The rise and fall of null subjects: Implications for the theory of pro-drop

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1. Introduction

- Null subjects and the syntax-morphology interface: Correlation between the availability of referential null subjects and properties of the verbal agreement paradigm (cf. e.g. Rizzi 1982, Jaeggli & Safir 1989, Roberts 1993, Rohrbacher 1999):

	+null subjects			–null subjects		
	Italian	Spanish	Greek	English	German	Icelandic
1sg	-o	-o	-o	-∅	-e	-i
2sg	-i	-as	-is	-∅	-st	-ir
3sg	-a	-a	-i	-s	-t	-ir
1pl	-ate	-amos	-ume	-∅	-en	-um
2pl	-amo	-áis	-ete	-∅	-t	-ið
3pl	-ano	-an	-un	-∅	-en	-a

Table 1: Verbal agreement endings (pres., indic.) and null subjects

- Müller (2006), Koeneman (2006), Roberts (2010a): Rich agreement = a fully distinctive paradigm (i.e., a single systematic syncretism blocks pro-drop).
- Diachronic predictions:

(1) a. Pro-drop develops historically when the richness of verbal inflection crosses a certain threshold;
b. the rise of pro-drop proceeds in a wholesale fashion, affecting all persons/ numbers at once (due to the binary nature of the Null Subject Parameter).

- This paper:
  (i) The historical development of (referential) null subjects typically involves an intermediate stage of partial pro-drop (null subjects are confined to certain slots of the paradigm).
  (ii) Referential null subjects may develop as a side-effect of the transition from pronouns to agreement markers in cases where the latter change gives rise to gaps in the paradigm of (overt) weak pronominal forms.
  (iii) Syntax-morphology interface: Connection between pro-drop and the inventory of (weak) pronominal forms; a null realization of weak pronominal categories becomes available in the absence of more specified candidates/exponents (due to some form of the Elsewhere Condition, Kiparsky 1973, 1982).

2. The rise of referential null subjects

2.1 The development of (partial) pro-drop in Bavarian

1sg	-∅
2sg	-st
3sg	-t
1pl	-an(t)
2pl	-ts
3pl	-an(t)

Table 2: Verbal agreement/Bavarian

- Referential null subjects in Bavarian: 2sg, 2pl (plus 1pl in some dialects), cf. Bayer (1984), Weiß (1998):

(2) a. ob-st (du) noch Minga kumm-st
whether-2SG you.SG to Munich come-2SG
'...whether you come to Munich'
b. ob-ts (ees/ihr) noch Minga kumm-ts
whether-2PL you.PL to Munich come-2PL
'...whether you(PL) come to Munich'

(3) dass-ma (mia) koã geid ned hã-ma
that-1PL we no money not have-1PL
'...that we have no money'
(Kollmer 1987: I, 362)

- Note: The person/number markers that attach to C^0 are inflections, not clitics (cf. e.g. Bayer 1984, Weiß 1998, 2005, Fuß 2005; see appendix I for relevant arguments).
- Historical connection between the rise of referential null subjects and the reanalysis of enclitic subject pronouns as (verbal) agreement morphology (Weiß 2002, Fuß 2005, Axel & Weiß 2011):[1]

Vorfeld	LSK	Mittelfeld	RSK	Nachfeld
Gesdan yesterday	hoab-**t** have-2pl	**=s** an Buam CLIT.2PL a boy	gseng seen	∅
Gesdan	hoab-**ts**	$\varnothing_{\textbf{pron}}$ an Buam	gseng	∅

Figure 1: Reanalysis of subject pronouns as verbal agreement morphology

[1] The evidence available to us suggests that the change proceeded as follows (cf. Fuß 2005 for details):
(i) a. V + enclitic (inversion contexts) → V+Agr + *pro*
b. Extension to other C-related elements such as complementizers, relative pronouns etc.
c. Extension of the new ending to verbs in clause-final positions

(4) $[_{CP}$ XP $[_{C'}$ C+V_{fin} $[_{IP}$ $clitic_{subj}$ ...]]] → $[_{CP}$ XP $[_{C'}$ C+V_{fin}+AGR $[_{IP} \varnothing_{pron}$...]]]

