On multi-valued Ns and Ts in number concord and agreement

Zheng Shen
University of Connecticut

1 Introduction

One long-standing question in theoretical linguistics concerns whether nominal concord in (1) and argument-predicate agreement in (2) can be subsumed under a unified account of Agree (Baker 2008; Danon 2011; Carstens & Diercks 2013 a.o.) or if they involve different mechanisms (Norris 2014 a.o.).

(1) a. This$_{[SG]}$ student$_{[SG]}$ is tall. (2) a. John$_{[SG]}$ runs$_{[SG]}$.
      b. *These$_{[PL]}$ student$_{[SG]}$ is tall.   b. *John$_{[SG]}$ run$_{[PL]}$.

In this paper, I present a novel asymmetry between nominal concord and predicate-argument agreement with respect to multi-valuation. Namely, a noun valued by two or more singular features is spelled out as singular, whereas a T head valued by two or more singular features is spelled out as plural (or dual). The nature of this asymmetry might indicate that agreement and nominal concord involve different mechanisms; however, I argue for an account of this asymmetry that is compatible with a unified analysis of both phenomena. I use the term *multi-valuation* to refer to the configuration in (3) wherein one probe stands in feature dependency with two goals. I focus mainly on number agreement.

(3)   Goal$_1$ [val$_1$]   Goal$_2$ [val$_2$]   Probe [?]

2 Multi-valued Ns
2.1 Nominal Right Node Raising

Within the nominal domain, multi-valuation occurs in the nominal right node raising construction (NRNR). Shen (2016) observes that although the intended references of the subjects in (4) and (5) are plural, the head nouns are required to be singular.[1] This same pattern has been observed in English, German, Dutch, Icelandic, Polish, Serbo-Croatian, Bulgarian, and Greek, among other languages.

(4) a. This and that student are a couple.
      b. *This and that students are a couple.
          Intended meaning: 'This student and that student are a couple.'

(5) a. This tall and that short student are a couple.

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[1]The predicate *are a couple* is used throughout to make sure that the subject refers to two individuals and that each conjunct is singular.

b. *This tall and that short students are a couple.
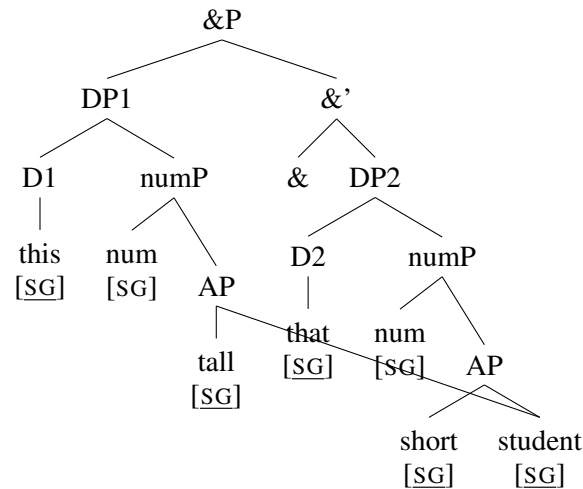   'This tall student and that short student are a couple.'

Shen argues for a multi-dominance account of nominal right node raising. See Shen 2016 for the detailed analysis. I present a sample derivation in (6). In (6a), the subject *this tall and that short student* consists of two conjoined DPs with two distinct demonstrative-NUM-ADJ configurations co-occurring with a single structurally shared head noun.[2] Both NUM heads carry valued singular features [SG]. Demonstratives, adjectives, and nouns carry unvalued features [__]. In (6b), the NUM head in the first conjunct values the unvalued features in the first conjunct, and the NUM head in the second conjunct does the same to the second conjunct. As a result, the multi-dominated head noun *student* is valued by two singular values, i.e. multi-valued. What is important for our purposes is that the multi-valued noun is spelled out as singular.

