (27) (=7)  
 And these clubs what's paying this well they must be making the money to pay it out. [NECTE2]

As the head noun is generated inside the relative clause, out of which it moves during syntax, local relations and thus agreement can be established. To put it differently: If an external nominal expression is generated inside the CP, it is linked to CP-internal positions. Additionally, the head noun moves inside of the DP into the specifier position (Alexiadou et al. 2000). The respective structure of such an expression is given in (28).<sup>16</sup>

- (28) [DP these [CP [DP [NP clubs]<sub>k</sub> [DP what  $t_k$ ]]<sub>i</sub> [TP is [<sub>vP</sub>  $t_i$  paying this well]]]]

Following the head raising account, the analysis of verbal *-s* in relative clauses is the same as for the regular case in (21): Given the ordering of features on T (i. e. [ $*\pi*$ ]  $\succ$  [ $\bullet D \bullet$ ]  $\succ$  [ $*\#*$ ]), the head noun first agrees with T for person before it moves out of T's c-command domain. The subsequent number probing is unsuccessful, leaving the number value on T empty. This results in the insertion of exponent *-s* in post-syntactic morphology.<sup>17</sup>

### 3.4 Adjacency condition

So far I have shown that ordering Merge and the two Agree operations together with a head-movement account of pronoun movement derives the basic pattern of the Northern Subject Rule in contemporary North Eastern English, namely the split between verbal *-s* triggered by 3PL full DP subjects and canonical agreement triggered by pronominal subjects. Moreover, the analysis can be extended to verbal *-s* with expletive *there* and verbal *-s* in relative clauses.

However, in historical NSR varieties, this basic pattern is complicated by an additional adjacency condition (i. e. the Position-of-Subject Constraint in (2b)), according to which

<sup>16</sup>Bianchi (2000) proposes that only the nominal moves to Spec/CP. The relative DP is raised to the specifier of a functional projection below C (here XP) followed by extraction of the NP into Spec/CP:

- (iii) [DP these [CP [NP clubs]<sub>k</sub> [C [XP [DP what  $t_k$ ]]<sub>i</sub> [X [TP is [<sub>vP</sub>  $t_i$  paying this well ]]]]]]]

<sup>17</sup>An interesting issue arises regarding relative clauses that attach to personal pronouns, e.g. in clefts. Assuming that clefts have the same structure as relative clauses (except for that CP is the complement of *be* instead of D; Kayne 1994: 153), their derivation should parallel the head raising analysis of relative clauses. As a consequence, verbal *-s* should arise with 3PL personal pronouns because  $\#$ -Agree is blocked by the movement of the complex DP. This predicts the forms in (iv). Note, however, that there are no instances of verbal *-s* in clefts (or relative clauses in general) with 3PL pronouns in the NECTE2 corpus ( $N=0$ ), which could be due to the rarity of the phenomenon.

- (iv) Clefts with personal pronouns and NEE ordering:

- a. It is you who **are** mistaken!
- b. \*It is you who **is** mistaken!
- c. \*It is they who **are** mistaken!
- d. It is they who **is** mistaken!

verbal *-s* can co-occur with non-3SG pronouns if they are not adjacent to the verb. Examples of PSC-obeying constructions are given in (29) and (30).<sup>18</sup> Although, the PSC is argued to not operate in contemporary NSR varieties (cf. Section 2.2 as well as Cole 2008; Childs 2012; Buchstaller et al. 2013), I will discuss these examples briefly in what follows.

- (29) Traditional NSR pattern with PSC (Childs 2012: 320):
- a. They peel them and **boils** them. [SED]
  - b. They never **sleeps** inside doors.
- (30) Traditional NSR pattern with PSC (Pietsch 2005b: 9, 174):
- a. They gang and never **speaks**. [SED]
  - b. You never **was** up that Fivemiletown Road? [NITCS]

The examples in (29) and (30) can be grouped into two different environments that seem to allow verbal *-s*: Sentences with coordinated verbs whereby the second verb shows verbal *-s* (29a, 30a) and adverb intervention between a pronominal subject and the verb (29b, 30b). Differentiating between two different PSC environments reflects the fact that they can occur independently from each other in different varieties. According to Pietsch (2005a), verbal *-s* with adverb intervention is only found in older varieties, while verbal *-s* with coordinated verbs is typical in conservative varieties. In (31), we see that coordination can license verbal *-s* while adverb intervention (*you just cut*) does not trigger verbal *-s*.