a. 2sg: /-s/ + /t/ (< clit. 2sg *t(hu)*, 8th/9th century)
b. 2pl: /-t/ + /s/ (< clit. 2pl *(ee)s*, 13th century)
c. 1pl: /-an/ → /ma/ (< clit. 1pl *ma*, 18th century; e.g., in some Lower Bavarian and Carinthian varieties)

- Results of the reanalysis of subject enclitics (Bavarian):
  (i) **partial pro-drop** (reanalysis is confined to certain slots of the paradigm)[2]
  (ii) **gaps in the paradigm of weak pronominal forms** (2sg, 2pl, and 1pl; cf. Altmann 1984, Bayer 1984):

	Verbal agreement suffixes	Subject clitics
1sg	-∅	=e
2sg	-st	-
3sg	-t	=a (mask)/=s (fem)
1pl	-an(t)	=ma
	-ma (in some varieties)	-
2pl	-ts	-
3pl	-an(t)	=s

Table 3: Verbal agreement (pres.indic.) and subject clitics in Bavarian

(5) *Generalization: Partial pro-drop in Bavarian*
Null subjects are available in contexts where the paradigm of weak pronominal forms exhibits gaps.

2.2 Swiss Rhaeto-Romance varieties

- Swiss Rhaeto-Romance dialects (spoken in the canton Graubünden) exhibit a rich inventory of agreement markers (cf. e.g. Linder 1987):

	Puter	Vallader	Surmeiran	Surselvan	Sutselvan
1sg	-∅	-∅	-∅	-əl	-∅
2sg	-ast	-ast	-as	-as	-(a)s
3sg	-a	-a	-a, -e	-a	-a
1pl	-ains	-ain(a)	-(g)n	-in, -ein	-(g)n
2pl	-ais	-aivat	-es, -as	-is, -eis	-(e)s, -(a)s
3pl	-an	-an	-an	-an	-an

Table 4: Verbal agreement (present indicative) in five Swiss RR dialects.

- (Systematic) pro-drop is limited to 2nd person contexts, where the inventory of clitic forms exhibits gaps (Haiman 1971, Linder 1987, Hack & Gaglia 2009):

[2] See Fuß (2005) for an explanation of the limited scope of that reanalysis.

	Full pronoun	Proclitic	Enclitic
1sg	eau	a-	-i, a
2sg	tü	t(ü-)	∅
3sg.masc	el	(e)l-	-l
3sg.fem	ella	(el)la-	-la
3sg.neut	ad	a-	-a
1pl	nus	a-	-a
2pl	vus	a-	∅
3pl.masc	els	a-	-e
3pl.fem	ellas	a-	-e

Table 5. Subject pronouns in Puter (Linder 1987)

(6) Hoz est vaira nervus, Paul.
today are really nervous Paul
'Today, (you) are really nervous, Paul.'
(Vallader, Linder 1987: 35)

(7) Cu fais que?
how make-2PL that
'How do (you) make that?'
(Puter, Linder 1987: 35)

- Gaps in the paradigm - reanalysis of enclitic pronouns in inversion contexts:
  (i) 2sg /-s/ → /-st/ via a reanalysis of the 2sg enclitic *-t(i)* (Puter, Vallader, Surmeiran; Widmer 1959, Linder 1987, Haiman and Benincà 1992).[3]
  (ii) 2pl /-(a)i/ → /-(a)is/ via a reanalysis of the 2pl enclitic *(vo)s* (Meyer-Lübke 1894, Linder 1987: 58).[4]
- Conclusion: Similar to Bavarian, there is a correlation between the availability of null subjects and the conversion of former enclitics into verbal agreement suffixes (leading to gaps in the paradigm of weak pronouns; cf. Linder 1987: 53ff. for a related idea).

[3] Surselvan and Sutselvan exhibit 2sg /-s/. However, it is not entirely clear whether these dialects have retained the original ending or whether they underwent a similar historical process as Puter, Vallader, and Surmeiran (reanalysis of enclitic *-t(i)*), followed by loss of final /-t/.