(6) a. this tall and that short student
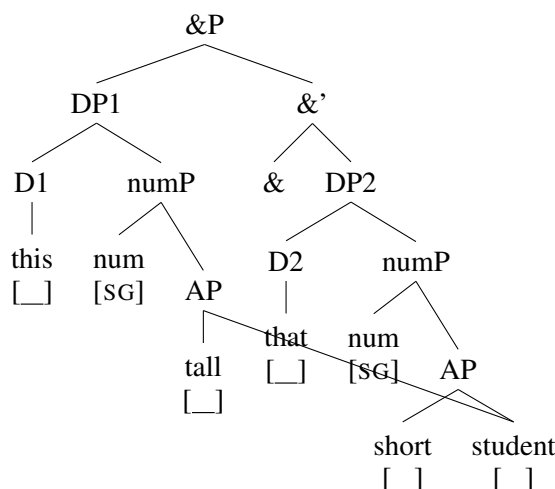
    b. this tall and that short student

_____

[2]Note that how we choose to analyze APs is not important to our purposes. The multi-dominance account of NRNR is compatible with theories in which AP is adjoined to NP (Valois 1991) as well as those where it sits in the specifier position of some functional projection (Cinque 2010).

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                           &P
                    ┌───────┴───────┐
                  DP1               &'
               ┌───┴───┐         ┌───┴───┐
              D1      numP       &      DP2
               │      ┌─┴──┐           ┌─┴────┐
             this    num   AP         D2     numP
             [SG]   [SG]    │          │     ┌──┴──┐
                           tall      that   num    AP
                           [SG]      [SG]   [SG]    │
                                                ┌───┴───┐
                                             short   student
                                             [SG]     [SG]
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2.2   NRNR is not NP Ellipsis

Before moving on to multi-valuation cases within the TP domain, I'd like to address potential alternative accounts for NRNR. Apart from multi-dominance, two other analyses have been proposed for right node raising constructions, namely the across-the-board movement (ATB) analysis (Sabbagh 2007 a.o.) and the ellipsis analysis (Hartmann 2000 a.o). The ellipsis analysis can straightforwardly generate the singular noun in NRNR. In (7), the subject starts out as the conjunction of two full singular DPs. The first head noun is elided and the singular head noun in NRNR is generated. In what follows, I present two challenges for this analysis of NRNR.

(7)   This tall ~~student~~ and that short student are a couple.

2.2.1   Elements that do not license ellipsis but can license singular nouns in NRNR

The first argument against the ellipsis analysis for NRNR involves cases where ellipsis is banned but the singular noun in NRNR is still possible. Any analysis that tries to reduce NRNR to ellipsis would not predict cases of this nature; however, cases like this occur widely across languages. In English, it is well known that adjectives do not license ellipsis of the head noun in (8a,c).[3] However, as we have already seen, singular nouns in NRNR are licensed under adjectives, as shown in (8b,d). The ellipsis analysis needs to explain why the banned ellipsis becomes available in NRNR. Similar facts obtain in German. German possessive pronouns cannot license ellipsis of the possessee NPs, as shown in (9a); however, the singular noun in NRNR under possessive pronouns is acceptable in (9b).

(8)   English (adjectives)
    a.   *John likes this tall student and Mary likes that short ~~student~~. (*NPE)
    b.   This tall and that short student are a couple. (NRNR)
    c.   *I like Mary's tall student and he likes John's short ~~student~~ (*NPE)

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[3]I leave out discussion of *one*-substitution in English.

d. I like Mary's tall and John's short student. (NRNR)

(9) German (possessive pronouns)
a. *Dein Student und mein ~~Student~~ sind ein Paar. (*NPE)
    your student and my ~~student~~ are a couple
    'Your student and my student are a couple.'
b. Mein und dein Student sind ein Paar. (NRNR)
    my and your student are a couple
    'My and your student are a couple.'

In Spanish and Italian, only post-nominal adjectives can license ellipsis, whereas post-nominal ones cannot. In (10a) *supuesta* 'alleged' is obligatorily prenominal in Spanish, and ellipsis is ruled out. In (10b), on the other hand, *supuesta* can be used in NRNR with a singular head noun.

(10) Spanish and Italian (prenominal adjectives)
a. *Ayer   vi a la verdadera terrorista y a la supuesta (*NPE)
    yesterday saw to the true   terrorist and to the alleged
    'Yesterday I saw the true terrorist and the alleged one.'
b. La supuesta y la verdadera terrorista son pareja. (NRNR)
    the alleged and the true   terrorist are couple.
    'The alleged terrorist and the true terrorist are a couple.'

Lastly, in Bosnian-Croatian-Serbian, non-agreeing adjectives like *braon* 'brown' and *bež* 'beige' do not license ellipsis; however, singular nouns can be naturally licensed under these non-agreeing adjectives in NRNR.[4]

(11) BCS (non-agreeing adjectives)
a. ?*Ivan je izgubio braon čarap, a   Marko je izgubio bež. (*NPE)
    Ivan is lost   brown sock, and Marko is lost   beige
    'Ivan lost a brown sock and Marko lost a beige one.'
b. braon i   bež čarap su par. (NRNR)
    brown and beige sock are pair.
    'The brown sock and the beige sock are a pair.'

