

Extending the typology of partial null argument languages

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Outline of the talk:

1. Introduction: types of null argument languages
2. Unifying partial and radical null argument languages
3. Third person is a person too: evidence from early Northwest Germanic
4. The role of bare NP arguments
5. Summary and conclusions

1. Introduction: types of null argument languages

Typology of null argument languages (NALs) from Holmberg & Roberts (2010: 5–13) and Barbosa (2013):

- *Non-NALs*: arguments must always be overtly expressed.
 - Bambara, English, French, Somali
- *Consistent (or canonical) NALs*: allow null arguments in all persons in all tenses; agreement-related.
 - Greek, Italian, Pashto, Spanish
- *Expletive (or semi) NALs*: allow expletive null arguments, but not referential ones.
 - Afrikaans, Cape Verdean, Dutch, German, Papiamentu
- *Radical (or discourse) NALs*: allow null arguments of various kinds, but not obviously agreement-related.
 - Chinese, Japanese, Korean, Thai, Vietnamese
- *Partial NALs*: allow referential null arguments only in particular persons, tenses, or clause types.
 - Brazilian Portuguese, Finnish, Hebrew, Marathi

In this paper I will concentrate only on *referential* NALs, leaving non-NALs and semi-NALs out of consideration.

Two approaches to analysing referential NALs (Holmberg 2005, Holmberg & Roberts 2010: 13–14):

- ‘Unpronounced argument’ approach (Rizzi 1986):
 - Null arguments involve some kind of phrasal nominal element, which is not realized phonologically (traditionally *pro*; could also be ellipsis or zero spell-out rule)
- ‘I-argument’ approach (Borer 1986):
 - Null arguments are directly expressed by rich verbal agreement inflection (some sort of extra feature on T⁰/I⁰)

Consensus in recent theoretical work (Barbosa 2009, 2013; Holmberg 2010; Sigurðsson 2011): *both approaches* are needed. Radical NALs need the unpronounced argument approach; canonical NALs need the I-argument approach. (Discourse *per se* is irrelevant to the typology, since *all* NALs require recoverability in discourse; Frascarelli 2007).

Assuming this consensus is correct, the following research questions arise:

- Where do partial NALs fit in?
- What types of partial NALs exist?

These are the questions that the rest of this talk will attempt to answer.

2. Unifying partial and radical null argument languages

Barbosa (2011, 2013): partial NALs should be accounted for using the same mechanism as radical NALs. Evidence:

- Both radical and partial NALs allow null generic inclusives ('one').
- (1) Ah John waa hai Jinggwok jiu gong Jingman
PRT John say in England need speak English
'John says that one/he needs to speak English in England.' (Cantonese; Barbosa 2013: 11)
 - (2) Oppilas tietää ettei tehtävää pysty ratkaisemaan
student knows that-NEG assignment can solve
'The student knows that the assignment can't be solved.' (Finnish; Barbosa 2013: 5)
- In both radical and partial NALs, locality effects obtain.
- (3) Zhangsan_i yiwei Lisi_j chengren yiqian e_{*ij} zuocuo shi le
Zhangsan think Lisi admit before do.wrong matter ASP
'Zhangsan thinks Lisi admitted that he did wrong.' (Mandarin; Modesto 2008: 383)
 - (4) *O João_i disse que os meninos acham que e_i é esperto
the João said that the boys believe that is smart
'João said that the boys believe that he is smart.' (Brazilian Portuguese; Barbosa 2013: 4)
- In both radical and partial NALs, in contrast to canonical NALs, obviation effects do *not* obtain.
- (5) Il professore_i ha parlato dopo che lui_{*ij} è arrivato
the professor has spoken after that he is arrived
'The professor spoke after he arrived.' (Italian; Holmberg & Roberts 2010: 7)
 - (6) Zhangsan_i shuo ta_{ij} hui lai
Zhangsan say he can come
'Zhangsan said that he will come.' (Mandarin; Huang 1982: 331)
 - (7) Ram_i mhanala ki tyani_j ghar ghetla
Ram say-PST.3SM that he house buy-PST.3SN
'Ram said that he bought a house'. (Marathi; Holmberg & Sheehan 2010: 131)
- In both radical and partial NALs, null objects as well as subjects can be found (cf. also Walkden 2014: 213).
- (8) Ta kanjian le
he saw asp
'He saw him.' (Mandarin; Huang 1984: 533)
 - (9) Kalle väittää että Pekka uhkaili
Kalle claim.3SG that Pekka threaten.PST
'Kalle claims that Pekka threatened him.' (Finnish; Frascarelli 2007: 723)
 - (10) Lo, ima šeli sarga
no mother my knit
'No, my mother knitted them.' (Hebrew; Taube 2012: 319)

(11) Eu conheci numa festa.