[4] Vallader exhibits the 2pl ending *-aivat*, which is unique among the Swiss RR dialects. However, it has been argued that this form also developed via a reanalysis of a clitic form (cf. Gartner 1883, Widmer 1959, Linder 1987): First, a reduced form of the 2pl pronoun *vos* (clitic *va* without final *-s*; a similar form *vo* still exists in present-day Puter) was reanalyzed as an enlargement of the existing 2pl ending *-ai*, cf. the following example from early Vallader (Chiampel, Ps. 58) cited in Widmer (1959: 99):
(i) Pud-**aiw** wuo foars'ilg uaira dyr?
can-2PL you perhaps=the truth say
'Can you perhaps tell the truth?'
In a second step, the ending /-t/ was added on analogy with other tenses where 2pl is signaled by the agreement suffix /-t/.

2.3 Oevdalian

- Dialect/language spoken in the north-western part of Dalecarlia (Sweden, 3000-4000 speakers).

1sg	-∅
2sg	-∅
3sg	-∅
1pl	-um(t)
2pl	-ið
3pl	-a (=infinitive)

Table 6: Verbal agreement/Oevdalian (Rosenkvist 2010: 237)

- Partial pro-drop: 1pl and 2pl pronouns are in general omitted (overt forms used for emphasis; examples from Rosenkvist 2010: 231):[5]

(8) a. Byddjum i Övdalim.
live.1PL in Älvdalen
'We live in Älvdalen.'
b. Ulið fåra nų.
shall.2PL leave now
'You ought to leave now.'

- Rosenkvist (2010):
  (i) Null 1pl subjects developed via a reanalysis of subjectless 1pl imperatives/exhortatives as indicatives.
  (ii) Null 2pl subjects developed via a reanalysis of weak subject pronouns as verbal agreement formatives (replacing the original ending 2pl -/in/), quite similar to the changes that took place in Bavarian (Rosenkvist 2010: 250):

(9) farin ið > fari ið > far ið > farið

- Conclusions/Oevdalian:
  (i) The development of null subjects did not take place in a wholesale fashion (⇒ **partial pro-drop**);
  (ii) At least the 2pl null forms evolved via a reanalysis of (weak) pronouns as agreement markers.

[5] The 1pl and 2pl null subjects have different properties. In particular, while 2pl null subjects may occur in all syntactic contexts, null 1pl forms are confined to preverbal position in both main and embedded clauses. Rosenkvist (2010) analyzes the null 1pl forms as context-linked elements which are not licensed in cases where access to the discourse context is blocked by an intervening topicalized element. In contrast, null 2pl forms are considered to be agreement-related empty categories, which are not sensitive to the discourse-semantic context.

2.4 Non-standard French

- Non-standard varieties of French: Transition from a [-pro-drop]-grammar to a [+pro-drop]-grammar (via a reanalysis of subject clitics as agreement markers).[6]
- The transition is reflected by a set of properties in which the subject 'clitics' of Colloquial French differ from those of the standard language.
- Subject clitics are obligatory and cannot be replaced by full tonic pronouns (historically an oblique form); examples with apparent clitic doubling generally favor a basic, non-dislocated interpretation:

(10) (Moi) *(je) porte la table. *Colloquial French*
me CLIT.1SG carry the table
'I carry the table.'

- In contrast to Standard French, pronouns cannot be dropped in conjoined clauses (cf. Lambrecht 1981, Zribi-Hertz 1994, Fonseca-Greber & Waugh 2003):

(11) Il mange et boit comme un cochon. *Standard French*
he eats and drinks like a pig

(12) I mange et *(i) boit comme un cochon. *Colloquial French*
he eats and he drinks like a pig

- The preverbal 'clitics' occur in a fixed position relative to the verb stem. For example, they fail to undergo subject-verb inversion in matrix interrogatives, as shown in (18) (Friedemann 1997: 3f.):

(13) Où est-il parti? *Standard French*
where is=he gone
'Where did he go to?'

(14) Où il-est parti? *Colloquial French*
wherehe-is gone
'Where did he go to?'

- Extension of doubling to quantified expressions and indefinite NPs (in 'advanced' non-standard varieties of French such as Picard, or Pied-Noir; cf. Roberge 1990, Friedemann 1997, Auger 1994b, 2003):[7]

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[6] Cf. e.g. Ashby (1977), Harris (1978), Lambrecht (1981), Roberge (1990), Zribi-Hertz (1994), Auger (1994a) (on Quebec French), Fonseca-Greber (2000), Fonseca-Greber and Waugh (2003) (on Swiss French), Gerlach (2002), Roberts (2010b); but see de Cat (2005) for an opposing view.