The cross-linguistic data presented above confirm the presence of a discrepancy in the distribution of NRNR and ellipsis across a variety of environments and languages. Accounts that attempt to reduce NRNR to ellipsis would have to account for why the same licensers behave differently in an NRNR environment versus other environments. In the next section, I present another argument and show that NP ellipsis is banned in general within the NRNR environment.

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[4]In all the cases above neither the ban on ellipsis nor the available singular nouns in NRNR involve subject-object asymmetry.

2.2.2 Elements that do license ellipsis but that cannot license singular nouns in NRNR

The second argument against an ellipsis analysis concerns cases in which NPE is possible in general but in which singular nouns in NRNR are not. As we have already seen, possessive DPs in English do license ellipsis. However, when *John's and Mary's* is used in NRNR, the singular possessee noun is not possible, as is shown in (12). This shows that singular nouns in NRNR do not involve ellipsis; what's more, it indicates that NP ellipsis is banned in the NRNR environment.

(12)　　English (bare possessive DPs)
　　　　a.　I like John's student and Bill likes Mary's ~~student~~. (NPE)
　　　　b.　*John's and Mary's student are a couple.

In Spanish, ellipsis is only licensed under the strong version of the singular masculine indefinite article *uno*; the weak version *un* does not license the ellipsis of the head noun. The distribution of the singular noun in NRNR shows a complementary distribution with ellipsis: the singular noun is licensed under the weak version but not under the strong version, as shown in (13).

(13)　　Spanish (*uno* is required in NPE but forbidden in NRNR)
　　　　a.　Un verdadero ~~terrorista~~ y　un supuesto terrorista se encontraron
　　　　　　a   true　　　 ~~terrotist~~ and an alleged　terrorist SE met
　　　　b.　*Uno verdadero y　un supuesto terrorista se encontraron
　　　　　　One true　　　and an alleged　terrorist SE met
　　　　　　'A true and an alleged terrorist met.'

(14) shows that in Dutch, when the singular neuter noun is elided under an adjective within an indefinite DP, the inflectional marker *-e* on the adjective is obligatory. When the noun is not elided, the marker *-e* is banned. (15) shows that NRNR patterns with the non-elliptical environment but not the elliptical environment: the *-e* marker is banned.

(14)　　een groen(*-e) boek
　　　　a　green-e　　book
　　　　'a green book'

(15)　　een rood boek en een
　　　　a　red book and a
　　　　groen*(-e) ~~boek~~
　　　　green-e　　~~book~~
　　　　'a red book and a green one'

(16)　　The inflectional ending is forbidden in NRNR → no NPE in NRNR.
　　　　a.　een groen en een rood boek zijn allebei duur
　　　　　　a   green and a   red book are both　expensive.
　　　　b.　*een groen-e ~~boek~~ en een rood boek zijn allebei duur
　　　　　　a   green-e ~~book~~ and a   red book are both　expensive.
　　　　　　'a green book and a red book are both expensive.'

In line with the first argument of the previous section, these cross-linguistic discrepancies between the distribution of ellipsis and that of singular nouns in NRNR argue

against any analysis that tries to reduce NRNR to ellipsis of the head noun. Furthermore, the cases shown in this section indicate that even common ellipsis licensers fail to license ellipsis in the NRNR construction. While ellipsis is licensed in other cases by licensers like English possessive DPs, it is ruled out in NRNR. The same holds at least for German, Dutch, and Spanish. This ban on ellipsis in NRNR can be subsumed under the well-known Backward Anaphora Constraint (BAC) in (17) (Hankamer & Sag 1976 a.o.). In (18), the elided noun in the first conjunct precedes and m-commands its antecedent in the second conjunct, and ellipsis is thus ruled out. Consequently, the ellipsis analysis of NRNR lacks empirical support.

(17)   Backwards Anaphora Constraint (BAC): An anaphor cannot be interpreted as being in anaphoric relation to a segment that it precedes and commands in surface structure.

(18)   *John's ~~student~~ and Mary's student are a couple.

Based on the discussion above, NRNR involves a multi-valued N, and when a noun is valued by two singular goals, it is spelled out as singular.

