

Agreement Features and Non-nominal Subjects*

Takaaki Hirokawa

Abstract

Subjects in English, which control subject-verb agreement, are sometimes apparently not DPs. The sentential subject (CP) is the most familiar instance of the non-nominal subject, but PP and AP are also able to occur as subjects. This paper focuses on their agreement and ϕ -feature, and points out a question arising from previous analyses: how are the values of ϕ -feature on non-nominal subjects determined? On the basis of considerations of the distinction between morphological and semantic ϕ -features and of agreement in coordination, this paper argues that non-nominal subjects (i) lack morphological ϕ -features and (ii) have their semantic ϕ -features to agree with T's morphological ϕ -features.

Keywords: Non-nominal Subjects, Agreement, ϕ -feature, semantic feature, syntactic feature

1. Introduction

In English, there are sentences with seemingly non-DP subjects (hereafter *non-nominal subjects*). Although non-nominal subjects do not appear to be DPs, it is argued in the literature that they show subject-verb agreement.¹ In the following examples, non-nominal subjects seem to undergo subject-verb agreement:

Takaaki Hirokawa

(1) *CP*

- a. [_{CP} that Shelby lost it] is true. (Davies and Dubinsky (2001: 247))
- b. [_{CP} [_{CP} that the march should go ahead] and [_{CP} that it should be cancelled]] have been argued by the same people at different times.
(McCloskey (1991: 564))

(2) *PP*

- a. [_{PP} under the bed] is a good place to hide.
(Davies and Dubinsky (2001: 247))
- b. [_{PP} [_{PP} under the bed] and [_{PP} in the fireplace]] are not the best (combination of) places to leave your toys. (Levine (1989: 1015))
- c. Sandy talks a lot about her beach house and the family's Appalachian camping trips. As a result, [_{PP} [_{PP} along the coast] and [_{PP} in the mountains]] remind me of Sandy's retirement fantasies.
(Davies and Dubinsky (2001: 249))

(3) *PP*

- a. Under the bed and in the blanket are good places to hide.
- b. In the sink and in the dishwasher are where I expect you to put the dishes after we finish eating.²

(4) *AP*

- a. [_{AP} very tall] is just how he likes his bodyguards.
(Davies and Dubinsky (2001: 247))
- b. [_{AP} [_{AP} very brawny] and [_{AP} very studious]] are what Cindy aspires to be.
(Davies and Dubinsky (2001: 249))

(5) *Infinitives*

To arrive early, to meet Bill, and to get a good seat seem to be what John wants.
(Chomsky (2020, ex. (9); 2021, ex. (9)))

The data above suggests that the coordinated non-nominal subjects show plural

Agreement Features and Non-nominal Subjects

agreement. However, it is not always the case; Singular agreement is also possible or, in some cases, preferred:³

(6) *CP*

- a. That UNO will be elected and that sanctions will be lifted is/??are now likely (McCloskey (1991: 565))
- b. That Mary travels a lot and that John does not go to work is/#are well-known. (Moltmann (1997: 238))

(7) *PP*

- a. Under the bed and in the blanket is a good combination of places to hide.
- b. In the sink and in the dishwasher is where I expect you to put the dishes after we finish eating.

(8) *Infinitives*

To arrive early, to meet Bill, and to get a good seat seems to be what John wants. (Chomsky (2020, ex. (9); 2021, ex. (9)))

(9) *Gerunds*

Arriving early, meeting Bill, and getting a good seat seems/*seem to be what John wants. (Chomsky (2020, ex. (9); 2021, ex. (9)))

In (6) through (9), coordinated clausal, prepositional, infinitival and gerundive subjects do not show plural agreement, in contrast with (1b), (2b, c), (3) and (5).

However, it has been argued in the literature that CPs, for example, do not bear agreement features on their own (cf. McCloskey (1991), Iatridou and Embick (1997), Hartman (2012), Alrenga (2005), among others).⁴ To show this, Hartman (2012) presents evidence from the behavior of thematic *pro*, the *there* construction and the locative inversion construction. Hartman assumes with Iatridou and Embick (1997) that thematic *pro* is licensed by the ϕ -feature of its antecedent, and cites Zamparelli's

(2008) Italian examples where the clausal subject can antecede *pro* whereas the adjunct clause cannot:

- (10) a. [Che non si trovi un colpevole]_i sarebbe disastroso, perchè
 [that not one finds a culprit]_i would-be disastrous, since
*pro*_i metterebbe in luce l'inefficienza della polizia.
*pro*_i would-put under light the inefficiency of-the police
 'That a culprit may not be found would be disastrous, since it would
 spotlight the inefficiency of the police'
- b. *Se [non si trovasse un colpevole]_i *pro*_i metterebbe in
 if [not one finds a culprit]_i *pro*_i would-put under
 luce l'inefficienza della polizia.
 light the inefficiency of-the police
 'If a culprit could not be found, it would spotlight the inefficiency of
 the police'

(Zamparelli (2008: 121))

In (10a), the clausal subject *che non si trovi un colpevole* 'that a culprit may not be found' can antecede *pro*, while in (10b), adjunct clause *non si trovasse un colpevole* 'a culprit could not be found' cannot serve as the antecedent of *pro*.