I met at party

‘I met him at a party.’ (Brazilian Portuguese; Farrell 1990: 328)

These facts indicate that partial NALs are really a subclass of radical NALs with specific restrictions on occurrence.

3. Third person is a person too: evidence from early Northwest Germanic

What, precisely, are these restrictions? In Brazilian Portuguese, Finnish, Hebrew, Marathi and Russian, there is a clear person split: in main clause contexts, first and second person null subjects are fine, but third person null subjects bad. But what about the opposite split? Vainikka & Levy (1999: 623) predict that such languages cannot exist: ‘it cannot be the case that only third person subject pronouns may be omitted, while first/second pronouns must be retained’. This wouldn’t be entirely surprising: third person is ‘special’ (Benveniste 1971), and some have argued that it is not a person at all (e.g. Kayne 2000). However, I will argue that the early Northwest Germanic languages counterexemplify Vainikka & Levy’s generalization (or ‘almost’ counterexemplify it).

3.1 Null subjects in early Northwest Germanic: the basic data

The patterns reported here are characteristic of a range of early Germanic varieties:

- Old English (OE; some texts; van Gelderen 2000, 2013; Rusten 2010, 2013, 2014a,b; Walkden 2013)
- Old High German (OHG; Axel 2005, 2007; Axel & Weiß 2011)
- Old Icelandic (OI; Hjartardóttir 1987; Sigurðsson 1993; Walkden 2014: 165–171)
- Old Norwegian (ON; Kinn 2013)
- Old Saxon (OS; Walkden 2014: 190–195)
- Old Swedish (OSw; Håkansson 2008, 2013)

I assume that these varieties all behave the same way unless otherwise indicated. There are quantitative differences between languages/texts, and at least some qualitative differences, but not with regard to the crucial properties here. (Cf. also Rosenkvist 2009.) Examples:

(12) þonne bið on hreþre under helm drepen biteran stræle
then is in heart under helm hit bitter dart

‘Then **he** is hit in the heart, under the helmet, by the bitter dart’ (OE; *cobeowul*, 54.1745.1443)

(13) Sume hahet in cruci
some-ACC hang-2PL to cross

‘Some of them **you** will crucify’ (OHG; Monsee Fragments XVIII.17; Matthew 23:34; Axel 2007: 293)

(14) þá skar Rognvaldr hár hans, en áðr var úskorit
then cut R. hair his but before was uncut

‘Then Rognvaldr cut his hair, but **it** had been uncut before’ (OI; Nygaard 1906: 10)

(15) þa var hanum sact
then was him told

‘Then **it** was told to him.’ (ON; OSHL, 21774; Kinn 2013)

(16) lîbes uueldi ina bilôsien, of he mahti gilêstien sô
life.GEN would him take if he could achieve so

‘**he**_i would take his_j life if he_i could’ (OS; *Heliand* 1442; Walkden 2014: 192)

(17) þar gierþi kirchiu aþra
there made church other

‘There **he** built another church.’ (OSw; Håkansson 2013: 156)

Note that all of the above examples exclude a simple ‘pronoun zap’ or ‘topic drop’ analysis along the lines of the modern Germanic languages (Ross 1982; Trutkowski 2011), since SpecCP is filled. For further examples and for quantitative data, see the references above, in particular Walkden (2014: chapter 5). Two very distinctive properties, from a typological perspective:

- Null subjects in subordinate clauses are rare (though they do occur).
 - Cf. Adams (1987) on Old French. But the Germanic examples do not seem to correlate with embedded verb-movement to C⁰ (Schlachter 2010: 161–169; Walkden 2014: 178, 185–187).
 - Doesn’t apply to Old Icelandic (Walkden 2014: 167–168).
 - Not the focus of today’s talk.
- Null subjects are almost always in the third person (rather than first or second).
 - Again, this is not absolute in all of the texts in question – but it is always statistically significant, and is thus a very strong tendency that calls for an explanation.

3.2 The irrelevance of rich agreement

Traditional account following Taraldsen (1978) attributes null subjects to rich verbal agreement. Sample paradigms from OHG and OS:

Table 1: Verb paradigm for the simple present and past tenses in OHG: *nerien* (‘to save’)

N	Person	Present ind.	Past ind.	Present subj.	Past subj.
sg	1	neri-e	neri-t-a	neri-e	neri-t-i
	2	neri-s(t)	neri-t-ōs(t)	neri-ēs(t)	neri-t-īs(t)
	3	neri-t	neri-t-a	neri-e	neri-t-i
pl	1	neri-emēs	neri-t-um	neri-ēm	neri-t-īm
	2	neri-et	neri-t-ut	neri-ēt	neri-t-īt
	3	neri-ent	neri-t-un	neri-ēn	neri-t-īn