(19) $\text{Goal}_{[\text{SG}]}$ $\text{Goal}_{[\text{SG}]}$ $\text{Noun}_{[\text{SG}]}$

3 Multi-valued Ts

This section discusses cases of multi-valued Ts in a variety of languages and shows that the multi-valued Ts are different from multi-valued Ns in that they are spelled out as plural.

3.1 Summative agreement in TP RNR

Postal (1998), Yatabe (2003), and Grosz (2015) observe a pattern of summative agreement in (20) wherein the auxiliary *have* shows plural agreement despite the fact that both embedded subjects (*Bill* and *John*) are singular. Grosz notes that a number of languages, including Western Armenian, Standard Gujarati, Hebrew, Italian, Austrian German, and Czech show summative agreement in RNR.[5]

(20)   Sue is proud that $\text{Bill}_{[\text{SG}]}$ and Mary is glad that $\text{John}_{[\text{SG}]}$ $\text{have}_{[\text{PL}]}$ traveled to Cameroon.

Grosz (2015) argues for a multi-dominance analysis of the summative agreement in (21) wherein T merges with both PerfPs and agrees with both embedded subjects. Following this analysis, T in TP RNR is multi-valued by two singular values. What

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[5]Note that the acceptability of summative agreement in (20) is subject to inter-speaker variation. At least three experiments have been conducted by Yatabe (2003), Grosz (2015), and Barros & Vicente (2011), finding no significant difference in acceptability between singular and summative agreement. The average rating is approximately 2 on a 5 point scale in Barros & Vicente 2011 and approximately 2.5 on a 5 point scale in Grosz 2015. Following Barros & Vicente (2011), Grosz (2015) suggests that singular agreement involves an ellipsis analysis of RNR. Brian Dillon (p.c.) suggests that the string *Bill and Mary's* in (20) creates an illusory controller for the plural agreement, but further experimental evidence is needed to confirm this.

is important here is that the multi-valued T in (20) is spelled out as plural. One can immediately see the difference between multi-valuation in the NP domain versus the TP domain.

(21)
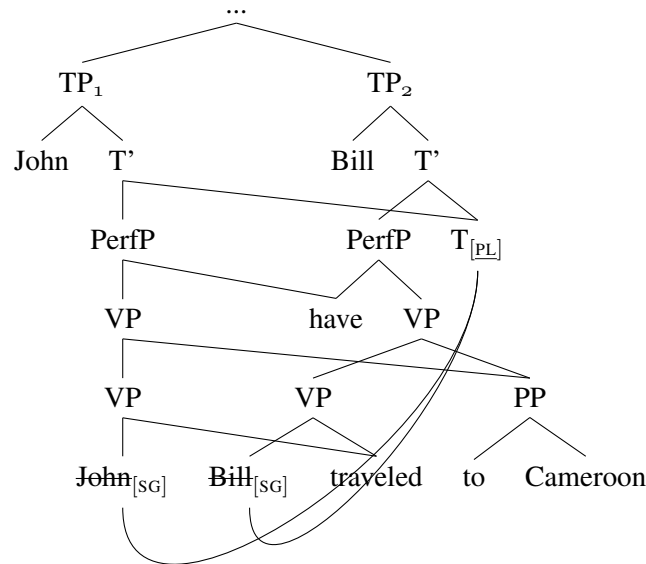
3.2 Composed Plural in Nocte

The second case of multi-valuation in TP does not involve Right Node Raising but rather subject/object agreement. Gluckman (2015) observes that in Nocte, the marker *-e* used on intransitive verbs in sentences with 1st person plural subjects, as in (22), is also used on the transitive verbs in sentences in which the subject is 1st person singular and the object is 2nd person singular, as in (23).[6,7] What is important is that in (23), neither the subject nor the object is plural and yet the verbal marker is plural.

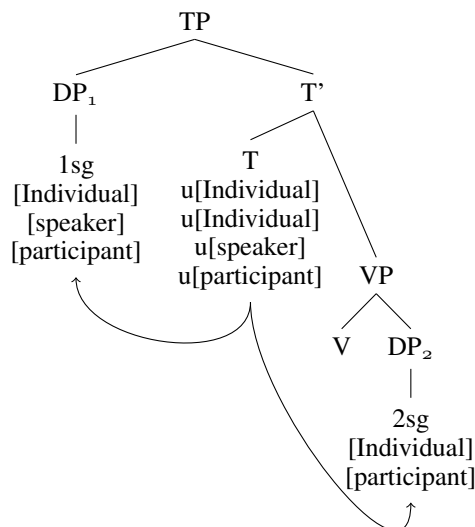| (22)	ni	roantang	rang-	ka	**-e**.	(23)	nga	-ma	nang	hetho	**-e**.
	$1_{[PL]}$	always	asp-	go	$-1_{[PL]}$.		$1_{[SG]}$	-nom	$2_{[SG]}$	teach	$-1_{[PL]}$.
	'We always go.'						'I shall teach you.'				