In the *there* construction and the locative inversion construction in English, postverbal DPs agree with verbs. Hartman shows that CPs cannot occur in postverbal positions:⁵

- (11) a. On the door there was written [a message].
 b. On the door there were written [two messages].
 c. *On the door there was written [that Mary was away].

(Hartman (2012: 50))

Agreement Features and Non-nominal Subjects

- (12) a. In this room, ladies and gentlemen, was discovered [the cure for cancer].
 b. In this room, ladies and gentlemen, were discovered [many different cures].
 c. *In this room, ladies and gentlemen, was discovered [that cancer is caused by tomatoes]. (Hartman (2012: 51))

In (11) and (12), (a, b) examples show that DPs can appear in postverbal positions and trigger agreement, while postverbal CPs cannot, as (c) examples indicate. Hartman ascribes the ungrammaticality of (11c) and (12c) to the agreement failure: since CPs lack ϕ -features, they cannot trigger verbal agreement, yielding ungrammaticality.

Provided that coordinated non-nominal subjects are compatible with both singular and plural agreement and that non-nominals themselves lack ϕ -features, a question arises as to the locus of agreement (i.e., ϕ) features on non-nominal subjects. In the literature, two kinds of analyses have been proposed for the structure of non-nominal subjects. The first one, pursued by Davies and Dubinsky (1998, 1999, 2001, 2009), Takahashi (2010) and Hartman (2012), among others, posits the clausal subject headed by D. This approach is further divided into two groups: Davies and Dubinsky (1998, 1999, 2001, 2009) and Hartman argue for the structure in (13a), while Takahashi (2010) proposes the one in (13b).

- (13) a. [CP C [TP [DP D [CP that ...]] T [...]]]
 b. [CP [DP D [CP that ...]] C [TP ~~[DP D]~~ T [...]]]

In (13a), the clausal subject raises to Spec,TP and stays there, while in (13b), it is only D that raises to Spec,TP and it further moves to Spec,TopP, where its CP complement is late-merged.⁶ This D bears agreeing features, and hence clausal

subjects can agree with verbs.

On the other hand, the second approach argues for the structure below, which is advocated by Koster (1978), and subsequently adopted by Alrenga (2005), Moulton (2013) and Ott (2017), among others:

(14) [CP [CP that ...] C [TP [\emptyset D/Op] T [...]]]

In this structure, the *that*-clause is seemingly a subject, but it is in fact a topic element base-generated in Spec,CP. In Spec,TP occurs either a null DP or a null operator (Op), which has the agreeing feature determined by its anaphoric link with the CP in Spec,CP (cf. Alrenga (2005: 189)).⁷

In terms of agreement and ϕ -feature values, each approach has an issue: In the first approach, it is still unclear how the values of the agreeing feature on D are determined, since the non-nominals do not have ϕ -features inherently.⁸ Similarly, in the second approach, a question remains as to how the anaphoric link determines the ϕ -feature values of the null DP/Op, since non-nominals themselves do not have ϕ -features. These issues boil down to the following question:

(15) *Question*

How are the ϕ -feature values on non-nominal subjects specified?

Focusing on Number features, this paper proposes that the relevant Number value on the non-nominal subject is only specified on the semantic side of its ϕ -feature, and I suggest that D enters derivations with its semantic Number value specified.

2. Assumptions and Proposal

This section lays out the assumptions and proposal of this paper. In section 2.1, I address the role of D in non-nominal subjects and the structure of coordinated non-

Agreement Features and Non-nominal Subjects

nominal subjects. Section 2.2 outlines the mechanism of feature valuation and the semantics of Number features I posit in this paper.

2.1. Nominalization and Coordination

This paper assumes the first line of approach to the non-nominal subjects, as repeated in (16a).

- (16) a. $[_{CP} [_{DP} D [_{CP} \text{that ...}]] C [_{TP} [_{DP} D [_{CP} \text{that ...}]] T [\dots]]]$ [= (13)]
 b. $[_{CP} [_{CP} \text{that ...}] C [_{TP} [\emptyset_D/Op] T [\dots]]]$ [= (14)]

Cross-linguistic evidence for the DP approach is summarized in Hartman (2012: 36-41). Take (Modern) Greek for example. In Greek, sentential subjects require the overt morpheme *to* (e.g., (17b)), which is homophonous with the determiner ‘the’ in the singular neuter form (e.g., (17a)):

- (17) a. *to vivlio*
 the.NOM book
 ‘the book’
 b. *To/* \emptyset oti lei psemata apodhiknii tin enohi tis.*
 the that tell.3SG lies-ACC prove.3SG the.ACC guilt her
 ‘That she tells lies proves her guilt.’

(Hartman (2012: 38, ex. (64) and (65)))

Hartman (2012), citing Roussou (1991), points out that the Greek *to* is disallowed in complement positions:

Takaaki Hirokawa

- (18) Ksero (*to) oti efighe.
 know.1SG the that left.3SG
 ‘I know that he left.’