Table 2: Verb paradigm for the simple present and past tenses in OS: *nērian* (‘to save’)

N	Person	Present ind.	Past ind.	Present subj.	Past subj.
sg	1	nēri-u	nēri-d-a	nēri-e	nēri-d-i
	2	nēri-s	nēri-d-es		
	3	nēri-ēd	nēri-d-a		
pl		nēri-ad	nēri-d-un	nēri-en	nēri-d-in

Arguments against a crucial role for verbal agreement:

- OS (and OE) agreement is just too weak (cf. e.g. Müller 2005): no person distinctions in the plural! OSw has no person distinctions in the singular (except past tense of strong verbs; Håkansson 2013: 172).
- OHG (and OI) exhibits 1st/3rd syncretism in the preterite, and hence is also too weak (Müller 2005).
- Differences between texts/dialects/time periods are mysterious under an agreement-driven account.
 - OI, for instance, loses the null subject property without loss of agreement.
- Similarities between texts/dialects/time periods are mysterious under an agreement-driven account.
 - OE and OS have comparatively impoverished verbal morphology, yet have the same patterns of subject omission as OHG and OI.
- An agreement-driven account would predict null objects to be impossible, contrary to fact.

Agreement most likely irrelevant – hence probably not canonical NALs (*pace* e.g. van Gelderen 2013).

3.3 Partial NAL properties in early Northwest Germanic

Null generic inclusives:

(18) Wip þæs magan springe þonne þurh muð bitere hræcð oþþe bealcet
 for the maw.GEN sore.DAT when through mouth bitterly retches or belches
 ‘For sores of the mouth when **one** retches or belches bitterly through the mouth’
 (OE; *colaece*, Lch_II_[2]:15.1.1.2296; Walkden 2014: 215)

(19) Gebet, thanne gibit íu
 give.2PL, then give.3SG you.PL.DAT
 ‘Give, and **one** shall give to you’ (OHG; *Otfrid* 39,3; Eggenberger 1961: 102)

(20) en heyrði til hqDo, þá er þór bar hverinn
 but heard.3SG to handle.GEN when that Thor carried kettle.DEF.ACC
 ‘But **one** could hear the handle rattle when Thor carried the kettle’
 (OI; 1150.FIRSTGRAMMAR.SCI-LIN., 170; Walkden 2014: 214)

(21) Hær ma vndirstanda at ioseph haffde ey hedhne mæn j sinne thiænisto
 here may understand that Joseph had not heathen men in his service
 ‘Here, **one** may understand that Joseph did not have heathen men in his service.’
 (OSw; MB: 190; Håkansson 2013: 166)

(Locality effects hard to test for in dead languages.) Lack of obviation:

(22) Thô he_i thanan scolda ... sôkien lioht ôðar,
 when he thence should.3SG seek.INF light other
 thô he_i im iungron hêt gangan nâhor
 then he REFL disciples commanded.3SG go.INF nearer
 ‘When he_i was about to die, he_i told his disciples to gather round’
 (OS; *Heliand* 576–579; Walkden 2014: 201)

(23) som han_i stodh j stôrste tienist ... tha wart hann_i blindher
 that he stood in great service then was he blind
 ‘when he_i was engaged in great service ... then he_i became blind’ (OSw; PK: 231; Håkansson 2013: 164)

Null objects:

(24) se here ... gesæt þæt lond and gedælde
 the army invaded the land and divided
 ‘The army ... invaded the country and divided **it** up’
 (OE; *cochronC*, *ChronC*_[Rositzke]:881.1.762; van der Wurff 1997)

(25) denne varant engilâ uper dio marhâ, wechant deotâ, wissant ze dinge
 then travel.3PL angels over the lands wake.3PL people lead.3PL to judgement
 ‘Then angels fly over the lands, wake the people, lead **them** to the judgement’
 (OHG; *Muspilli* 79–80; Lockwood 1968: 215)

(26) dvergrinn mælti, at sa baugr skyldi vera hverjum hofuðsbani, er átti
 dwarf.DEF said that the ring should be anyone.DAT headbane that possessed
 ‘The dwarf said that the ring would bring death to anyone who possessed **it**’ (OI; Sigurðsson 1993)

- (27) En sva bar hann prudlega at ængi maðr hæyrði hann ymia
 but so bore he honourably that no man heard him cry
 ‘But he bore **it** with such dignity that no one heard him cry’ (ON; OSHL, 22292; Kinn 2013)
- (28) huuand it rotat hîr an roste, endi regintheobos farstelad, uurmi auuardiad ...
 because it rusts here to rust and thieves steal worms spoil ...
 ‘because it rusts away, thieves steal **it**, worms spoil **it** ...’ (OS; *Heliand* 1644–1645; Walkden 2014: 195)

Conclusion: the early Northwest Germanic languages seem to display partial NAL properties, except that the person split is the wrong way round. Early Northwest Germanic is mirror image Finnish (Walkden 2014: 209).