[7] Corpus studies carried out by Fonseca-Greber (2000) and Fonseca-Greber & Waugh (2003) show that doubling is being extended to contexts with quantified NPs in spoken (Swiss) French as well. Auger (2003: 5) notes that in Picard, a default 3sg.masc clitic is also present in wh-questions:

(15) Personne **i(l)** sait qui c'est leur mère.
nobody he knows who that-is their mother
'Nobody knows who is their mother.'
(Pied-Noir, Friedemann 1997: 125)

(16) Un homme **il** vient.
a man he comes
(Pied-Noir, Roberge 1990: 97)

(17) Chacun **il** a sa chimère.
everybody he has his spleen
'Everybody has a spleen.'
(Picard, Friedemann 1997: 125)

- Conclusion: If the preverbal 'clitics' are agreement markers, rather then pronouns, then examples without additional subject must feature a null subject.
- Observation: Change does not affect all pronominal forms in a similar way - 1st and 2nd person forms are leading the charge.
- Fonseca-Greber & Waugh (2003) (corpus study of spoken Swiss French):
  (i) no cases where a tonic 1st or 2nd pronoun occurs without a clitic (i.e, doubling seems to be obligatory);
  (ii) with 3rd person forms, doubling is not yet fully obligatory (3sg: 91,5%, 3pl: 93,6%; a similar finding is reached by Gerlach 2002):

(18) a. La mentalité est différente
the mentality is different
'It's a different mentality.'
b. les gens m'appréciaient
the people 1SG.ACC-appreciate-IMPERF.3PL
'The people appreciated me.'
(Fonseca-Greber 2004: 86)

2.5 Summary

- In various languages, we can observe a change in which pro-drop results from the reanalysis of subject pronouns as verbal agreement markers.
- The change does not take place in a wholesale fashion, but rather affects certain persons and numbers before others, typically giving rise to **partial pro-drop**.
- The rise of null subjects seems to be linked to gaps in the paradigm of weak pronominal forms.

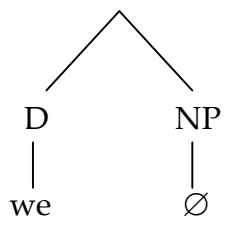
(i) tchèche qu' **il** a dit qu' i folloait nin finir?
who that he has said that it had-to of-it to-finish
'Who said we had to put an end to it?'

3. Partial pro-drop = zero exponence + de-blocking

- **Basic ideas**:
  (i) pro-drop: no special empty category such as *pro*, but a null realization of regular weak pronouns (Holmberg 2005, Roberts 2010a).
  (ii) (Partial) pro-drop becomes available in contexts where the paradigm of overt weak pronouns exhibits gaps.
- Formal implementation: A null spell-out is made available by the absence of a more specified competing overt realization (**'de-blocking'**).[8]
- **Background assumptions:**
  (i) Realizational model of grammar: Morphology interprets syntax; phonological exponents of abstract morphosyntactic features such as [±pl] are inserted post-syntactically (cf. e.g. Halle & Marantz 1993).
  (ii) Insertion of phonological material/exponents: subject to the following conditions (the *Subset Principle*, Halle 1997: 428):
    (a) the feature specification of the phonological exponent must be compatible with the insertion context;
    (b) the existence of a more specified potential exponent blocks the use of less specified exponents (= Kiparsky's *Elsewhere Condition*).
  (iii) Syntactic structure of pronouns I: pronouns correspond to the category D (Postal 1969, Abney 1987): (a) similar to determiners, pronouns are inherently linked to the feature [±definite]; (b) pronouns and determiners exhibit a similar syntactic distribution:

(19) a. the linguists
b. we/you linguists

  (iv) Syntactic structure of pronouns II:
    (a) **strong pronouns** are internally complex (D taking an NP complement, either overt as in (19b) or empty as in (20a), cf. Freidin & Vergnaud 2001);
    (b) **weak pronouns** correspond to a non-complex syntactic D-head:[9]

(20) a.


b. D

[8] See Neeleman & Szendröi (2007) for related ideas (to account for 'radical pro-drop' in e.g. Chinese).