(Roussou (1991: 87), cited in Hartman (2012: 38))

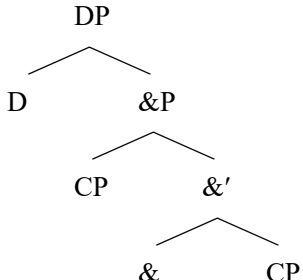
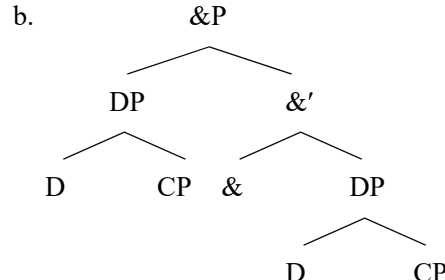
Hence, this paper assumes the DP approach for non-nominal subjects.

The idea of nominalization by D is also independently proposed in other domains. Recently, Iordăchioaia (2020) argues for two strategies for nominalization: Full nominalization by *n*(N) and defective nominalization by D. The latter is defective in that it allows only possessor as its D.

- (19) a. [DP [_nExtP [_nP ([_vExtP) [_vP [√ROOT]]]]]] [Full nominals]
 b. [DP [_vExtP [_vP [√ROOT]]]] [Defective nominals]
 (Iordăchioaia (2020: 9))

In (19a), full nominals include the *n*P and its extended projection, while in (19b), defective nominals lack the *n*P at all. In Iordăchioaia’s analysis, the former includes nominal gerunds and deverbal nominals, and the latter, verbal gerunds.

For coordination of non-nominal subjects, there are several possible structures, as in (20):

- (20) a. 
b. 

Agreement Features and Non-nominal Subjects

The difference between (20a, b) is in what is coordinated: In (20a), non-nominals are coordinated, and D takes the resulting &P as its complement; In (20b), Ds take a non-nominal phrase as their complement, and the resulting DPs are coordinated.

Hartman (2012) shows that Greek coordinated clausal subjects have both structures in (20), which differ in terms of verbal agreement:

- (21) a. *Singular agreement on predicate; one D:*

To na efiye i Maria ke *(to) na ine akomi
D PRT left.3SG Maria and D PRT be still

thimomeni ine eksisu **pithano**
angry be equally **likely.SG**

‘That Maria left and that she is still angry is equally likely’

- b. *Plural agreement on predicate; two Ds:*

To na efiye i Maria ke *(to) na ine akomi edho
D PRT left.3SG Maria and D PRT be still here

ine eksisu **pithana**
be equally **likely.PL**

‘That Maria left and that she is still here are equally likely’

(Hartman (2012: 53))

Though the correlation between agreement and the structure in Greek might hold in English as well, English non-nominal subjects lack overt determiners, and evidence from coordinated *nominal* subjects suggests that the correlation between determiners and agreement is rather weak in English:

- (22) a. My friend and former housemate is coming over for dinner.

- b. My friend and former housemate are (both) coming over for dinner.

(McNally (1993: 363))

Takaaki Hirokawa

- (23) His aged servant and the subsequent editor of his collected papers
 {was/were} with him at his death-bed. (Quirk et al. (1972: 362))

The coordinated nominal subject has only one determiner in (22), and two determiners in (23); Nevertheless, they are acceptable with both singular and plural agreement.

There is by now a considerable amount of literature that argues for various factors affecting subject-verb agreement, e.g., semantics, notional information and linear word order. (cf. Dik (1968: 210), van Eijk (1983: 99), Quirk et al. (1972: 362, 612-613), Morgan (1970, 1984), Hoeksema (1983: 71–72), Reid (1984: 109-110), Sag et al. (1985: 154), McCloskey (1991: 594), McNally (1993: 363), Johannessen (1996; 1998), Moltmann (1997: 238), Sauerland (2003: 261), among many others). Therefore, this paper leaves open the issue of the correlation between the number of overt determiners and the (non)plurality of agreement in English.

2.2. Feature Valuation

English shows the mismatch in agreement: Morphologically singular elements sometimes control plural verbal agreement, one example of which comes from group nouns such as *team*, *government* and *committee* in British English. As Elbourne (1999) observes, they cannot take plural determiners while they can be used with plural verbs:

- (24) a. This set are all odd.
 b. *These set are all odd. (Elbourne (1999: 86))
- (25) a. This committee are deciding on a solution.
 b. *These committee are deciding on a solution. (Smith (2017: 824))

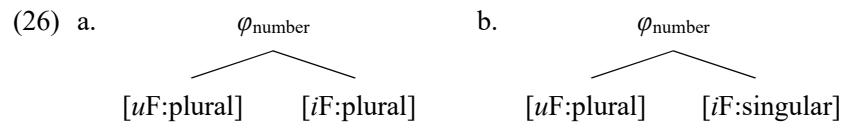
In (24) and (25), the group nouns *set* and *committee* allow plural verbal agreement,

Agreement Features and Non-nominal Subjects

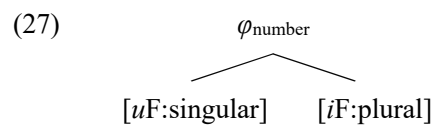
but disallow the plural determiner *these* (e.g., (24b) and (25b)).

For this kind of mixed agreement behavior, some researchers posit a special feature for group nouns in British English (e.g., *Mereology* proposed by Elbourne (1999), Sauerland and Elbourne (2002), among others), and others argue for multiple values on a single element (cf. Wechsler and Zlatić (2000, 2003), Smith (2015, 2017), among others). This paper assumes the latter view, and briefly reviews Smith's proposal.