3.4 Analysis

Holmberg’s (2010: 101–104) analysis:

- Referential null subjects in canonical NALs are ϕ Ps that are incorporated into the verb in T^0 .
 - This is an ‘I-argument’ analysis, in other words.
 - T^0 has an uninterpretable D-feature ($[uD]$), which needs to be checked/valued by Agree with a higher element in order for the (null) subject to be referential.
- Referential null subjects in partial NALs are silent DPs with an uninterpretable D-feature.
- $[uD]$ features need to be valued by Agree with a higher element.
- Finnish has two ways of valuing the $[uD]$ feature on the subject DP:
 - In the case of 1st and 2nd person null subjects, it is valued by agreement with operators in the speaker (Λ_A) or addressee (Λ_P) projections in the left periphery (Sigurðsson 2004).
 - In the case of 3rd person referential null subjects, it is valued through control.

My proposal for early Northwest Germanic (Walkden 2014: 209–215):

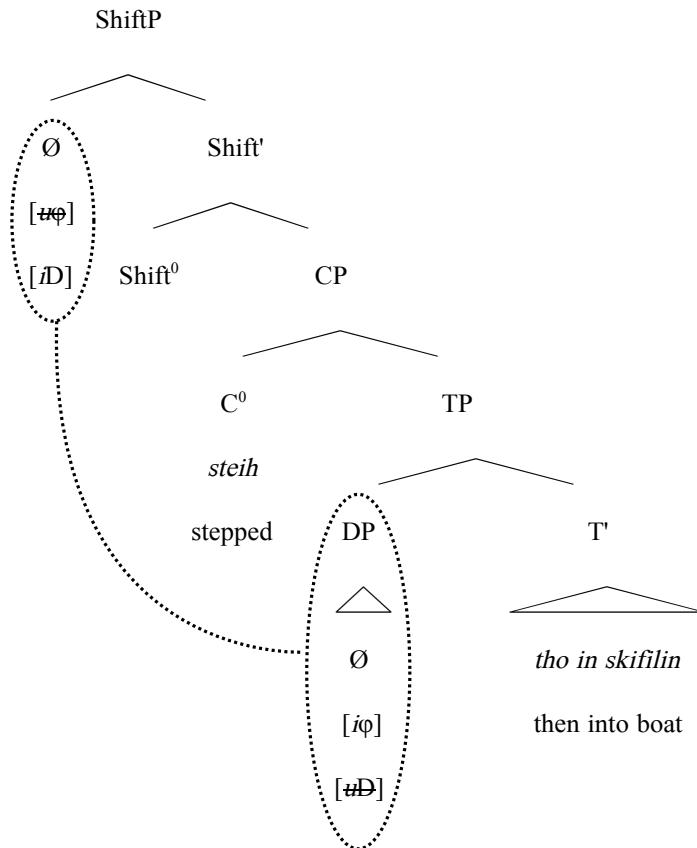
- 1st and 2nd person referential null subjects are not generally available, because an Agree relation can’t be established between left-peripheral elements and the $[uD]$ DP.
- 3rd person referential null subjects have their $[uD]$ feature valued by an aboutness topic operator in the left periphery (unavailable in Finnish).
- Null arguments in subordinate clauses are comparatively rare.
 - This can be captured if subordinate finite clauses in early Northwest Germanic (except Old Icelandic) are islands with respect to agreement and do not always project a complete and active left periphery (cf. Haegeman 2006, and Bianchi & Frascarelli 2010 on the root nature of aboutness topics).

The availability of what null arguments are available in what language thus depends on what is available to probe in the left periphery:

	$[uAnaphor]/[u\phi]$ in Spec Λ_A , Spec Λ_P	$[uAnaphor]/[u\phi]$ in SpecShiftP	Examples
a)	Yes	Yes	Greek, Italian, Japanese
b)	Yes	No	Finnish, Hebrew, Marathi
c)	No	No	French, Bambara
d)	No	Yes	Early Northwest Germanic languages

A sample configuration for null subjects is given below.

Licensing of null subjects in early Northwest Germanic



‘He then stepped into the boat’ (OHG; *Tatian* 193.1; Axel 2007: 293)

- Null objects can also be derived if a [*u*D] object ends up higher in the derivation than the subject by independent means.
- Generic inclusive null subjects are derived through incorporation of a ϕ P into T^0 (this does *not* necessitate a [*u*D] feature on T^0 , as generic null subjects are not referential).