Gluckman proposes that Nocte has both subject agreement and object agreement and that the *-e* marker is a local portmanteau that spells out both subject and object agreement. In particular, the plural marking in (23) is a 'composed plural' by two singular arguments. In (24), the probe T has two individual features, one speaker feature, and one participant feature. It first agrees with the 2nd person

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singular object and checks one individual feature and the participant feature. The probe then agrees with the 1st person singular subject and checks the other individual feature and the speaker feature. The checked features are identical to the 1st person plural, and therefore the same morphological marker is used.

(24)

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                          TP
                         /  \
                      DP₁     T'
                       |     /  \
                      1sg   T     VP
                 [Individual] u[Individual]  / \
                   [speaker] u[Individual]  V   DP₂
                [participant] u[speaker]          |
                             u[participant]      2sg
                                            [Individual]
                                            [participant]
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The upshot of this section is that both TP RNR in a variety of languages and local portmanteau agreement in Nocte-like languages involve multi-valuation in which T heads valued by two or more singular features are spelled out as plural, as shown schematically in (25). In comparison with the multi-valued NP, we can clearly see an asymmetry between the TP domain and the NP domain in (26).

(25) $\text{Goal}_{[SG]}$ $\text{Goal}_{[SG]}$ $\text{T}_{[PL]}$

(26)   **Multi-Valuation Asymmetry**: When N is valued by multiple [SG] values, it is spelled out as singular; when T is valued by multiple [SG] values, it is spelled out as plural.

4 Proposal and derivation
4.1 Proposal
I assume feature dependency in the TP domain involves the operation Agree. Whether feature dependency in the NP domain also involves Agree or some distinct mechanism is a matter of ongoing debate (see Baker 2008; Danon 2011; Carstens & Diercks 2013; Norris 2014). Cross-linguistic data from previous sections showcase the Multi-Valuation Asymmetry between the NP and TP domains, which may indicate that the mechanisms behind feature valuation of N and feature valuation of T are distinct. In this section, I argue for an account for the asymmetry that is compatible with a unified analysis of predicate-argument agreement and nominal concord. Rather than proposing different mechanisms, I attribute the asymmetry to differing feature setups between N and T. Following the idea in Gluckman 2015, I propose

that T heads have two unvalued number features. Note that this assumption differs from Gluckman's proposal in that I assume a traditional singular/dual/plural feature inventory rather than the [individual] feature. Furthermore, I propose that Ns have only one unvalued number feature. The feature setups are schematized in (27). The spell-out rules I assume are in (28), in which a single instance of the singular feature is spelled out as singular, whereas multiple instances of singular features as well as any instance of plural features are spelled out as plural.

(27) a. N = [Num:__]   (28) a. [$\underline{\text{SG}}$] $\leftrightarrow$ singular
      b. T = [Num:__, Num:__]   b. [$\underline{\text{SG}}$, $\underline{\text{SG}}$] $\leftrightarrow$ plural
                                        c. [$\underline{\text{PL}}$, $\underline{\text{SG}}$] $\leftrightarrow$ plural
                                        d. [$\underline{\text{PL}}$, $\underline{\text{PL}}$] $\leftrightarrow$ plural

4.2 Derivation

Before deriving the asymmetry laid out above, it is necessary to spell out the assumptions I follow in addition to the proposed feature setups. I assume that morphological agreement and concord are reflexes of Agree. I follow Chomsky (2001); Bhatt & Walkow (2013) in assuming a two-step Agree: the probe first MATCHES with the goal to ensure feature identification, then the feature on the probe gets VALUED by that on the goal. I assume a functional NUM head carries valued number features; other elements such as determiners, adjectives, and nominals come with unvalued number features.