In Smith (2015, 2017), he proposes that a single φ -feature comes with both *morphological* and *semantic* halves at the same time. Specifically, Number features consist of a morphological singular/plural value and a semantic singular/plural value. He assumes that the morphological Number value is uF and the semantic one is iF . Further, these values can either coincide, as in (26a), or differ, as in (26b):



For the Number feature on group nouns, Smith proposes that it bears the following pair of values:



In (27), the morphological value is singular, and the semantic value is plural. This captures the fact that group nouns in British English can be morphologically singular, but semantically plural. When iF s donate an agreement value to a uF target, then this value will be morphologically realized on the target.

Group nouns can also be specified as [uF:singular, iF:singular], in which case

Takaaki Hirokawa

group nouns control singular agreement, as in (28):

- (28) a. The committee consists/*consist of two academic staff and three students.
 b. One committee, appointed last year, has/?have not yet met.

(Smith (2017: 836))

In (28), the predicate applies to the group as a whole, but not its individual members; Then the singular agreement is required.

On the semantic and pragmatic side of Number features, I adopt Sauerland's (2003: 260) proposal for presuppositional Number features:

- (29) a. [SG] introduces the presupposition that the referent denotes an atom or a mass.
 b. [PL] has no inherent presupposition.

In (29), the singular feature [SG] introduces a specific 'atomicity' presupposition for the entity which bears it, and the plural feature [PL] lacks it. The choice between (29a, b) is conditioned by the principle of *Maximize Presupposition*, originally proposed by Heim (1991). Sauerland restates the principle as in (30):

- (30) Use the most specific agreement feature possible whose presupposition is satisfied. (Sauerland (2003: 260))

According to (30), the non-atomicity presupposition will only be present if [SG] is blocked by some independent factor; Whenever a predicate may compose with [SG], it must. Otherwise, [PL] surfaces.

Sauerland demonstrates that the proposed features can predict the following

Agreement Features and Non-nominal Subjects

cases, where singular agreement is possible with coordinated subjects:

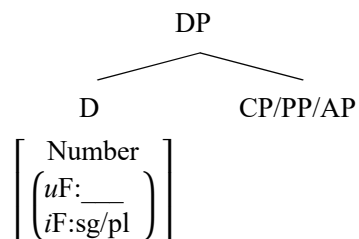
- (31) a. Strawberries and cream is on the menu.
 b. ?Kai and Lina makes a good combination.
 (Sauerland (2003: 261, ex. (11a) and (12a)))

Sauerland (2003: 261) notes, “Singular agreement with a conjunction seems possible when the denotation of the conjunction can be viewed as an atomic individual.” In (31a), *strawberries and cream* can be considered as an atomic individual as a whole; specifically, a dish. It is therefore compatible with the presupposition introduced by the combination of [SG] with *strawberries and cream*, that “the combination of some strawberries and some cream yields an atomic individual.” By the same token, the collective predicate marginally allows singular agreement, as in (31b).

2.3. Proposal

With the assumptions above, this paper proposes that non-nominal subjects are nominalized by the D, as with defective nominals.⁹ This D bears the ϕ -feature and enters the derivation with the morphological Number value being absent:^{10, 11}

- (32) Non-nominal subjects lack morphological Number values.



Hence, the $u\text{F}$ on T^0 can only agree with $i\text{F}$ on non-nominal subjects, and T^0 reflects in morphology the semantic number of non-nominal subjects.

3. Analysis

3.1. Correlation between Agreement and Meaning

In the literature, the agreement-meaning correlation in the non-nominal subject construction is observed. First, for CP subjects, McCloskey (1991) presents the following examples:

(33) (= (6))

- a. That UNO will be elected and that sanctions will be lifted is now likely.
- b.??That UNO will be elected and that sanctions will be lifted are now likely.

(34) a. That the position will be funded and that Mary will be hired now seems likely. (McCloskey (1991: 565), ex. (10))

- b.??That the position will be funded and that Mary will be hired now seem likely. (McCloskey (1991: 565), ex. (11))

(35) a. That the shares are overvalued and that a decline is in order is widely believed on Wall St. (McCloskey (1991: 565), ex. (12))

- b.??That the shares are overvalued and that a decline is in order are widely believed on Wall St. (McCloskey (1991: 565), ex. (13))

In the examples (33) through (35), the plural pattern in (b) examples is degraded in contrast to the singular counterpart in (a) examples. From the contrast above, McCloskey suggests the semantic condition as in (36):

- (36) The semantic condition governing such agreement seems to be that plural agreement is possible just in case the conjoined propositions are contradictory or incompatible, or, more generally, when they specify a plurality of distinct states of affairs or situation-types. When the

Agreement Features and Non-nominal Subjects

coordinated clauses denote compatible propositions (that is, when they denote two or more propositions that jointly specify a single complex state of affairs or situation-type), then singular agreement is preferred or required. (McCloskey (1991: 564-565))

As with McCloskey, Moltmann (1997) also makes a similar observation:

- (37) Plural agreement is permitted only under certain conditions. One context in which it is permitted is when the propositions denoted by the clausal conjuncts are explicitly considered as being unrelated. (Moltmann (1997: 238))