Are there any other languages with null subjects in the third person only? Yes:

- *Shipibo* (Camacho & Elías-Ulloa 2010), an indigenous American (Panoan) language
- *Old North Russian* (Kwon 2009)
- *Tongan* (Otsuka 2000: 60–65)
- Several other Austronesian languages (Laurie Reid, p.c.)

(29) ‘Io, na’a *(ku) ha’u.
 Yes PST 1SG come
 ‘Yes, I came.’

(Tongan; answer to question ‘Did you come yesterday?’; Otsuka 2000: 64)

So I conclude, with Deal (2005: 95), that ‘1st/2nd person *pro*-drop and 3rd person *pro*-drop are independently available UG options’.

4. The role of bare NP arguments

For partial NALs (and also radical NALs, if the two can be unified), a version of the ‘unpronounced argument’ approach has been taken (following Holmberg 2010): the null argument is a [*u*D]-bearing DP.

- What causes it to be null? Holmberg (2010: 104): ‘extended version of chain reduction’, similar to control.
 - But how is this defined, and what prevents e.g. English from being a NAL?
 - Holmberg (2010: 114–115) has to adopt a ‘brute force’ mechanism to ensure this: a PF EPP property of T^0 , which forces there to be something overt in SpecTP in non-NALs.
 - In the present approach, we can say that there are no probing operators in Spec Λ_A , Spec Λ_P or SpecShiftP in languages like English.
 - Both approaches amount to restating the facts in a formal system.
- Is there a more insightful solution?

Barbosa (2013), following Tomioka (2003): the key factor is the independent availability of bare NP arguments.

- A default, minimally specified, phonologically null NP is universally available.
- Assumes that DP is not universally projected (cf. Bošković 2005, 2008, 2009).
 - In languages that allow bare NPs in argument position, this null NP will be able to occur there too.
 - In languages that obligatorily project DP, a remnant D^0 (e.g. a pronoun) will always surface.

Appealing feature of this proposal for our purposes: one of the few typological features setting all the modern Germanic languages apart from all the earliest Germanic languages is that DP is obligatorily present in the former, whereas its presence in the latter is a matter of debate (cf. e.g. Wood 2007 and Sommerer 2011 for OE, and Lander & Haegeman 2013 for OI). Some examples of bare definite nominal arguments:

(30) *Gecyste þa cyning æpelum god, þeoden Scyldinga, ðegn betstan ond be healse genam*
 kissed then king prince.DAT good Lord Scyldings.GEN warrior best and by neck took
 ‘The king, the good prince, Lord of the Scyldings, then kissed the best warrior, and took him by the neck’
 (OE; *Beowulf* 1870; Sommerer 2011: 194)

(31) *jarl var vinsæll við búendr*
 earl was friendly with farmers
 ‘The earl was popular among the farmers.’ (OI; Lander & Haegeman 2013: 10)

There is a lot of variation between OE writers/texts with regard to null subjects (see Walkden 2013, Rusten 2014b). If the grammars with and without DP are in competition in the sense of Kroch (1994), then we’d predict null subjects to be most frequent in texts with the highest proportion of bare NP arguments. This is borne out, at least preliminarily:

Text	N definite bare common nouns ¹	% definite bare common nouns	N null subjects (Walkden 2013)	% null subjects
<i>Cura Pastoralis</i>	11/250	4.4%	10/2575	0.4%
<i>Boethius</i>	12/250	4.8%	13/2270	0.6%
<i>Orosius</i>	17/250	6.8%	28/1378	2.0%
<i>Bede</i>	31/250	12.4%	76/2210	3.4%
<i>Beowulf</i>	87/250	34.8%	65/418	15.6%

¹ Out of the first 250 bare common nouns in the text, following the methodology of Sommerer (2011).

Data for definite bare common nouns is from Sommerer (2011: 229), except *Beowulf*, which I collected myself. More texts need to be looked at, but this is suggestive! Clear correlation: Spearman's $\rho = 1$, two-tailed $p < 0.0001$.

Suggested modification to a Holmberg (2010)-style analysis: instead of a DP bearing [*u*D], we're dealing with a null NP bearing [*u*D] (after all, it still needs to be licensed). In languages like English, a DP is obligatorily projected, and D⁰ with null NP as complement is spelled out as a pronoun. Some details still need to be worked out. In principle this also affords a nice account of English diary drop, though, since article drop, like null subjects, is a feature only of specific colloquial registers.