- (31) Verbal *-s* with coordination (Pietsch 2005a: 145):
- And then you just **cut** down, and **makes** the shape of the turf. [NITCS]

Concerning the adjacency condition there are consequently (at least) three different non-standard varieties: Those with verbal *-s* with adverb intervention and coordination (i.e. the oldest varieties), those with verbal *-s* with coordination but without adverb intervention (i.e. modern conservative varieties, according to Pietsch 2005a,b) and those without the adjacency condition altogether (i.e. contemporary NEE). I take this as an argument against a unifying analysis of sentences like (29a, 30a) and (29b, 30b) only on the basis of the surface configuration of the pronominal subject being non-adjacent to the verb.

The first group of PSC-observing environments comprises coordination constructions such as (29a) and (30a). For the sentence in (29a), I assume a structure of coordinated TPs (rather than vPs), as I take the distinct inflections ( $-\emptyset$  on the first and the *-s* on the second verb) as indicators for the presence of two separate T projections:<sup>19</sup>

<sup>18</sup>Indicated material in these examples stems from the following corpora: *Northern Ireland Transcribed Corpus of Speech* (NITCS; Kirk 1991) with data collected from rural Northern Irish English speakers in the 1970s and *Survey of English Dialects* (SED; Orton & Halliday 1963) with data collected from rural speakers in the 1950s.

<sup>19</sup>I follow Munn (1987); Zoerner (1995); Weisser (2015), i.a. and assume that coordination structures are asymmetric: The  $\mathcal{E}$ -head takes one conjunct as its specifier and the other as its complement. In



(32) [<sub>EP</sub> [<sub>TP</sub> They peel them ] [<sub>EP</sub> [<sub>EP</sub> and ] [<sub>TP</sub> *ec* boils them ]]]

Furthermore, the subject of the lower TP is an empty category (cf. Haegeman 1997; Haegeman & Ihsane 1999 for a discussion on the nature of null subjects in English), which is – in contrast to a  $D^{\min/\max}$  pronoun – not able to head-adjoin to T, but rather moves directly into Spec/TP. Thus, full agreement is not possible, as Merge again bleeds #-Agree.

The treatment of examples (29b) and (30b) where an adverb intervenes between the pronominal subject and a lexical verb or auxiliary, respectively is not as straightforward.<sup>20</sup> Given the proposal in Section 3.2, verbal *-s* arises only if the subject moves to Spec/TP and #-Agree is bled. This means that the intervening adverb has to prevent the pronominal subject from being in a position where it is c-commanded by T at the point of #-Agree.

A conceivable analysis is based on ordering syntactic operations and their resulting interactions. If the adjacency effect is indeed syntactic in nature, intervening adverbs can only bleed head-movement of  $D^{\min/\max}$  to T if they are merged cyclically during the derivation and not after spell-out (cf. Chomsky 2004 and Biskup 2009 for cyclic adjunct merging). According to this approach, *never* in (30b) is merged into Spec/TP before pronominal subject movement which renders pronominal head-movement unavailable since at this point of the derivation T already projected further and licensed a specifier. Consequently, the pronoun moves to Spec/TP. Thus, pronominal movement to the specifier is a repair operation if head movement is blocked.

For (29b), we have to assume that the adverb is in Spec/TP (and not in Spec/vP) at the point where pronominal movement happens (even though its position is not transparent).<sup>21</sup> Cross-dialectal variation is explained by different orderings between adverb adjunction and pronominal movement: If adverbs are merged to TP before pronominal movement, they bleed head-movement and subsequently #-Agree resulting in verbal *-s*. If adverbs are adjoined after pronominal movement, head-movement is counterbled and #-Agree is possible resulting in canonical agreement morphology.