Besides, Chomsky also addresses the similar observation for gerunds and infinitival clauses:¹²

- (38) a. John arrived early, met Bill, and got a good seat.
 b. To arrive early, meet Bill, and get a good seat seems/*seem to be what John wants.
 c. Arriving early, meeting Bill, and getting a good seat seems/*seem to be what John wants. [= (9)]
 d. To arrive early, to meet Bill, and to get a good seat seems/seem to be what John wants. [= (8), (5)]
 (Chomsky (2020, ex. (9); 2021, ex. (9)))

Chomsky attributes the plural agreement in (38) to the multiplicity of events:

- (39) *John arrived early, met Bill, and got a good seat* [= (38a)] can be independent events. *To arrive early, meet Bill, and get a good seat* [in

Takaaki Hirokawa

(38b)] is a single event; that's why it *seems*, not *seem*. *Arriving early, meeting Bill, and getting a good seat* [in (38c)] is one event: *seems*. The last one, *to arrive early, to meet Bill, and to get a good seat* [in (38d)], can be interpreted either way. It can either be *seems to be what John wants* or *seem to be what John wants*. (Chomsky (2020))

Furthermore, this paper points out that the same holds for PP subjects; One of my informant reports that the sentence in (40) allows singular agreement under a certain scenario:

- (40) Under the bed and in the blanket is a good combination of places to hide. [= (7)]

A context where (40) is grammatical with singular agreement is, for example, that during hide-and-seek, a child hid in a blanket, and at the same time the blanket, in which the child is hiding, is under a bed. This also means that *under the bed and in the blanket* is constituting a single unit.

3.2. Explanation for Agreement Patterns

I begin with the simplest, non-coordinated subjects:

- (41) a. [CP that Shelby lost it] is true. [= (1a)]
 b. [PP under the bed] is a good place to hide. [= (2a)]
 c. [AP very tall] is just how he likes his bodyguards. [= (4a)]

According to (16), each sentence in (41) has the following structure:

Agreement Features and Non-nominal Subjects

- (42) a. [DP D [CP that Shelby lost it]] is true.
 b. [DP D [PP under the bed]] is a good place to hide.
 c. [DP D [AP very tall]] is just how he likes his bodyguards.

Each DP in (42) bears a Number feature specified as [uF : __, iF :sg], which introduces the presupposition of [sg] in (29a).¹³ The uF on T^0 receives the [sg] value from the iF on D heading the non-nominal subjects, yielding singular agreement on verbs. In semantic components, if the atomicity of D's complements is inconsistent with pragmatic/contextual information, the derivation results in ungrammaticality. Since CP, PP and AP can express a single proposition, a single location and a single property, respectively, they are grammatical.

The second pattern is those where coordinated non-nominal subjects exhibit plural agreement:

- (43) a. [CP that the march should go ahead] and [CP that it should be cancelled] have been argued by the same people at different times. [= (1b)]
 b. [PP under the bed] and [PP in the fireplace] are not the best (combination of) places to leave your toys. [= (2b)]
 c. [AP very brawny] and [AP very studious] are what Cindy aspires to be. [= (4b)]

Assume the structure in (20a) for coordinated non-nominal subjects in (43).¹⁴ Then the examples in (43) have the following structure:

- (44) a. [DP D [&P [CP that the march should go ahead] and [CP that it should be cancelled]]] have been argued by the same people at different times.

Takaaki Hirokawa

- b. [DP D [&P [PP under the bed] and [PP in the fireplace]]] are not the best (combination of) places to leave your toys.
- c. [DP D [&P [AP very brawny] and [AP very studious]]] are what Cindy aspires to be.

In these examples, the DP consisting of coordinated non-nominal elements bears a Number feature specified as [*uF*:__, *iF*:pl], which introduces no presupposition according to (29). Therefore, plural verbal agreement obtains. On the other hand, if coordinated subjects in (43) had the [*uF*:__, *iF*:sg] Number value, then the presupposition of [sg] in (29) would be introduced. The atomicity of D's complements is inconsistent with pragmatic/contextual information; Each conjunct in (43a), for instance, expresses a proposition, fact or situation contradictory from those expressed by the other conjunct, and therefore the derivation would be blocked.

The same holds for the last pattern: The singular agreement with coordinated non-nominal subjects.

- (45) a. That UNO will be elected and that sanctions will be lifted is now likely. [= (6a)]
- b. Under the bed and in the blanket is a good combination of places to hide. [= (7a)]

Given the coordination structure in (20a), the examples in (45) have the following structure:

- (46) a. [DP D [&P [CP That UNO will be elected] and [CP that sanctions will be lifted]]] is now likely.
- b. [DP D [&P [PP Under the bed] and [PP in the blanket]]] is a good combination of places to hide.

Agreement Features and Non-nominal Subjects

In these examples, coordinated subjects are specified as [*u*F:__, *i*F:sg]. As McCloskey and my informants report, these are grammatical when coordinated non-nominals refer to a single proposition or a location. Hence, in these cases, they are consistent with the atomicity imposed by [sg] in (29) and result in grammaticality.