5. Summary and conclusions

- Partial and radical NALs share many properties.
 - This makes it desirable to unify them theoretically.
- The early Northwest Germanic languages permit null arguments:
 - mainly in main and conjunct clauses
 - mainly in the third person
- The early Northwest Germanic languages can be characterized as partial NALs.
 - A slightly modified version of Holmberg's (2010) analysis is able to capture the data.
- Other languages also display the 'mirror image Finnish' person split.
- Evidence from early Northwest Germanic supports the view that languages which permit bare NP arguments are those which may also be partial/radical NALs (Tomioka 2003; Barbosa 2011, 2013).

References

- Adams, Marianne. 1987. From Old French to the theory of pro-drop. *Natural Language and Linguistic Theory* 5, 1–32.
- Axel, Katrin. 2005. Null subjects and verb placement in Old High German. In Stephan Kepser & Marga Reis (eds.), *Linguistic evidence: empirical, theoretical and computational perspectives*, 27–48. Berlin: Mouton de Gruyter.
- Axel, Katrin. 2007. *Studies on Old High German syntax: left sentence periphery, verb placement and verb-second*. Amsterdam: John Benjamins.
- Axel, Katrin, & Helmut Weiß. 2011. Pro-drop in the history of German from Old High German to the modern dialects. In Melani Wratil & Peter Gallmann (eds.), *Null pronouns*, 21–52. Berlin: Mouton de Gruyter.
- Barbosa, Maria do Pilar Pereira. 2009. Two kinds of subject *pro*. *Studia Linguistica* 63, 2–58.
- Barbosa, Maria do Pilar Pereira. 2011. Partial pro drop as Null NP Anaphora. <http://ling.auf.net/lingbuzz/001717>.
- Barbosa, Maria do Pilar Pereira. 2013. *pro* as a minimal NP: towards a unified theory of *pro*-drop. <http://ling.auf.net/lingbuzz/001949>.
- Benveniste, Emile. 1971. *Problems in general linguistics*. Coral Gables, FL: University of Miami Press.
- Bianchi, Valentina, & Mara Frascarelli. 2010. Is Topic a root phenomenon? *Iberia* 2, 43–88.
- Borer, Hagit. 1986. I-subjects. *Linguistic Inquiry* 17, 375–416.
- Bošković, Željko. 2005. On the locality of left branch extraction and the structure of NP. *Studia Linguistica* 59, 1–45.
- Bošković, Željko. 2008. What will you have, DP or NP? *Proceedings of NELS* 37, 101–114.
- Bošković, Željko. 2009. More on the no-DP analysis of article-less languages. *Studia Linguistica* 2, 187–204.
- Camacho, José, & José Elías-Ulloa. 2010. Null subjects in Shipibo switch-reference systems. In José Camacho, Rodrigo Gutiérrez-Bravo & Liliana Sánchez (eds.), *Information structure in indigenous languages of the Americas: syntactic approaches*, 65–85. Berlin: Mouton de Gruyter.
- Cole, Melvyn. 2009. Null subjects: a reanalysis of the data. *Linguistics* 47, 559–587.
- Cordes, Gerhard, & Ferdinand Holthausen. 1973. *Altniederdeutsches Elementarbuch*. Heidelberg: Carl Winter.