To sum up, both apparent PSC-constructions, while analysed differently, follow the same underlying principle as the basic NSR derivations: Under the NEE feature ordering, verbal *-s* is possible except for if the subject head-adjoins to T and both  $\varphi$ -probes on T can be valued. However, if head-movement to T is blocked, internal Merge of the subject to Spec/TP bleeds #-Agree.

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turn, this rules out a structure whereby coordinated T' nodes share one and the same specifier (which would make the assumption of a null subject in the second conjunct obsolete), as it would be feasible under an adjunction approach to coordination.

<sup>20</sup>Pietsch (2005b: 9–10) excludes these examples from the NSR as he links them to the phenomenon of habitual *-s*, as he notices that most of the intervening adverbs denote some sense of habitualness. The adverb effect would, therefore, be excluded from the NSR. Following this idea, *-s* would be reanalysed to correspond to some feature [+HABIL] and in varieties with both the NSR and the suspected habitual *-s* we would deal with a case of accidental homophony.

<sup>21</sup>It is also possible that in these examples, the adverb is merged in Spec/vP but moves to Spec/TP during the derivation (cf. Alexiadou 1997; Frey & Pittner 1998; Ernst 2002; Fox & Pesetsky 2003; Biskup 2009 for adverb movement).

### 3.5 Alternative feature ordering

In Section 3.2, I argued for two different feature orderings on T to be the reason for the different agreement patterns in StE and NEE:

(33) (=18)

a. Ordering of features on T in StE:

$[\ast\pi\ast] \succ [\ast\#\ast] \succ [\bullet D \bullet]$

b. Ordering of features on T in NEE:

$[\ast\pi\ast] \succ [\bullet D \bullet] \succ [\ast\#\ast]$

Given the assumption that  $[\ast\pi\ast]$  is universally ordered before  $[\ast\#\ast]$  (Béjar & Rezac 2003; Coon & Keine 2019), there should be a third possible feature order on T in addition to the sequences in (33), namely  $[\bullet D \bullet] \succ [\ast\pi\ast] \succ [\ast\#\ast]$ . According to this ordering, T would not receive any  $\varphi$ -values (i. e.  $T[\pi : \square, \# : \square]$ ) during the derivation as movement of a full DP subject would always bleed both instances of Agree. Verbal *-s* would therefore arise with every full DP subject after vocabulary insertion. However, pronominal subjects would still be able to agree with T as they do not move out of T's c-command domain.<sup>22</sup> Thus, it would derive the same data as the NEE feature order with respect to 3PL full DP subject vs. pronominal subjects.

However under the alternative order, complex DPs with a 1<sup>st</sup> or 2<sup>nd</sup> person pronoun of the type *we linguists* or *you idiot* should also be able to trigger verbal *-s* since they would not transmit a person value to T as  $\pi$ -Agree is bled by movement to Spec/TP. In contrast, suppose the NEE ordering  $[\ast\pi\ast] \succ [\bullet D \bullet] \succ [\ast\#\ast]$  (33b),  $[\ast\pi\ast]$  on T is already valued for [+1] or [+2] via Agree before the complex DP moves to Spec/TP. As a result, *-s* cannot be inserted post-syntactically. Indeed, there is no instance of verbal *-s* in clauses with complex pronoun-noun subjects in the NECTE2 corpus (0%,  $N=2$ ). Despite the fact that such structures seem to be very rare in the corpus, I take this as support for the feature order in (33b) to be relevant for NEE, as 1<sup>st</sup> and 2<sup>nd</sup> person subject can never trigger verbal *-s* if  $[\ast\pi\ast]$  is ordered before  $[\bullet D \bullet]$ .<sup>23</sup>

## 4 Previous and alternative accounts

In the previous section, I presented an analysis of the Northern Subject Rule on the basis of ordering Merge and two instances of Agree that captures the corpus data laid out in Section 2.2: Movement of 3PL full DP subjects to Spec/TP bleeds  $\#$ -Agree resulting in verbal *-s*, while pronominal subjects head-adjoin to T allowing full agreement. Moreover, I have shown that the analysis can be extended to varieties that allow verbal *-s* with pronominal subjects in environments attributed to the so-called Position-of-Subject