4. Conclusion

This paper has investigated agreement between non-nominal subjects and verbs. I have pointed out an issue not addressed in the literature: although ϕ -feature values on non-nominal heads, i.e., C, P and A, are not specified lexically unlike N heads, non-nominal subjects show both singular and plural subject-verb agreement. To solve this conflict, this paper has proposed that non-nominal subjects have only the semantic Number value specified on their Ds. I have argued that this defective Number feature leads to the semantically conditioned verbal agreement.

*I am grateful to Etsuro Shima and Yoshiaki Kaneko for their helpful suggestions and invaluable comments. I would also like to thank Stanley Dubinsky, Satoru Kanno, Takayuki Kimura, Hirokazu Tsutsumi and Kunio Yanagisawa, for comments and discussion on this work. Thanks also go to my informants. All remaining errors and inadequacies are of course my own.

Notes

1) On the contrary, Ross (1973/2004), for example, argues in his ‘Nouniness’ paper that conjoined sentential subjects do not trigger plural agreement:

- (i) *That he lost and that you won are wonderful

- 2) I owe examples in (3b) and (7b) to Stanley Dubinsky (p.c.).
- 3) The judgments without citation belong to my informants.
- 4) Matsubara (2000), however, argues that PP subjects inherently have complete φ -features. I leave this issue open for future study.
- 5) Hartman (2012: 51) attributes the observation regarding the *there* construction (cf. (11)) to Postal (2003). The fact concerning the locative inversion construction (cf. (12)) is originally reported in Bresnan (1995: 40), which credits the observation to David Pesetsky.
- 6) Takahashi (2010) proposes for sentential subjects that only D is base-generated and moves through Spec,TP to Spec,CP; In Spec,CP, the CP complement to D is late merged to the D (Wholesale Late Merger).
- 7) In the satellite analysis, Moulton (2013: 287) argues that the null anaphoric element in this structure is a null complement anaphora. He, however, does not address the issue of agreement or of φ -feature. Another possibility is that this \emptyset_D might be a silent counterpart of the pronouns in the following examples:
 - (i) a. Mary knows that John is crazy and that Bill is a genius. She discovered
it/#them recently. (Moltmann (1997: 237))
 - b. Mary found out that x is four and that x is a prime number, but (?)they/#it
contradict(s) each other. (Moltmann (1997: 238))
- 8) When CP/PP/AP complements to D is conjoined, the previous analyses either assume that the D bears the *plural* Number feature (e.g., Davies and Dubinsky (1998:

Agreement Features and Non-nominal Subjects

85-86)), or remain totally silent about agreeing features.

9) Given that CPs sometimes cannot appear in the position where nominal DPs can (e.g., complements to P), one might wonder why non-nominal DP in (32) is not available in such positions:

- (i) a. *We talked about that Mary was retiring.
- b. *I was surprised at that Mary is retiring.
- c. *Is this related to that Mary is retiring?
- d. *You can count on that Mary is retiring.

(cf. We talked about the fact that Mary was retiring, etc.)

(Hartman (2012: 65))

With data from Russian and Greek, Hartman (2012: 65) observes that non-nominal DPs are only available when some lexical case assigned by a verb, adjective or preposition would appear on their D. On the other hand, English, where morphological case is never expressed in non-nominal DPs, object positions are never available for them. However, even in subject positions, English non-nominal DPs never occur with overt case marker, which requires a further explanation.

This paper alternatively suggests that one difference between nominal DPs and non-nominal DPs in (32) has something to do with the following contrast: Nominal DPs include N, while non-nominal subjects don't. Bruening (2009, 2019, 2020) argues that verbs select Ns when they select nominals, but they never select Ds; In conventionalized expressions such as idioms and collocations, verbs require a fixed N, but the choice of D is open:

- (ii) a. jump the gun: “before you all jump another gun”
- b. bark up the wrong tree: “Have you ever barked up a wrong tree?”; “you’re

Takaaki Hirokawa

- barking up another wrong tree”
- c. bring home the bacon: “I still need to bring home some bacon occasionally.”
 - d. sell X down the river: “you just sold yourself down another river”
 - e. pull the wool over X’s eyes: “Tol’ ye to go home to the ole man, an’ pull some more wool over his eyes!”
 - f. toe the line: “Pravda began to toe a line approved by Stalin and Kamenev”

(Bruening (2020: 15))

Given that what is selected in nominals is N, but not D, nominal DPs can be selected by Ps, whereas non-nominal DPs cannot, since only the former contains Ns. However, this account remains highly speculative, and I hope to return to this issue in future work.

10) The question regarding other features remains open for future research.

11) As Satoru Kanno (p.c.) pointed out, since Ritter (1991), Number has been considered as a specific functional projection NumP within the extended nominal projection. The previous studies this paper adopts on sentential subjects, however, do not address the φ -related functional projections and just assume the D to be a locus of the φ -feature bundle, or simply do not mention the φ -feature on sentential subjects at all. Takahashi’s (2010) Wholesale Late Merger approach, for example, assigns a crucial role to the null, bare D, which apparently seems to be inconsistent with Ritter’s view. I hope to consider in the future the questions as to whether φ -features are split into functional projections, how the layer of such φ -projections is integrated with the structure of non-nominal subjects, whether the finer structure of sentential subjects is compatible with existing analyses, and so on.