- Deal, Amy Rose. 2005. Pro-drop and subject (non-)recoverability: the case of Nez Perce. *Generative Grammar @ Geneva* 4, 93–111.
- Eggenberger, Jakob. 1961. *Das Subjektpronomen im Althochdeutschen: ein syntaktischer Beitrag zur Frühgeschichte des deutschen Schrifttums*. Grabs: self-published.
- Farrell, Patrick. 1990. Null objects in Brazilian Portuguese. *Natural Language and Linguistic Theory* 8, 325–346.
- Frascarelli, Mara. 2007. Subjects, topics and the interpretation of referential pro: an interface approach to the linking of (null) pronouns. *Natural Language and Linguistic Theory* 25, 691–734.
- Haegeman, Liliane. 2006. Conditionals, factives and the left periphery. *Lingua* 116, 1651–1669.
- Håkansson, David. 2008. *Syntaktisk variation och förändring. En studie av subjektlösa satser i fornsvenska*. PhD dissertation. University of Lund.
- Håkansson, David. 2013. Null referential subjects in the history of Swedish. *Journal of Historical Linguistics* 3, 155–191.
- Hjartardóttir, Thóra Björk. 1987. *Getið í eyðurnar*. MA dissertation. University of Iceland.
- Holmberg, Anders. 2005. Is there a little pro? Evidence from Finnish. *Linguistic Inquiry* 36, 533–564.
- Holmberg, Anders. 2010. Null subject parameters. In Theresa Biberauer, Anders Holmberg, Ian Roberts & Michelle Sheehan (eds.), *Parametric variation: null subjects in Minimalist theory*, 88–124. Cambridge: Cambridge University Press.
- Holmberg, Anders, & Ian Roberts. 2010. Introduction: parameters in Minimalist theory. In Theresa Biberauer, Anders Holmberg, Ian Roberts & Michelle Sheehan (eds.), *Parametric variation: null subjects in Minimalist theory*, 1–57. Cambridge: Cambridge University Press.
- Holmberg, Anders, & Michelle Sheehan. 2010. Control into finite clauses in partial null-subject languages. In Theresa Biberauer, Anders Holmberg, Ian Roberts & Michelle Sheehan (eds.), *Parametric variation: null subjects in Minimalist theory*, 125–152. Cambridge: Cambridge University Press.
- Huang, C.-T. James. 1982. *Logical relations in Chinese and the theory of grammar*. PhD dissertation. MIT.
- Huang, C.-T. James. 1984. On the distribution and reference of empty pronouns. *Linguistic Inquiry* 15, 531–574.
- Kayne, Richard S. 2000. *Parameters and universals*. Oxford: Oxford University Press.
- Kinn, Kari. 2013. Null arguments in Old Norwegian in an early Germanic perspective. Paper presented at the 21st International Conference on Historical Linguistics, Oslo.
- Kroch, Anthony. 1994. Morphosyntactic variation. In Katherine Beals (ed.), *Proceedings of the 30th annual meeting of the Chicago Linguistic Society*, 180–201. Chicago: Chicago Linguistic Society.
- Kwon, Kyongjoon. 2009. The subject cycle of pronominal auxiliaries in Old North Russian. In Elly van Gelderen (ed.), *Cyclical change*, 157–184. Amsterdam: John Benjamins.
- Lander, Eric T., & Liliane Haegeman. 2013. Old Norse as an NP language: with observations on the Common Norse and Northwest Germanic runic inscriptions. *Transactions of the Philological Society*, to appear.
<http://onlinelibrary.wiley.com/doi/10.1111/1467-968X.12022/abstract>.
- Lockwood, William B. 1968. *Historical German syntax*. Oxford: Clarendon.
- Modesto, Marcelo. 2008. Topic prominence and null subjects. In Theresa Biberauer (ed.), *The limits of syntactic variation*, 375–409. Amsterdam: John Benjamins.
- Müller, Gereon. 2005. Pro-drop and impoverishment. In Patrick Brandt & Eric Fuß (eds.), *Form, structure and grammar: a festschrift presented to Günther Grewendorf on the occasion of his 60th birthday*, 93–115. Tübingen: Narr.
- Neeleman, Ad, & Kriszta Szendrői. 2007. Radical pro drop and the morphology of pronouns. *Linguistic Inquiry* 38, 671–714.
- Neeleman, Ad, & Kriszta Szendrői. 2008. Case morphology and radical pro-drop. In Theresa Biberauer (ed.), *The limits of syntactic variation*, 331–348. Amsterdam: John Benjamins.