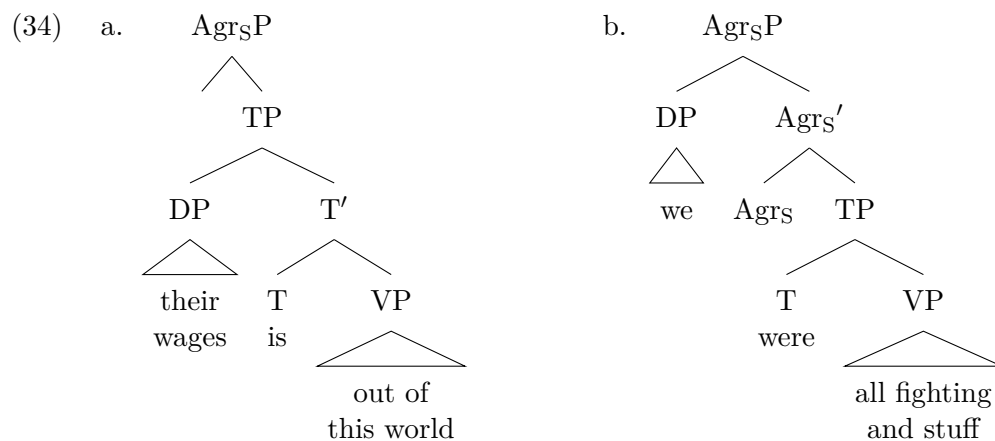
<sup>22</sup>If pronouns do not head-adjoin to T but rather move to Spec/TP directly, verbal *-s* would arise with any subject given this ordering of features on T. This derives a pattern of generalised *-s* over all persons, which is attested in some varieties of English (Kortmann & Szmrecsanyi 2004; see also Anderwald 2008 for South-Eastern English).

<sup>23</sup>Subjects of the *we linguists* type are also not reported in Cole (2008), Childs (2012) and Buchstaller et al. (2013).

Constraint (i. e. adverb intervention and coordination constructions). In the remainder of this section, I will discuss alternative approaches to the NSR and conclude that these have difficulties to account for the whole NSR data.

#### 4.1 A configurational approach

A structural analysis of NSR effects (“singular concord”) in Belfast English is proposed by Henry (1995). Following the split INFL hypothesis (Pollock 1989; Chomsky 1993), two subject positions are assumed: Spec/Agr<sub>S</sub>P and Spec/TP, where only the former allows nominative case assignment,  $\phi$ -feature checking and consequently full agreement. Subjects in the latter position are assigned non-nominative (or “default”) case,  $\phi$ -features are not checked and default morphology (-s) surfaces on the verb, resulting in non-agreement (34a).<sup>24</sup> Optional head-feature strength on Agr<sub>S</sub> determined through parameter setting accounts for variability: If the head feature is strong, the subject raises to Spec/Agr<sub>S</sub>P; if the head feature is weak, the subject remains in Spec/TP. Since personal pronouns show nominative case overtly, they are forced into Spec/Agr<sub>S</sub>P to check nominative case and, therefore, trigger full agreement with the verb (34b).<sup>25</sup>



According to this approach verbal -s cannot arise in subject-verb inversion contexts, as T-to-C would include head-movement to Agr<sub>S</sub> and, thus, trigger agreement (Henry 1995: 42–43). However, Pietsch (2005b: 17) argues that subject-verb inversion is a favourable context for verbal -s at least in some varieties (including Northern Irish

<sup>24</sup>Tortora & den Dikken (2010) further extend this approach for their analysis of verbal -s in Appalachian English and postulate a third possible subject position: Spec/SubjectP. Haas & Kemenade (2015) also base their analysis of the NSR in Middle English on differential subject positions.