12) According to Chomsky’s (2020, 2021) observation, coordinated gerunds cannot

Agreement Features and Non-nominal Subjects

express multiple events. However, it is not clear that gerundive subjects show singular agreement only. While verbal gerunds in Chomsky's examples resist plural agreement, verbal gerunds may in fact allow plural verbs:

- (i) Getting a dissertation fellowship, completing his degree, and getting a tenure-track job (all) seem/*seems to be what John wants.

(Stanley Dubinsky (p.c.))

Stanley Dubinsky (p.c.) suggests that in (i), the separate nature of each of these goals renders them understandable as multiple events. The contrast between (i) and (9) might be consistent with my proposal but must await future research.

Further, nominal gerunds allow both singular and plural agreement:

- (ii) a. The singing of songs and drinking of wine was very relaxing.
 b. The singing of songs and drinking of wine were very relaxing.

(Moltmann (1997: 235, (45) and fn.7))

Moreover, coordinated deverbal nominals also allow variable agreement:

- (iii) a. The arrest of Mary and execution of John was/were done in a hurry.
 b. The treatment of John and accusation of Mary was/were embarrassing.

(Moltmann (1997: 235, (45) and fn.7))

Thus, it remains uncertain how the structural variation and nominal nature of gerunds correlate with subject-verb agreement. I hope to be able to address this issue in future work.

13) See Moltmann (1997: 233-240) for the mass-like nature of CPs, gerunds and

deverbal nominals, which is consistent with (29a).

14) Assuming the structure in (20b) would raise an issue of feature resolution, that is, the issue of how to determine the ϕ -value of &P from those of its conjuncts. One possibility is to posit the same [uF : __, iF :sg/pl] Number value on the &P as well as non-nominal Ds. This paper leaves this issue for future study.

References

- Alrenga, Peter (2005) "A Sentential Subject Asymmetry in English and Its Implications for Complement Selection," *Syntax* 8, 175-207.
- Bresnan, Joan (1995) "Category Mismatches," *Theoretical Approaches to African Linguistics*, ed. by Akinbiyi Akinlabi, 19-46, African World Press, Trenton, NJ.
- Bruening, Benjamin (2009) "Selectional Asymmetries between CP and DP Suggest that the DP Hypothesis is Wrong," *U. Penn Working Papers in Linguistics* 15(1), 26-35.
<<http://repository.upenn.edu/pwpl/vol15/iss1/>>
- Bruening, Benjamin (2019) "Idioms, Collocations, and Structure: Syntactic Constraints on Conventionalized Expressions," *NLLT* 38, 365-424.
- Bruening, Benjamin (2020) "The Head of the Nominal is N, not D: N-to-D Movement, Hybrid Agreement, and Conventionalized Expressions," *Glossa: A Journal of General Linguistics* 5(1):15, 1-19.
- Chomsky, Noam (2020) "Minimalism: Where We Are Now, and Where We Are Going," a talk given at the 161st meeting of the Linguistic Society of Japan.
<<https://www.youtube.com/watch?v=X4F9NSVVuw>>
- Chomsky, Noam (2021) "Genuine Explanations," a talk given at WCCFL 39.
<<https://www.youtube.com/watch?v=F6SbPKmVNVQ>>

Agreement Features and Non-nominal Subjects

- Davies, William and Stanley Dubinsky (1998) "Sentential Subjects as Complex NPs: New Reasons for an Old Account of Subjacency," *Papers from the 34th Annual Meeting of the Chicago Linguistic Society (CLS 34.1)*, 83-94.
- Davies, William and Stanley Dubinsky (1999) "Functional Structure and a Parameter Account of Subject Properties," *Proceedings of the 15th Eastern States Conference on Linguistics (ESCOL '99)*, 48-59.
- Davies, William and Stanley Dubinsky (2001) "Functional Architecture and the Distribution of Subject Properties," *Objects and Other Subjects: Grammatical Functions, Functional Categories, and Configurationality*, ed. by William D. Davies and Stanley Dubinsky, 247-279, Kluwer.
- Davies, William and Stanley Dubinsky (2009) "On the Existence (and Distribution) of Sentential Subjects," *Hypothesis A / Hypothesis B: Linguistic Explorations in Honor of David M. Perlmutter*, ed. by Donna Gerds, John Moore and Maria Polinsky, 111-128, MIT Press, Cambridge, MA.
- Dik, Simon C. (1968) *Coordination: Its Implications for the Theory of General Linguistics*, North-Holland Publishing Company, Amsterdam.
- van Eijk, Jan (1983) "Discourse Representation Theory and Plurality," *Studies in Modeltheoretic Semantics*, ed. by Alice G. B. ter Meulen, 63-83, Foris, Dordrecht.
- Elbourne, Paul (1999) "Some Correlations between Semantic Plurality and Quantifier Scope," *NELS 29*, 81-92.
- Hartman, Jeremy F. (2012) *Varieties of Clausal Complementation*, Doctoral dissertation, MIT.
- Heim, Irene (1991) "Artikel und Definitheit," *Semantik: Ein Internationales Handbuch der Zeitgenössischen Forschung*, ed. by Arnim von Stechow and Dieter Wunderlich, 487-535, de Gruyter, Berlin/New York.
- Hoeksema, Jack (1983) "Plurality and Conjunction," *Studies in Modeltheoretic Semantics*, ed. by Alice G. B. ter Meulen, 63-83, Foris, Dordrecht.
- Iatridou, Sabine and David Embick (1997) "Apropos *Pro*," *Language* 73, 58-78.