- Nygaard, Marius. 1906. *Norrøn syntax*. Kristiania: Aschehough.
- Otsuka, Yuko. 2000. *Ergativity in Tongan*. DPhil dissertation. University of Oxford.
- Rizzi, Luigi. 1986. Null objects in Italian and the theory of *pro*. *Linguistic Inquiry* 17, 501–557.
- Rosenkvist, Henrik. 2009. Referential null subjects in Germanic: an overview. *Working Papers in Scandinavian Syntax* 84, 151–180.
- Ross, John Robert. 1982. Pronoun-deleting processes in German. Paper presented at the annual meeting of the Linguistic Society of America, San Diego, California.
- Rusten, Kristian A. 2010. *A study of empty referential pronominal subjects in Old English*. MPhil dissertation. University of Bergen.
- Rusten, Kristian A. 2013. Empty referential subjects in Old English prose: a quantitative analysis. *English Studies* 94, 970–992.
- Rusten, Kristian A. 2014a. Null referential subjects from Old to Early Modern English. In Kari E. Haugland, Kevin McCafferty & Kristian A. Rusten (eds.), *‘Ye whom the charms of grammar please’: studies in English language history in honour of Leiv Egil Breivik*, 249–270. Oxford: Peter Lang.
- Rusten, Kristian A. 2014b. A quantitative study of empty referential subjects in Old English prose and poetry. *Transactions of the Philological Society*, to appear. <http://onlinelibrary.wiley.com/doi/10.1111/1467-968X.12043/abstract>.
- Sato, Yosuke, & Chonghyuck Kim. 2012. Radical pro drop and the role of syntactic agreement in Colloquial Singapore English. *Lingua* 122, 858–873.
- Schlachter, Eva. 2010. *Syntax und Informationsstruktur im Althochdeutschen: Untersuchungen am Beispiel der Isidor-Gruppe*. PhD dissertation. Humboldt-Universität zu Berlin.
- Schlachter, Eva. 2012. *Syntax und Informationsstruktur im Althochdeutschen: Untersuchungen am Beispiel der Isidor-Gruppe*. Heidelberg: Carl Winter.
- Sigurðsson, Halldór Ármann. 1993. Argument drop in Old Icelandic. *Lingua* 89, 247–280.
- Sigurðsson, Halldór Ármann. 2004. The syntax of Person, Tense, and speech features. *Italian Journal of Linguistics* 16, 219–51.
- Sigurðsson, Halldór Ármann. 2011. Conditions on argument drop. *Linguistic Inquiry* 42, 267–304.
- Sommerer, Lotte. 2011. *Old English se: from demonstrative to article. A usage-based study of nominal determination and category emergence*. DrPhil dissertation, Universität Wien.
- Taraldsen, Knut Tarald. 1978. *On the NIC, vacuous application, and the that-t filter*. Ms. Massachusetts Institute of Technology.
- Taube, Sharon. 2012. The mystery of the missing argument: Hebrew object drop. In Balázs Surányi and Diána Varga (eds.), *Proceedings of the First Central European Conference in Linguistics for Postgraduate Students*, 318–331. Budapest: Pázmány Péter Catholic University.
- Tomioka, Satoshi. 2003. The semantics of Japanese null pronouns and its cross-linguistic implications. In Kerstin Schwabe and Susanne Winkler (eds.), *The interfaces: deriving and interpreting omitted structures*, 321–339. Amsterdam: John Benjamins.
- Trutkowski, Ewa. 2011. Referential null subjects in German. In Chris Cummins, Chi-Hé Elder, Thomas Godard, Morgan Macleod, Elaine Schmidt & George Walkden (eds.), *Proceedings of the Sixth Cambridge Postgraduate Conference in Linguistics (CamLing)*, 206–217. Cambridge: Cambridge Institute for Language Research.
- Vainikka, Anne, & Yonata Levy. 1999. Empty subjects in Finnish and Hebrew. *Natural Language and Linguistic Theory* 17, 613–671.
- van der Wurff, Wim. 1997. Syntactic reconstruction and reconstructability: Proto-Indo-European and the typology of null objects. In Jacek Fisiak (ed.), *Linguistic reconstruction and typology*, 337–356. Berlin: Mouton de Gruyter.

- van Gelderen, Elly. 2000. *A history of English reflexive pronouns: person, self, and interpretability*. Amsterdam: John Benjamins.
- van Gelderen, Elly. 2013. Null subjects in Old English. *Linguistic Inquiry* 44, 271–285.
- Walkden, George. 2013. Null subjects in Old English. *Language Variation & Change* 25, 155–178.
- Walkden, George. 2014. *Syntactic reconstruction and Proto-Germanic*. Oxford: Oxford University Press.
- Wood, Johanna L. 2007. Is there a DP in Old English? In Joseph Salmons & Shannon Dubenion-Smith (eds.), *Historical Linguistics 2005: selected papers from the 17th International Conference on Historical Linguistics*, 167–187. Amsterdam: John Benjamins.

Appendix: problems for a radical NAL analysis

- In the analysis pursued here, radical and partial NALs are basically the same thing.
 - But can the early Northwest Germanic languages really be radical NALs?
 - Neeleman & Szendrői (2007, 2008) claim that radical NALs require agglutinating pronouns.
 - Is early Northwest Germanic pronominal morphology agglutinating? Representative paradigm:

OS pronouns (Cordes & Holthausen 1973)

	NOMINATIVE	ACCUSATIVE	DATIVE	GENITIVE
1 SG	ik	mik	mī	mīn
2 SG	thū	thik	thī	thīn
3 SG M	hīē	ina	imu	is
3 SG N	it			
3 SG F	siu	sia	iru	ira
1 DU	wit	unk		unkar
2 DU	gīt	ink		inkar
1 PL	wī	ūnsik	ūs	ūsar
2 PL	gī	iuwik	iu	iuwar
3 PL M	sia		im	iro
3 PL N	siu			
3 PL F	sia			

Short answer: *no*. There is no feature value or combination of values such that they define a nonsingleton set of forms in which all members share phonetic material (cf. Neeleman & Szendrői 2007: 706). So if Neeleman & Szendrői are on the right track, the early Northwest Germanic languages weren't radical null argument languages. This led me to reject the hypothesis in earlier work (Walkden 2014: 203–209).

However, a number of apparent counterexamples have been noted: Aiton, Lao, Vietnamese (Cole 2009) and Colloquial Singapore English (Sato & Kim 2012). So maybe Neeleman & Szendrői (2007, 2008) are not on the right track after all...