[9] $D^{min/max}$ in terms of Bare Phrase Structure, Chomsky (1995), Roberts (2010a). See e.g. Uriagereka (1995), Cardinaletti & Starke (1999), Déchaine & Wiltschko (2002), Neeleman & Szendröi (2007), and Holmberg (2005) for in-depth discussion of the internal structure of pronominal elements (including further nuances of structural deficiency, e.g., clitics = φP).

(v) Feature content of pronominal D:

(21)

Strong pronominal D	**Weak pronominal D**
[+pronominal]	[+pronominal]
[+definite]	[+definite]
[φ]	[φ]
[+deictic]	-
[+stress]	-
[+human]	-

(vi) The syntactic distinction between strong and weak forms is universally available; cross-linguistic variation is confined to the lexicon, i.e.,
(a) the inventory of exponents that can be inserted into pronominal D;
(b) the feature specifications of these exponents.

3.1 Strong pronouns, weak pronouns, and null pronouns

- Strong forms: Exponents realizing strong forms are specified for [+deictic, +stress] (and possibly [+human], Delfitto & Corver 1993, Cardinaletti & Starke 1999).
- Weak forms: Exponents linked to weak forms lack these specifications.
- **Results**:
  (i) Strong forms cannot be inserted into weak pronominal D (**feature mismatch**);
  (ii) More specified strong forms block the use of underspecified weak forms in strong contexts (**Elsewhere Condition/Subset Principle**).
- Example: Strong and weak variants of 3sg.masc.nom in Bavarian (PSE= *Participant in Speech Event*, Halle 1997):

(22) a. [D +pron., +definite, +NOM, –PSE, –PL, +MASC, +deictic, +stress] ↔ /ɛːr/
b. [D +pron., +definite, +NOM, –PSE, –PL, +MASC] ↔ /a/

- Null subjects: zero exponence of weak pronominal D, by assumption universally available (cf. Neeleman & Szendröi 2007), and of course heavily underspecified:[10]

(23) [D +pronominal, +definite] ↔ ∅

- **Diachronic predictions:**
  (i) De-blocking: Null spell-out becomes available in contexts where the lexicon does not any longer contain a competing overt form (gaps in the paradigm): Bavarian, French, Rhaeto-Romance etc.
  (ii) Blocking: Development of overt realizations of weak pronominal D prevents null spell-out.

[10] Note that the null realization of function words seems to be quite common across languages (determiners: Russian, Japanese, Tagalog, copula verbs: Russian, Indonesian, Tamil, weak pronouns: Italian, Greek, Chinese, complementizers: Turkish, Tsez, Inuktitut).

4. The loss of null subjects

3.1 Finnish

- Null subjects are confined to 1st and 2nd person despite the fact that Standard Finnish exhibits a fully distinctive agreement paradigm (Vainikka & Levy 1999).[11]

(24) a. (Minä) puhun englantia.
I speak-1SG English
b. (Sinä) puhut englantia.
you speak-2SG English
c. *(Hän) puhuu englantia.
he/she speak-3SG English
d. (Me) puhumme englantia.
we speak-1PL English
e. (Te) puhutte englantia.
you speak-2PL English
f. *(He) puhuvat englantia.
they speak-3PL English
(Holmberg 2005: 539)

	Pronouns	Agreement
1sg	minä	-n
2sg	sinä	-t
3sg	hän	-V
1pl	me	-mme
2pl	te	-tte
3pl	he	-vAt

Table 7: Pronouns and subject agreement in (Standard) Finnish[12]

- Analysis: Standard Finnish lacks overt 1st and 2nd person weak pronouns; overt 1st and 2nd person pronouns are strong forms specified for [+deictic] and/or [+stress].[13]

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[11] Historically, the 1st and 2nd person verbal agreement markers developed from pronouns. This is particularly clear in the case of 1pl and 2pl. In the singular, the link is less transparent, but can be easily reconstructed historically. In the case of 2sg, the original pronoun was *tinä*, which later changed into *sinä* due to a general phonological rule /ti/ >>> /si/, which is still at work in present-day Finnish. The 1sg suffix /-n/ developed from former /-m/. No such relation can be constructed for the 3rd person endings, which developed from an active present participle suffix.