<sup>25</sup>A potential issue involves the assumed structure of functional projections, as the existence of Agr<sub>S</sub>P (being part of split INFL) in Modern English can be questioned (multiple subject positions are argued to have been lost at some point after the Middle English stage Haas 2011). According to Bobaljik & Thráinsson (1998), the split INFL parameter is connected to V-to-T movement (lexical verbs must rise out of V because feature checking between T and V is blocked by Agr<sub>O</sub>) and correlated syntactic phenomena, such as object shift and transitive expletive constructions, which both StE and NEE lack (see also and Alexiadou & Fanselow 2002).

English data). Although not attested in the NECTE2 corpus, the analysis in Section 3.3 can easily be extended to verbal *-s* with subject-auxiliary inversion and full DP subjects, as T-to-C movement would apply only after failed #-Agree.

Moreover, an extension of Henry’s (1995) approach to varieties with an intact adjacency condition runs into difficulties. According to Henry (1995: 33), pronouns must check nominative case overtly during syntax and can do so only in Spec/Agr<sub>S</sub>. This, however, excludes the possibility of verbal *-s* to ever arise with pronominal subjects even if they are non-adjacent to the verb, because verbal *-s* can only arise if the subject is in Spec/TP during syntax.

## 4.2 A lexical approach

Adger & Smith (2010) argue for a feature-based approach to agreement variation in Buckie English (a local dialect in north-eastern Scotland), involving both *was/were* variation, as well as verbal *-s*. Variability is accounted for by the random choice between different lexical items (including functional heads) of the same category (i. e. “Combinatorial Variability”). Assuming the lexicon contains two lexical items of the same functional category with different uninterpretable features, namely  $X_1$  [ $uF_1$ ] and  $X_2$  [ $uF_2$ ], the selection of either  $X_1$  or  $X_2$  in the numeration will determine which kind of feature ( $uF_1$  or  $uF_2$ ) is used for establishing an agreement chain. Depending on the features used to establish the relation, different morphological forms are mapped onto the head. As the interpretable features in both possible agreement chains would be the same, the meaning of the chain would also not change (see Adger & Smith 2005; Adger 2006).

According to this approach, lexical items are generated by an algorithm seeking maximal generalisations (i. e. the items with the fewest features). First, LIs with only one feature are generated and their usability is assessed. If it is not deemed satisfactory (e.g. because there are several forms mapping to one item), two-feature items are generated and recursed over. This algorithm, outlined in (35), is a process of establishing a speaker’s lexicon (Adger 2006: 517–518).

- (35) Adger & Smith (2010: 1111):  
Seek maximal generalization by
- a) Generating all n-feature lexical items,  $n=1$
  - b) Mapping features on to forms and rejecting optionality (a given feature bundle must always match to only one form)
  - c) Rejecting synonymy
  - d) Minimizing lexicon, recursing over n-feature  $n=n+1$

In the case of verbal *-s* in Buckie English, a further [pronominal:  $\pm$ ] feature on D has to be postulated, to which T has to be sensitive in addition to  $\varphi$ -features. Applying the algorithm in (35) thus leads to the lexical items for T (with their morphological form) in (36). Out of this pool of variants, a lexical item is randomly chosen as the input of the derivation. The feature bundles on T after Agree with a 3PL subject that are relevant for verbal *-s* are depicted in (37).

- (36) Adger & Smith (2010: 1125):
- a. [singular:+, participant:-] → -s
  - b. [singular:-] → -∅
  - c. [participant:+] → -∅
  - d. [pronominal:-] → -s
- (37) Adger & Smith (2010: 1125):
- a. T[participant: -, singular: -, pronominal: +]: e.g. *they* → -∅
  - b. T[participant: -, singular: -, pronominal: -]: e.g. *the men* → 50/50 -∅ & -s

Adger & Smith (2010: 1125) conclude that combinatorial variability predicts full plural DP subjects to trigger both -∅ and verbal -s in equal amounts (37b), as the relevant mappings of features to morphological form are either (36b) or (36d). In the Buckie corpus, the frequency of occurrence of verbal -s with such subjects is 58% (choice of form is claimed to also be dependent on other factors), which is taken as support for the proposed system (the expected frequency is 50%) as the system is claimed to “predict correct frequencies of variants” (Adger 2006: 506).<sup>26</sup>

In contrast to the analysis in Section 3.3, a system that deals with the variation lexically seems not to be equipped for handling varieties with the adjacency condition. Given the fact that there is no difference in terms of features between (verb-) adjacent and non-adjacent pronominal subjects, further assumptions about the mechanics of subject verb agreement would have to be made. As shown in Section 4.3 this is also true for some of the other non-syntactic approaches to the NSR.