Now, I shall explain how the agreement patterns associated with multi-valuation are derived. In the NRNR case in (29) where a nominal is valued by two singular features, the unvalued feature on the head noun matches with the unvalued features on both adjectives, establishing feature identification. The unvalued feature on A_1 matches with and gets valued by the valued feature [SG] on NUM_1; the unvalued feature on A_2 does the same with NUM_2. Now that both adjectives have [SG], the head noun in principle can get two [SG]s. However, since the head noun only has one unvalued number feature, only one of the two [SG]s can get copied onto the head noun. In this case, the two values are the same, and therefore it is trivial which [SG] gets to the head noun in the end.[8] As a result, the multi-valued noun is spelled-out as singular according to the spell-out rules in (28).[9]

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[8]One way to implement this is by proposing that valuation is postponed to PF and the linearly closest [SG] gets copied to the head noun.

[9]The proposal also works if the head noun skips the unvalued features on the adjectives and matches with the valued features on NUM.

(29)   One tall and one short student are a couple.
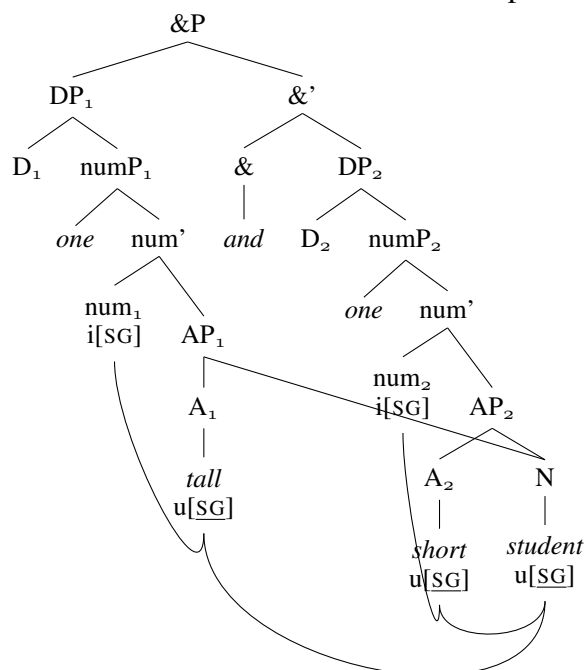
With respect to the summative agreement case in (30a), Grosz (2015) argues for a multi-dominance analysis (see (21) for the structure). The multi-dominated T head matches with both embedded subjects *Bill* and *John*, each of which has a [SG]. Similar to the multi-dominance structure in NRNR, the T head is valued by two [SG] values simultaneously. Given my proposal that the T head has (at least) two unvalued number features, it can host both values, namely one [SG] from *Bill* and one [SG] from *John*. The T head with two instances of [SG] is thus spelled out as its plural form in (30c).

(30)   a.   Sue's proud that Bill and Mary's glad that John have travelled to Cameroon.
       b.   Sue's proud that **Bill**[SG] and Mary's glad that **John**[SG] **have**[__,__] travelled to Cameroon.
       c.   Sue's proud that **Bill**[SG] and Mary's glad that **John**[SG] **have**[SG,SG] travelled to Cameroon.

To deal with cases of composed plurality observed in Nocte and Nocte-like languages, I adopt the essence of Gluckman (2015)'s analysis, as shown in (24). As I proposed, the T head has two unvalued number features, which first matches with and gets one [SG] value from the 2nd person singular object. Then it gets another [SG] valued from the 1st person singular subject. The two [SG] values are realized as the plural form of T.

(31)   a.   Subject[SG] T[__,__] Object[SG]
       b.   Subject[SG] T[**SG**,__] **Object**[SG]
       c.   **Subject**[SG] T[SG,**SG**] Object[SG]

As shown above, despite the apparent asymmetry between predicate-argument agreement and nominal concord with respect to multi-valuation, the current proposal can derive the different multi-valuation patterns while maintaining an unified analysis of agreement and concord based on a singular account of Agree. In the next section, I provide empirical evidence for my proposal from cases of mismatched agreement in which the two goals have distinct values.

4.3   Evidence from mismatch

The current proposal is further supported by cases of agreement mismatch under multi-valuation. (32a,c) are well-formed since the head nouns show the same value as the second conjunct. (32b,d) are unacceptable. More concretely, when the two goals with which the probe agree bear different feature values, the head noun in NRNR shows the same value as the linearly closest NUM head; that is, NRNR shows closest conjunct agreement in mismatch cases.