[12] "-V" represents an empty vowel that is similar to the preceding vowel and results in vowel lengthening. The "A" in "-vAt" represents a vowel undergoing vowel harmony.

[13] Alternative analyses: (i) Only 1st and 2nd person agreement markers are [+pronominal] since they bear systematic phonological resemblances to the relevant pronouns (Vainikka & Levy 1999). (ii) Partial pro-drop languages such as Finnish or Hebrew are in principle full pro-drop languages in which pro-drop is blocked in 3rd person contexts for independent reasons (cf e.g. Koeneman 2006).

- Result: Relevant lexical items do not block a null-spell out of weak pronominal D (exponents specified for [+deictic] and [+stress] cannot be inserted into weak pronominal D, which does not contain these features).
- No pro-drop with 3rd person forms: Distinction between strong [+human] 3rd person forms (3sg *hän*, 3pl *he*) and weak forms (3sg *se*, 3pl *ne*) (< weak demonstratives) ⇒ **the presence of the latter blocks a null spell-out of weak pronominal D** [14]

	strong forms	weak forms
1sg	minä	∅
2sg	sinä	∅
3sg	hän	se
1pl	me	∅
2pl	te	∅
3pl	he	ne

Table 8: Inventory of subject pronouns in Standard Finnish

- Colloquial Finnish: **Development of new weak subject pronouns ⇒ loss of pro-drop** (cf. e.g. Vainikka & Levy 1999, Lappalainen 2009):[15]
  (i) New reduced forms for 1sg and 2sg (the 3rd person forms correspond to the weak forms of the standard language);
  (ii) The new forms are generally unstressed (cf. e.g. Holmberg & Nikanne 2006: 5).

	Subject pronouns	Verbal agreement
1sg	mä	-n
2sg	sä	-t
3sg	se	-V
1pl	me	-tAAn
2pl	te	-tte
3pl	ne	-V

Table 9: Pronouns and subject agreement in Colloquial Finnish

[14] Still unclear: Under certain conditions, Finnish exhibits a null realization of 3rd person forms as well (referential pronouns in embedded clauses with an antecedent in the matrix clause, generic/impersonal pronouns, and expletives, cf. Vainikka & Levy 1999, Holmberg 2005). Tentative proposal: in these contexts, the relevant 3sg forms are also underspecified. This seems to hold true of expletives; for 3sg referential pronouns one might invoke a process of Impoverishment that deletes morphosyntactic features under certain circumstances (e.g., A-binding by a matrix subject), expanding the domain of the underspecified null realization.

[15] Furthermore, the 1pl verbal agreement suffix is replaced by -tAAn, originally an impersonal passive affix, and the 3rd person endings have fallen together. Vainikka & Levy (1999) suggest that these changes disrupted the systematic similarities between 1st and 2nd person pronouns and agreement endings. As a consequence, the latter lose their [+pronominal] status, leading to the loss of (partial) pro-drop in Colloquial Finnish (see Koeneman 2006 for an alternative analysis that attributes the loss of pro-drop to the loss of a fully distinctive agreement paradigm).

- 1sg and 2sg: Loss of pro-drop can be directly related to the development of new weak/clitic forms (more distinctive realizations of D that block a null spell-out).
- Observation (spoken varieties of Finnish): Strong and weak pronouns are marked by differences in vowel length (Anne Vainikka, p.c.; see also the description of the vernacular of Jyväskylä on http://www.cc.jyu.fi/~tojan/rlang/finn2.htm, 17.01.2009).
- Variety of Tampere: three different types of pronouns dependent on stress and vowel length (Anne Vainikka, p.c.):

(25) a. unstressed with short vowel
b. unstressed with long vowel
c. stressed with long vowel

	Stressed forms	Unstressed forms
1sg	mä:	mä/mä:
2sg	sä:	sä/sä:
3sg	se:	se/se:
1pl	me:	me/me:
2pl	te:	te/te:
3pl	ne:	ne/ne:

Tabelle 1: Strong and weak subject pronouns, colloquial Finnish (dialect of Tampere)

- A short vowel clearly indicates a weak form ⇒ **overt spell-out of weak pronominal D, blocking a null realization**
- Problem: Loss of null subjects might also be due to the the loss of distinctive Agr-morphology (syncretism of 3sg with 3pl, cf. Koeneman 2006) ⇒ comparative evidence from Estonian...