Moreover, the analysis requires the stipulation of a further Agree probe on T sensitive to the pronominal feature on D (in addition to the canonical  $\varphi$ -feature probe(s)) to account for the split between pronoun and full DP subjects in their ability to trigger verbal -s in a non-syntactic way.

### 4.3 Morphological approaches

#### 4.3.1 Feature specification on vocabulary items

A conceivable analysis could be a purely morphological one on the basis of modifying the vocabulary entries. Verbal -s with plural DPs could arise if the Vocabulary item (VI) for -s would only be specified for a person ( $\pi$ ) feature (i. e. [+3]), but not for number (#) as displayed in (38). In post-syntactic morphology, -s would then be inserted whenever

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<sup>26</sup>In my understanding, this is not a strong argument in favour of this approach. The particular lexicon in (36) is able to show a 50/50 split for verbal -s, as there is, in informal terms, one path each to -∅ (b) and -s (d). This distribution does not necessarily hold for other corpora. For instance, in a quantitative corpus study on verbal -s in the NECTE data from 1994, Cole (2008: 97) observes the relative frequency of verbal -s with plural DPs to be 12.8%. To correctly predict this distribution, the lexicon would have to be enriched with additional (unique) LIs that are matched to -∅ so that there is only a 1/8 chance of verbal -s with plural DP subjects. This would potentially run into difficulties with clauses (c) “Rejecting synonymy” and (d) “Minimizing lexicon” of the algorithm in (35).

T is valued as  $[\pi:+3]$  via Agree with the subject of the clause, regardless of its number feature.

(38) Alternative English present tense verbal Vocabulary Items:

-s	$\leftrightarrow$	$[+3]$	<i>3 pres</i>
$-\emptyset$	$\leftrightarrow$	$[\ ]$	<i>elsewhere</i>

This, however, does not capture the full DP/pronoun distinction of the verbal *-s* data in the NECTE2 corpus. Verbal *-s* would incorrectly arise with both 3PL full DP subjects and 3PL pronominal subjects.

A possible way to work the full DP/pronoun distinction into the analysis is the additional stipulation of a  $[\pm\text{pron(ominal)}]$  feature along the lines of Adger & Smith (2010) (see also Section 4.2). It also has to be assumed that this feature participates in Agree for e.g. a pronominal subject to value T as  $[+\text{pron}]$  (a full DP subject would value T as  $[-\text{pron}]$ ). If the VI for *-s* is stipulated to be specified for  $[\text{person}]$  and  $[\text{pronominal}]$  as illustrated in example (39), verbal *-s* would only arise in clauses with non-pronominal subjects. As before,  $[\text{number}]$  specification on T would not alter the outcome of vocabulary insertion.

(39) Alternative English present tense verbal Vocabulary Items II:

-s	$\leftrightarrow$	$[+3, -\text{pron}]$	<i>3 pres non-pronominal</i>
$-\emptyset$	$\leftrightarrow$	$[\ ]$	<i>elsewhere</i>

However, this specification wrongly excludes the insertion of *-s* in clauses with 3SG pronominal subjects. There is a possible modification to the vocabulary entries in (39) such that there are two different VIs with the exponent *-s*:

(40) Alternative English present tense verbal Vocabulary Items III:

-s	$\leftrightarrow$	$[+3, -\text{pron}]$	<i>3 pres non-pronominal</i>
-s	$\leftrightarrow$	$[+3, -\text{pl}]$	<i>3 sg pres</i>
$-\emptyset$	$\leftrightarrow$	$[\ ]$	<i>elsewhere</i>

This approach would derive *-s* in clauses with non-pronominal subjects (i. e. verbal *-s*) as well as with 3SG pronominal subjects. However, this treatment is conceptually undesirable as it would only come at the cost of dispensing with systematic syncretism: The system would just spell out both environments in which *-s* can arise with the help of accidental homophony, despite the fact that the environments in which *-s* arises are very similar (i. e. present tense verbal inflection in the presence of a 3<sup>rd</sup> person subject). Moreover, similar adaptations (including homophony) to the vocabulary entries of present and past tense *be* would have to be made.

