



On timing in the nominal domain: Evidence from dependent chains

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The objectives



- ▶ to investigate ϕ -feature properties of inalienable possession nouns in dependent plural constructions in English
- ▶ to argue that the attested variation, including a cross-linguistic variation, stems from whether or not the structure presupposes possession and is modulated by the Maximize Presupposition Principle of Heim (1991)
- ▶ to argue that dependent readings are a result of head movement to D



- ▶ furthermore, we use the attested variation in the domain of dependent plurals to argue that Agree and valuation do not need to take place simultaneously (Pesetsky and Torrego, 2007)
- ▶ however, transfer strictly requires chains headed by the corresponding phase head to be valued



- ▶ we assume, following Kučerová & Moro (2013), that ϕ -features are introduced to the structure by D
- ▶ technically, they constitute a situational pronoun in the sense of Percus (2000); von Stechow and Heim (2007/2011)



- ▶ the consequence of the proposed model is that if there are morpho-semantic mismatches in a nominal domain (for instance in the number valuation), the higher phase must be grammatically congruent with D, while the lower phase may be mismatched



Basic data



- ▶ dependent plurals are instances of grammatically plural nouns that must be interpreted as singular (Chomsky, 1975; De Mey, 1981)

- (1)
 - a. Male lions have a mane
 - b. Male lions have manes



- ▶ intuitively, plurality of the noun is triggered by plurality of the event the noun belongs to
- ▶ more precisely, they arise as a combination of distributivity and formal dependency of the nominal
- ▶ mismatch between morpho-syntax and semantics



- ▶ while there is a significant number of work on the semantic nature of plurality, relatively little is known about morpho-syntax of the phenomenon, with the exception of work on bound pronouns (Heim et al., 1991; Dimitriadis, 2000; Rullmann, 2003; Rullman, 2004; Sauerland, 2003; Heim, 2008; Kratzer, 2009; Sudo, 2012)



- ▶ even though we will build on the insight of this line of work, we will concentrate on the morpho-syntactic variability attested in the domain of non-pronominal DPs
- ▶ namely, distinctions between alienable and inalienable possession nouns
- ▶ we believe the pattern under discussion has not been previously discussed

(2) *Alienable possession*

- a. All the soldiers raised a gun.
- b. All the soldiers raised their gun
- c. All the soldiers raised their guns
- d. *All the soldiers raised his gun(s)
- e. # All the soldiers raised the gun(s)
- f. All the soldiers raised guns

(3) *Inalienable possession*

- a. All the soldiers raised a hand.
- b. All the soldiers raised their hand
- c. All the soldiers raised their hands
- d. *All the soldiers raised his hand(s)
- e. *All the soldiers raised the hand(s)
- f. *All the soldiers raised hands



- ▶ note: # means that this is possible but not with the dependent, i.e., distributive reading
- ▶ in addition, inalienable possession data are sensitive to the uniqueness presupposition of Heim (1991)

(4) *Inalienable possession with a uniqueness presupposition*

- a. *All the soldiers raised a head.
- b. All the soldiers raised their head
- c. All the soldiers raised their heads
- d. *All the soldiers raised his head(s)
- e. *All the soldiers raised the head(s)
- f. *All the soldiers raised heads



- ▶ as for the uniqueness pattern, we will simply assume that 'a' is out because of the uniqueness presupposition (Heim, 1991) and will not concern ourselves with it any further



The puzzle:

- ▶ how come plural inalienable DP requires the possessive determiner 'their', while alienable DP may be bare?
- ▶ how come the noun itself can be either singular or plural while the possessive determiner must be plural?
- ▶ how come the alienable DP may combine with a definite article (albeit getting a non-dependent plural interpretation) but this option is unavailable for the inalienable DP?



The Proposal



Possession as presupposition of person



person as a possessor

- ▶ we understand inalienable possession as a presupposition of a possessor
- ▶ this is supported by the fact that if the possession is asserted instead of presupposed, inalienable nouns behave in the dependent plural structure as if they were alienable:



- (5)
- a. Male lions have manes.
 - b. *Male lions groom manes.
 - c. Male lions groom their manes.