4.2. Estonian

- Estonian is a close relative of Finnish, which also exhibits a rich inventory of agreement markers:

	Weak subject pronouns	Verbal agreement
1sg	ma	jookse-n 'I run'
2sg	sa	jookse-d 'you run'
3sg	ta	jookse-b 'he/she run'
1pl	me	jookse-me 'we run'
2pl	te	jookse-te 'you.pl run'
3pl	nad	jookse-vad 'they run'

Table 10: Weak pronouns and subject agreement (pres.indic.) in Estonian

- Variation between pro-drop and use of overt (weak) pronouns in spoken Estonian: According to Pool (1999), overt forms are more frequent than pro-drop (~60%, see also Duvallon and Chalvin 2004) - an instance of grammar competition?
- Agreement reduction in southern and western dialects of Estonian: Loss of 1sg /-n/ has led to syncretism of 1sg and 3sg pres.indic. forms (Tartu and Võru dialects, cf. Lindström & Kalmus 2009).[16]
- Question: Connection between agreement reduction and the use of overt pronouns?
- Lindström & Kalmus (2009): Study of the impact of 1sg agreement reduction on the use of overt (weak) pronominal forms in various Estonian dialects:

Dialect	with pronoun	without pronoun	Total	1sg ending
Muhu	68.2% (187)	31.8% (87)	274	/-n/ ~ Ø
Varbla	71.2% (84)	28.8% (34)	118	/-n/ ~ Ø
Töstamaa	80.5% (178)	19.5% (43)	221	Ø
Kihelkonna	89.2% (83)	10.8% (10)	93	Ø
Vastseliina	63.1% (123)	36.9% (72)	195	Ø
Tarvastu	76.1% (137)	23.9% (43)	180	Ø
Röngu	57.8% (96)	42.2% (70)	166	Ø
Harju-Madise	71.1% (133)	28.9% (54)	187	/-n/
Viru-Jaagupi + Väike-Maarja	45.7% (37)	54.3% (44)	81	/-n/
Ambla	68.5% (139)	31.5% (64)	203	/-n/
Kuusalu	57.7% (60)	42.3% (44)	104	/-n/
Kodavere	58.7% (74)	41.3% (52)	126	/-n/
Torma	65.8% (125)	34.2% (65)	190	/-n/

Table 11: Shape of 1sg agreement and pronoun use in 14 Estonian dialects (Lindström & Kalmus 2009)

- Conclusions (Lindström & Kalmus 2009):
  (i) No clear correlation between loss of 1sg /-n/ and the use of overt 1sg pronouns.[17]
  (ii) No significant increase of pronoun use in the Tartu (Röngu) and Võru (Vastseliina) dialects (marked by shading in Table 13), where loss of 1sg /-n/ has led to syncretism of 1sg with 3sg.

[16] In addition, the loss of /-n/ led to syncretism of 1sg pres.indic forms with 2sg imperative and pres.indic.neg (in all relevant dialects).

[17] See Lindström & Kalmus (2009) for a detailed study of the factors that govern the use of overt 1sg pronouns, including referential distance, text and sentence structure, shape of verbal agreement (presence/absence of /-n/), and tense. Interestingly, Lindström & Kalmus show that the most important of these factors is the relative distance to a 1sg referent introduced earlier in the discourse.

5. Concluding summary

- Diachronic predictions of standard agreement-related theories of pro-drop are not borne out by the facts.
- The rise of (agreement-related) null subjects seems to proceed in a step-by-step fashion, typically giving rise to partial pro-drop (when the change has been completed for all persons and numbers, this may eventually lead to a full pro-drop grammar; possible example: Non-Standard French).
- The historical emergence of pro-drop does not seem to be sensitive to properties of the agreement paradigm as a whole (e.g., number of distinctive forms, existence of syncretisms etc.).
- Rather, referential null subjects may develop as a side-effect of the reanalysis of pronouns as agreement markers (see also Givón 1976) in cases where this change creates gaps in the paradigm of (overt) weak pronominal forms.
- Analysis in terms of 'de-blocking': Null spell-out of weak pronominal D becomes available in the absence of more specified candidates/exponents (due to some form of the Elsewhere Condition)