(32)   Mismatch in Multi-valued N: Closest Conjunct Agreement

      a.   One tall and ten short students know each other.
      b.   *One tall and ten short student know each other.
      c.   Ten tall and one short student know each other.
      d.   *Ten tall and one short students know each other.

This behavior is expected under the current proposal. When the two goals in NRNR are of the same value, the head noun gets that value. Now that the two goals that the head noun agrees with are of different values, and given that the head noun only has one unvalued number feature (that is, there is only one 'slot' for one value), the valuation operation cannot proceed. Here I follow Bhatt & Walkow (2013), who argue that when the valuation cannot proceed in the syntax, it is postponed to PF, where linearization occurs. The probe then will choose the value of the linearly closest goal with which it has matched. I argue that the same occurs under NRNR, as shown in (33): valuation of the head noun in cases of mismatched NRNR is postponed to PF, at which point the value on the closest (second) NUM head is copied onto the noun, producing closest conjunct agreement.[10]

(33)   a.   Ten tall$_{[PL]}$ and one short$_{[SG]}$ student$_{[\_]}$ are a couple.
      b.   Ten tall$_{[PL]}$ and one short$_{[SG]}$ student$_{[SG]}$ are a couple.

The mismatched case of multi-valued Ts is showcased in English TP RNR. The current proposal that Ts have multiple unvalued number features predicts that the T in cases of mismatch would be spelled out as plural, identical to the matched cases. The value of the first goal would be copied onto the first number value 'slot' and the value of the second goal would be copied onto the second 'slot'. According to the spell-out rules, [PL,SG] is spelled out as plural. This prediction is borne out in (34), in which the T element *have* is plural regardless of the order of the two embedded subjects. The derivation is schematized in (35).

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[10]Note that the **matched** case, in which both goals are singular, is also compatible with the closest conjunct agreement proposal. While recognizing CCA as a viable candidate, I leave the exact valuation process in the matching cases open at present.

(34) a. Sue's proud that the twins and Mary's glad that John have traveled to Cameroon.
      b. Mary's glad that John and Sue's proud that the twins have traveled to Cameroon.

(35) a. Sue's proud that the twins$_{[PL]}$ and Mary's glad that John$_{[SG]}$ have$_{[\_\_,\_\_]}$ traveled to Cameroon.
      b. Sue's proud that the twins$_{[PL]}$ and Mary's glad that John$_{[SG]}$ have$_{[PL,SG]}$ traveled to Cameroon.

4.4 Two triggers of Closest Conjunct Agreement

The previous section shows that the mismatched cases of NRNR produce CCA pattern while the mismatched cases of TP RNR do not trigger CCA because of the presence of multiple slots for number values on T. The idea is that CCA is forced on NRNR due to the sole value slot on Ns, whereas T heads do not have this limitation, and therefore CCA is not triggered. However, CCA is observed on T in English existential constructions, as is observed by Sobin 1997; Schütze 1999; Alexiadou *et al.* 2014 and reproduced in (36). Instead of the full &P *one book and two notebooks*, the copula shows agreement with the linearly closest conjunct *one book*.[11]

(36) There is/*are [$_{\&p}$ **[one book]** and two notebooks] on the table.

One might think that featural setup of T proposed here would predict otherwise: given that T has multiple unvalued number features, CCA should not be triggered in (36). However, I argue that the presence of CCA in (36) and the absence of CCA in TP RNR are compatible with each other, given that the CCA in (36) is not triggered by the copying of multiple values onto T, but instead by another restriction on Agree. As long as the CCA in existentials is triggered by an independent restriction, this detail does not pose any challenges to the current proposal.

Smith (2015) argues for such an independent restriction: Agree targeting interpretable features (i.e. semantic agreement) can only proceed if the goal c-commands the probe, whereas Agree targeting uninterpretable features can proceed in a configuration where the probe c-commands the goal. He further assumes that &Ps in English only have interpretable features that arise from the resolution of the conjuncts. In (37) (derived from (36)), the &P does not c-command the probe T, and thus agreement cannot proceed. When semantic agreement fails, the T agrees with the highest conjunct in the &P. Since the DP in the first conjunct has uninterpretable features, agreement can proceed even when the goal is c-commanded by the probe. Following Smith (2015), CCA in English existentials is not triggered by the featural setup of T but by restrictions on Agree itself. As a result, the observed CCA does not pose a challenge to the current proposal.[12]

(37) There is one book and two notebooks on the table.