Moreover, there is no obvious way to extend the VI-modification approach in order to capture varieties with an intact adjacency condition. For these reasons the approach has to be rejected.

### 4.3.2 Impoverishment

A further morphological attempt could rely on the operation of impoverishment, which deletes morpho-syntactic features post-syntactically before vocabulary insertion (see

Bonet 1991; Halle & Marantz 1993, 1994). However, there are some problems with this approach. Consider the impoverishment rule in (41a): A [+pl]-feature is deleted in the context of [+3,+pl]. However, for verbal *-s* to arise after vocabulary insertion the VI for *-s* would have to be specified as in (38) (repeated here as (42)). Aside from the problems of this specification sketched above (i. e. not capturing the full DP/pronoun split), deleting [+pl] would have the same outcome as not deleting it at all. A second possible rule in (41b), according to which a [+pl]-feature becomes a [-pl]-feature so that *-s* (specified for [+3, -pl]) can be inserted, is not even impoverishment since there is no deletion involved.<sup>27</sup>

(41) Possible impoverishment rules for Verbal *-s*:

- a. [+pl] → ∅ / [+3, +pl]\_\_
- b. [+pl] → [-pl] / [+3, +pl]\_\_

(42) Alternative English present tense verbal Vocabulary Items:

- s ↔ [+3]     3 *pres*
- ∅ ↔ [ ]     *elsewhere*

Moreover, impoverishment rules involve deleting features from a node so that a less specific VI can be inserted. Yet, as 3rd person is always specified and not a default (Nevins 2007), the VI for *-s* (i. e. the 3rd person marker) is more specific than the VI for *-∅*. As there would be no retreat to the general case, verbal *-s* cannot arise as a result of impoverishment.

A further approach to the NSR involving impoverishment is hinted at in Nevins & Parrott (2010). The idea is that verbal *-s* arises because of number impoverishment on D before agreement of the subject with T (which is subsequently unable to probe for number). There are a few problems with this sketched system: Firstly, if vP is spelled out as a phase (triggered by merging T), the subject DP in Spec/vP should not be part of the spell-out as it is in the phase edge and has to be available for operations in the higher phase. Secondly and most importantly, if the DP is sent to PF (where impoverishment takes place), the result of impoverishment (i. e. the node without the number feature) has to be somehow fed-back into narrow syntax for agreement. This would violate cyclicity, however.

### 4.3.3 Post-syntactic repair

In a recent approach, Fuß & Trips (2020) investigate the synchronic and diachronic properties of the NSR. This approach draws from the notion of “blank generation”, according to which functional heads (i. e. T) can enter syntax without a set of  $\varphi$ -features (see also Roberts 2010b). Variation between *-∅* and verbal *-s* arises because of two post-syntactic repair strategies: incorporation of a pronominal  $\varphi$ -feature set into T (resulting in *-∅*) or default morphology via the elsewhere principle (resulting in *-s*). Crucially, the specifications of present tense verbal VIs have to be modified so that *-s* is

<sup>27</sup>Impoverishment in the sense of changing a feature value to a less marked value has been suggested by Noyer (1998).

underspecified and  $-\emptyset$  is specified for the presence of positive  $\varphi$ -feature values (43).<sup>28</sup> Moreover, incorporation of  $\varphi$ -feature sets into T is assumed to be only possible under adjacency of a pronoun to T.