- ▶ we assume that a presupposition of a possessor entails a predicative relation of possession
- ▶ it follows that if a possessive relation is presupposed (or can be accommodated), alienable nouns should behave in dependent plurals exactly like inalienable nouns



- (6) Everyone in the city celebrated.
- Even the policemen raised their guns.
 - #Even the children raised their guns.



Person as a presupposition

- ▶ we argue that presupposing a possessor technically corresponds to presupposing a PERSON feature
- ▶ here we follow literature on pronouns that argues that ϕ -features are presuppositional (Cooper 1979, modelled as in Heim and Kratzer 1998, with modifications proposed in Sudo 2012)



- ▶ we model the PERSON feature as an animacy feature

(7) (modelled after Heim and Kratzer 1998; Sudo 2012)

$[[[\text{person}_i]]]^{w,g} = g(i)$ if $g(i)$ is a person in w , undefined otherwise



- ▶ since PERSON feature is presuppositional, it follows from the Maximize Presupposition principle of Heim (1991) that if the presupposition can be grammatically realized, it must be grammatically realized



- ▶ here's an interesting caveat: since both PERSON feature and gender feature presuppose a person (a presupposition of a male/female person entails a presupposition of a person), we argue that for purposes of morphological mapping the presupposition may be satisfied by a gender feature insertion

(8) $[[\text{gen:m}_i]]^{w,g} = g(i)$ if $g(i)$ is a (male) person in w ,
undefined otherwise

(9) $[[\text{gen:f}_i]]^{w,g} = g(i)$ if $g(i)$ is a female person in w ,
undefined otherwise



Dependent reading as bound D



- ▶ the essential property of dependent plurals is that the features are always bound within the structure
- ▶ since we work with the hypothesis that ϕ -features are introduced to the structure by D, it follows that D needs to be bound



- ▶ we will argue that the requirement of D to be bound has a grammatical correlate, namely, it is always accompanied by n-to-D movement
- ▶ here we follow the spirit of Truckenbrodt (2006) in that head movement to a phase head may enforce the situational pronoun D to be interpreted not with respect to the real context, but to a dependent context derived from the embedding structure (see also non-veridical models of Giannakidou 1997, Portner 2006 etc.)



Timing matters



- (10) Spell-out domains:
- i the complement of n (hand)
 - ii the complement of D (a hand)
 - iii DP (the/his/their hand)



Bound D and its consequences for morphology

- ▶ if D is bound and if the bound D is spelled out, its number feature must be PL because it's bound by the distributive operator of the pluralized event
- ▶ if D is not bound, the number feature on D is SG (assuming we talk about semantically singular entities)



- ▶ if D is bound, N can still be either SG or PL:
 - ▶ this is a matter of timing
 - ▶ if nP gets spelled out before D is bound, N can be singular
 - ▶ if, however, N gets spelled out with plural, D must already be bound



How it works

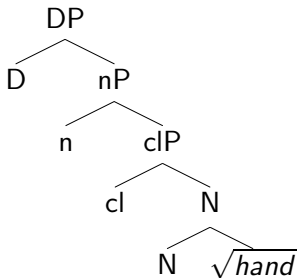


- ▶ let's first start with the structure of DP we assume
- ▶ to make matters clear, we're going to relabel the category defining n as N
- ▶ n is going to refer to its functional counterpart higher in the structure



- ▶ following Borer (2005) we assume cl head is where plural -s is spelled out in English

(11)





The inalienable pattern



(12) All the soldiers raised **a hand**.

- ▶ notice that this is not the dependent reading
- ▶ the inalienable reading is only implied: it could be anybody's hand
- ▶ consequently, there is no bound D

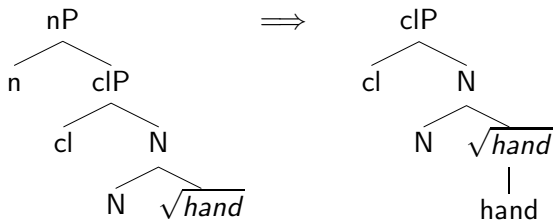


(13) All the soldiers raised **a hand**.