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[11]Thanks to Bob Frank for bringing up this issue.

[12]Note that in principle the argument does not rely on the specific implementation of Smith's account. As long as there is an independent restriction that triggers the CCA in existential constructions, the current proposal is not challenged.
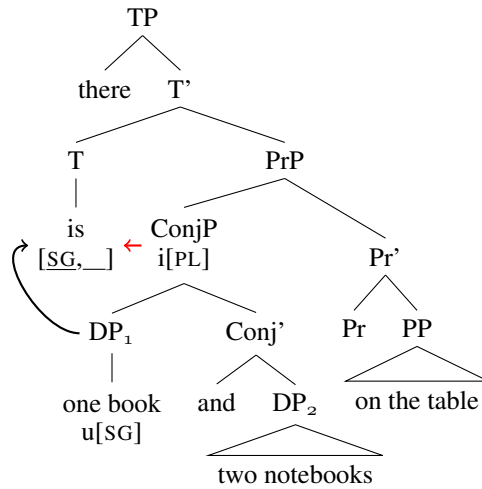
5 Conclusion and outlook

In this paper, I present cross-linguistic data exemplifying NRNR, local portmanteau, and TP RNR to argue for an asymmetry between N and T with respect to multi-valuation. I propose that this asymmetry can be accounted for by the assumption that T heads have multiple unvalued number features, while N heads have only one. This proposal is compatible with a unified analysis of concord and agreement based on a singular mechanism of Agree, and it is further supported by cases of agreement mismatch under multi-valuation. Finally, I discuss cases of CCA on T heads and two distinct triggers of CCA.

Many questions remain regarding multi-valuation and the aforesaid asymmetry. The most obvious one is whether this difference in featural setups of Ns and Ts is inherent or accidental in the languages discussed above. If such a difference is inherent to the categories, what is the deeper theoretical reason? If such a difference is accidental, one should be able to find languages with plural Ns in NRNR and/or singular Ts in TP RNR. Grosz (2015) reports several languages showing singular Ts in TP RNR (Croatian, Dutch, Greek, and northern dialects of German). However, to make sure that the T heads have only one number feature in a language, one would need to rule out alternative analyses of TP RNR, such as ellipsis. Grosz (2015) notes that Croatian may be such a language. On the N side, Harizanov & Gribanova (2015) observe that in Bulgarian (38), the head N in NRNR is plural. Russian seems to behave similarly in certain cases. Thus Bulgarian and Russian might be candidates for languages with multiple features on Ns. However, Harizanov & Gribanova (2015) also note three restrictions on the plural pattern: 1) when the two conjuncts are mismatched in number value, the string is ungrammatical; 2) when the head noun is pluralia tantum, the string is ungrammatical; 3) when the head noun has a suppletive plural form, the string is ungrammatical. All of these restrictions are unexpected if (38) involves the same structure as the NRNR in the languages I have discussed above. More research is needed to identify a language with multiple number features on the N heads.

(38) a. bǎlgarsk-i-ja   i   rusk-i   narod-i
          Bulgarian-SG.M-the and Russian-SG.M nation-PL.
          'the Bulgarian and Russian nations'
          (two nations: a Bulgarian nation and a Russian nation)
      b. pǎrv-a-ta   i   posledn-a stranic-i
          first-SG.F-the and last-SG.F page-PL
          'the first and last pages'
          (two pages: a first and a last one)

Note that in this paper I only talk about the number valuation on nouns but not adjectives, demonstratives, or other traditional concord elements. It is my assumption that number valuation on N heads and other elements in NPs like adjectives would invoke the same process. Multi-valuation on traditional concord elements is discussed by Corbett (1979); Wechsler & Zlatič (2000); King & Dalrymple (2004); Heycock & Zamparelli (2005). Cross-linguistic surveys therein reveal a much more complicated picture. (39a) is possible in English but not in Italian. Italian-type languages only allow (39b), where the subject refers to an individual who is both a friend and a colleague. (39c), unacceptable in most languages surveyed, is possible in Russian and Bulgarian. (39d), acceptable in almost all the languages surveyed, is not possible in Greek. Instead, Greek allows (39e), providing that all individuals are a friend and a colleague at the same time. I leave these issues for future research.

(39) a. This man and woman are a couple.
      b. This friend and colleague is coming to the party.
      c. *These man and woman are a couple.
      d. These boys and girls are playing on the playground.
      e. These friends and colleagues are coming to the party.

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