- Iordăchioaia, Gianina (2020) "D and N are Different Nominalizers," *Glossa: A Journal of General Linguistics* 5.1.53, 1-25.
- Johannessen, Janne Bondi (1996) "Partial Agreement and Coordination," *Linguistic Inquiry* 27, 661-676.
- Johannessen, Janne Bondi (1998) *Coordination*, Oxford University Press, Oxford.
- Koster, Jan (1978) "Why Subject Sentences Don't Exist," *Recent transformational studies in European languages*, ed. by Samuel Jay Keyser, 53-64, MIT Press, Cambridge, MA.
- Levine, Robert, D. (1989) "On Focus Inversion: Syntactic Valence and the Role of a SUBCAT List," *Linguistics* 27, 1013-1055.
- McCloskey, James (1991) "There, It, and Agreement," *Linguistic Inquiry* 22, 563-567.
- McNally, Louise (1993) "Comitative Coordination: A Case Study in Group Formation," *NLLT* 11, 347-379.
- Moltmann, Friederike (1997) *Parts and Wholes in Semantics*, Oxford University Press, Oxford/New York.
- Morgan, Jerry L. (1970) "Verb Agreement as a Rule of English," *Papers from the 6th Regional Meeting of Chicago Linguistic Society (CLS 6)*, 278-286.
- Morgan, Jerry L. (1984) "Some Problems of Agreement in English and Albanian," *Proceedings of the 10th Annual Meeting of the Berkeley Linguistics Society*, 233-247.
- Moulton, Keir (2013) "Not Moving Clauses: Connectivity in Clausal Arguments," *Syntax* 16, 250-291.
- Ott, Dennis (2017) "Clausal Arguments as Syntactic Satellites: A Reappraisal," *Labels and Roots*, ed. by Leah Bauke and Andreas Blümel, 127-160, de Gruyter, Berlin/New York.
- Postal, Paul (2003) *Skeptical Linguistic Essays*, Oxford University Press, Oxford.
- Quirk, Randolph, Sidney Greenbaum, Geoffrey. Leech and Jan Svartvik (1972) *A Grammar of Contemporary English*, Longman, London.

Agreement Features and Non-nominal Subjects

- Ritter, Elizabeth (1991) "Two Functional Categories in Noun Phrases: Evidence from Modern Hebrew," *Perspectives on Phrase Structure: Heads and Licensing*, ed. by Susan D. Rothstein, 37–62, Academic Press, San Diego, CA.
- Reid, Wallis (1984) "Verb Agreement as a Case of Semantic Redundancy," *Proceedings of the First Eastern States Conference on Linguistics*, 104-115.
- Ross, John Robert (1973) 'Nouniness,' *Three Dimensions of Linguistic Research*, ed. by Osamu Fujimura, 137-257, TEC Company Ltd., Tokyo
- Ross, John Robert (2004) 'Nouniness,' *Fuzzy Grammar: A Reader*, ed. by Bas Aarts, David Denison, Evelien Keizer, and Gergana Popova, 137-257, Oxford University Press, Oxford.
- Roussou, Anna (1991) "Nominalized Clauses in the Syntax of Modern Greek," *UCL Working Papers in Linguistics 3*, 77-100, University College London.
- Sag, Ivan A., Gerald Gazdar, Thomas Wasow, and Steven Weisler (1985) "Coordination and How to Distinguish Categories," *NLLT 3*, 117-171.
- Sauerland, Uli (2003) "A New Semantics for Number," *Proceedings of the 13th Semantics and Linguistic Theory Conference (SALT 13)*, 258-275.
- Sauerland, Uli and Paul Elbourne (2002) "Total Reconstruction, PF-movement, and Derivational Order," *Linguistic Inquiry 33*, 283-319.
- Smith, Peter W. (2015) *Feature Mismatches: Consequences for Syntax, Morphology and Semantics*, Doctoral dissertation, University of Connecticut, Storrs, CT.
- Smith, Peter W. (2017) "The Syntax of Semantic Agreement in English," *Journal of Linguistics*, 1-41.
- Takahashi, Shoichi (2010) "The Hidden Side of Clausal Complements," *NLLT 28*, 343-380.
- Wechsler, Stephen and Larisa Zlatić (2000) "A theory of Agreement and Its Application to Serbo-Croatian," *Language 76*, 799-832.
- Wechsler, Stephen and Larisa Zlatić (2003) *The Many Faces of Agreement*, CSLI, Stanford, CA.

Takaaki Hirokawa

Zamparelli, Roberto (2008) "Features, Facts, and Clausal Agreement," *Lingue e Linguaggio* 7.1, 111-133.

Department of English Linguistics

Graduate School of Arts and Letters

Tohoku University

27-1 Kawauchi, Aoba-ku, Sendai, Miyagi, 980-8576

E-mail: takaaki.hirokawa@gmail.com