- ▶ since ϕ -features get introduced only by D, there is no number etc. on N, cl, and n until D is in the structure
- ▶ once n is merged, it's complement – NP – gets spelled out as “hand”



(14)

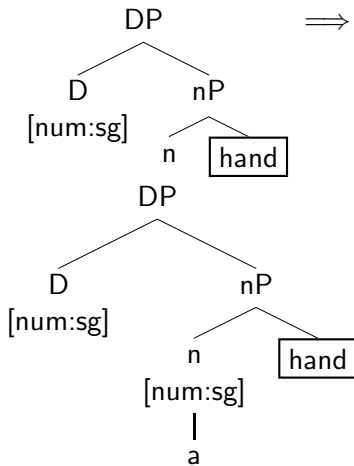




- ▶ after D is merged, it passes its features on n
- ▶ we argue there is no transfer before the features get valued
- ▶ since this is not the dependent reading, num will be valued as sg etc. (no plurality or anaphoricity)
- ▶ consequently, the complement of D – nP – gets spelled out as "a"
- ▶ that combined with "hand" gives us "a hand"
- ▶ there is no morphological exponent of D as such



(15)





- ▶ we argue that if D is bound, then there is always n-to-D movement
- ▶ if there is n-to-D movement, then nP cannot be spelled out without the inherited features being valued first
- ▶ if n is valued by bound D, it never remains singular
- ▶ consequently, even though we can spell out bare NP (hand), we cannot get “a” with a dependent plural reading

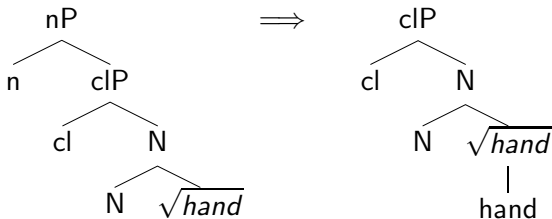


(16) All the soldiers raised **their hand**

- ▶ the bound reading obligatory → bound D
- ▶ the complement of n can get spelled out as 'hand' because there is no number feature on n yet
- ▶ the feature will be inherited only after D is merged:



(17)





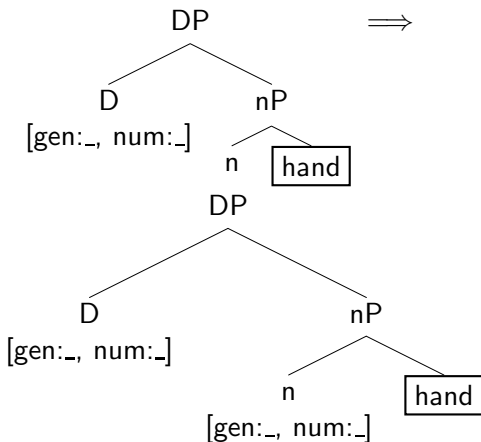
- ▶ we argue that the possessive determiner results from n-to-D movement
- ▶ this is analogical to the definite article
- ▶ only an indefinite article stays low in the structure (see Borer 2005)



- ▶ crucially, movement must be preceded by Agree
- ▶ we argue that valuation must take place as well
- ▶ so there is no possibility of spelling n without n being valued by D
- ▶ D must be bound, and since the bound features must be anaphoric and since the Maximize Presupposition principle must be satisfied, we get an exponent with gender features and plural

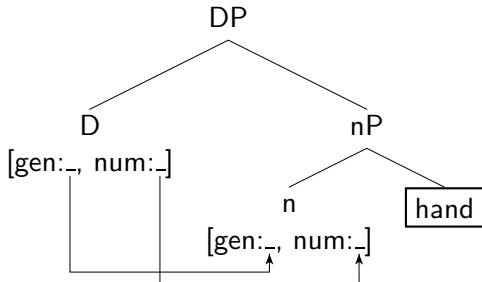


(18) Feature inheritance:



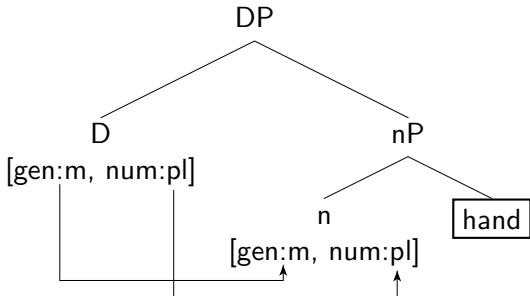


(19) Agree:



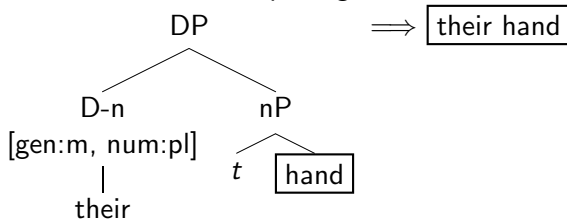


- (20) Valuation (with D getting valued from the embedding structure):





(21) Head movement and morphological realization:





- ▶ crucially, once the n head gets valued, the spelled out part still can't get the plural suffix
- ▶ the reason is that in the first transfer, we spelled out a structure which contains CL head (for Borer the locus of plural inflection in English)
- ▶ since the CL head had not been valued before Spell-Out, the spelled out CL head does not have the plural feature, hence morphology can't map -s on the N



- ▶ since D is bound, it gets its person feature valued from the antecedent
- ▶ here D must get a morphological exponent because we have n-to-D movement
- ▶ now, this cannot be spelled out as 'the' though because the Maximize Presupposition principle requires the person features to be overtly realized in the structure and this is the only place where that can happen



(22) All the soldiers raised **their hands**

- ▶ no spellout before valuation
- ▶ n-to-D movement
- ▶ everything spelled out after D had valued the rest of the structure
- ▶ D must be bound and anaphoric, hence plural and gender features must be realized



(23) *All the soldiers raised **his hand(s)**

- ▶ here the problem is that “his” requires n-to-D movement
- ▶ however, D must be bound, hence it must be plural



(24) *All the soldiers raised **the hand(s)**

- ▶ here the problem is that “the” is a poor match because it’s not anaphoric and fails to realize the inalienable possession person feature
- ▶ since this is inalienable possession, the features must be anaphoric; because it’s anaphoric, it must have gender (the gender must be there for presuppositional features)



(25) *All the soldiers raised **hands**

- ▶ the plural on N means that there was no low spell-out
- ▶ D must be part of the spell-out; hence there must be plural anaphoric D
- ▶ if the anaphoric D were not spelled out, the Maximize Presupposition principle would be violated



The alienable pattern



(26) All the soldiers raised **a gun**.

- ▶ exactly as above
- ▶ no dependent plural, no bound D



(27) All the soldiers raised **their gun**

- ▶ D is bound
- ▶ since it's bound, it must be plural
- ▶ since it's bound, there may be n-to-D movement, and hence the possessive
- ▶ the noun can be singular because of the early transfer option



(28) All the soldiers raised **their guns**

- ▶ as above, without the early transfer of the lower phase

(29) *All the soldiers raised **his gun**

- ▶ if there are anaphoric features, D must be bound
- ▶ however, whenever D is bound, it must be plural



(30) #All the soldiers raised **the gun(s)**

- ▶ this is free D, which is fine, but it excludes the dependent plural interpretation
- ▶ if D is bound and if there is n-to-D movement, then we end up with gender features on D and ‘the’ is a poor match in comparison with ‘their’



(31) All the soldiers raised **guns**

- ▶ there is no n-to-D movement, hence we do not need to spell out D
- ▶ since this is alienable noun, no violation of the Maximize Presupposition principle arises



Thank you!



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