- (43) English present tense verbal Vocabulary Items according to Fuß & Trips (2020):
- |              |                   |              |   |
|--------------|-------------------|--------------|---|
| $-\emptyset$ | $\leftrightarrow$ | $[+\varphi]$ | <i>positive <math>\varphi</math>-features</i> |
| $-s$         | $\leftrightarrow$ | $[\ ]$       | <i>elsewhere</i>                              |

The approach is able to account for a traditional NSR pattern. Given that T enters syntax without any  $\varphi$ -features,  $\emptyset$ -morphology can only arise if T is adjacent to a non-3SG pronoun as the positively valued  $\varphi$ -feature set of the pronoun is incorporated into T under adjacency as a post-syntactic repair operation that takes place before vocabulary insertion. Thus, incorporation is not possible if the subject is either a non-adjacent pronoun or a full DP. In these cases,  $-s$  is inserted as a last resort strategy.<sup>29</sup>

This system is utilised by Fuß & Trips (2020) to analyse Middle English NSR patterns but it cannot adequately explain two crucial aspects in contemporary NEE data (see Section 2.2): Firstly, post-syntactic repair is only suited for NSR patterns with an intact adjacency condition (i. e. the PSC). However, without the adjacency condition (as in contemporary NEE), (non-3SG) pronominal subjects always trigger standard agreement morphology (i. e.  $-\emptyset$ ) even if they are not adjacent to the verb. As the system derives  $-\emptyset$  only with the help of post-syntactic incorporation under adjacency and not via Agree, non-adjacent pronominal subjects should not be able to trigger standard agreement. Thus, there is no possibility to derive the full DP/ pronoun distinction in varieties where adjacency to the verb is not a factor.

Secondly, explaining verbal  $-s$  in *be* (*past*) along the lines of this approach is problematic, as *was* would have to be the elsewhere case and specified for 1SG at the same time. Fuß & Trips (2020) claim that *be* does not participate in the NSR pattern proposing a separate head  $T_{be}$ , which always carries  $\varphi$ -probes. Yet, the data in Section 2.2 suggests that verbal  $-s$  on *be* (i. e. *is* or *was*) can be triggered by non-3SG full DP subjects but not by non-3SG personal pronoun (see e.g. (3c) in Section 2.2).

## 5 Conclusion

Overall, I argue that verbal  $-s$  with non-pronominal non-3SG subjects (i. e. the Northern Subject Rule) in North Eastern English follows from two independently motivated assumptions: Firstly, the requirement to order feature-driven elementary operations and secondly, splitting up  $\varphi$ -Agree into two separate operations (person and number Agree). The difference in agreement between NEE and Standard English stems from the difference in ordering the features (and thus operations) on T. In the StE ordering person ( $[*\pi*]$ ) and number ( $[*#\#*]$ ) probes are ranked before the structure building feature ( $[\bullet D \bullet]$ ) – thus giving the impression of a uniform Agree operation before (internal) Merge. In the

<sup>28</sup>However, this is incompatible with the notion of iconicity (i. e.  $\emptyset$ -morphology should correspond to radical underspecification; Wiese 1999).

<sup>29</sup>It has to be noted that Fuß & Trips (2020) assume 3SG to be the absence of any  $\varphi$ -features (see also Harley & Ritter 2002).



NEE ordering, on the other hand, the structure-building feature intervenes between the two probe features (*discontinuous Agree*). The full DP/pronoun split is explained by different kinds of movement: Pronominal subjects remain in the c-command domain of T for #-Agree because of they head-adjoin to T, while in the case of a full DP subject movement to Spec/TP bleeds number agreement and verbal *-s* emerges. Optionality of verbal *-s* and canonical agreement in the NEE data is due to the possibility to have both feature orderings in the grammar of NEE speakers.

Moreover, the paper makes claims about the contemporary nature of the NSR. As no instance of verbal *-s* with a non-adjacent pronominal subject surfaced in the corpus study, it is concluded that the adjacency condition of the NSR (i.e. the Position-of-Subject Constraint) is not relevant for an analysis of verbal *-s* in contemporary NEE. This is coherent with the results of other studies on the NSR (e.g. Cole 2008; Childs 2012; Buchstaller et al. 2013).

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