Appendix I: On the status of complementizer agreement in Bavarian

- Person/number markers that attach to the complementizers in (2)-(3) are inflections, not pronominal clitics:
  (i) 2nd person *-st/-ts* are obligatorily present: (a) they cannot be replaced by a strong pronoun; (b) 2nd person strong pronouns must co-occur with *-st/-ts* (cf. (2) above):[18]

(26) a. *ob du noch Minga kumm-st
whether you.SG to Munich come-2SG
'whether you come to Munich'
b. *ob ees/ihr noch Minga kumm-ts
whether you.PL to Munich come-2PL
'whether you come to Munich'

- This contrasts with the behavior of 'real' subject clitics (1sg/3rd person):

(27) a. ob=e (*I) noch Minga kumm
whether=CLIT.1SG I to Munich come-1SG
b. ob i noch Minga kumm
whether I to Munich come-1SG
'whether I come to Munich'

(ii) Inversion contexts: alleged 'clitics' *-st/-ts* cannot attach to the inflected verb:[19]

(28) a. *Kumm-st=st noch Minga?
b. *Kumm-ts=ts noch Minga?

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[18] The same goes for 1pl /-ma/ in a couple of Lower Bavarian and Carinthian varieties:
(i) a. wem-**ma** (mia) aaf Minga fon
when-1PL we to Munich drive
b. *wem mia aaf Minga fon
when we to Munich drive
'when we drive to Munich'
(Weiß 2002:9)

[19] Evidence against an analysis of (28) in purely phonotactic terms comes from comparatives. In comparatives, complementizer agreement becomes unavailable if the finite verb is deleted (Bayer 1984):
(i) a. D'Resl is gresser [als wia-st du bist].
b. *D'Resl is gresser [als wia-st du ~~bist~~].
c. D'Resl is gresser [als wia du ~~bist~~].
Under the assumption that there exists a separate subject clitic *=st*, which is homophonous with the relevant agreement ending, we would expect that the clitic can show up in contexts where the agreement ending on C has been deleted for independent reasons. However, this expectation is not borne out by the facts:
(ii) *D'Resl is gresser [als wia=st (du)].

(iii) 2nd person *-st/-ts* cannot be derived from the relevant full pronouns via phonological reduction; rather, they are identical with the relevant verbal agreement suffixes:

	Full pronoun	C-Agreement	Verbal agreement
2sg	du	-st	-st
2pl	ees/ihr	-ts	-ts

Table 12: 2nd person tonic pronouns and agreement formatives in Bavarian

- Conclusions:
  (i) The 2nd person forms *-st*, *-ts* are inflections, not clitics.
  (ii) Bavarian lacks 2nd person (and 1pl) subject clitics (i.e., the reanalysis of pronouns gave rise to gaps in the paradigm of weak pronominal forms).

Appendix II: Some speculations on the identification of zero pronouns

- Absence of competing overt forms licenses a null realization.
- Further condition: The content of the null pronoun must be identified.
- Different ways of recovering the identity of the null element:
  (i) distinctive verbal agreement morphology (Ital., Bavarian, Std. Finnish etc.).
  (ii) discourse oriented strategies (null realization of salient discourse topics in languages such as Chinese, Japanese, Tagalog etc.).
- Identification as a necessary component for the availability of pro-drop: Even Italian exhibits merely partial pro-drop in contexts where the agreement endings are less distinctive, e.g., in the present subjunctive:

1sg	parli
2sg	parli
3sg	parli

Table 13: Present subjunctive singular of *parlare*

- Present subjunctive: It seems that most speakers accept a null spell-out of 3sg. With 1sg and 2sg, a null realization is either highly dispreferred (1sg) or ruled out (2sg) (Denis Delfitto, Alessandra Tomaselli, Gildo Bidese, p.c.).
- Question: Why can 3sg be dropped? (verbal Agr-morphology is non-distinctive)
- Suggestion (Denis Delfitto, p.c.): Argument in favor of complete under-specification of 3sg: both 3rd person and singular can be analyzed as default values that can be analyzed as resulting from the complete absence of person and number specifications (cf. Benveniste 1950, Halle 1997, Noyer 1997, Harley & Ritter 2002).

- If 3sg forms are completely underspecified, the non-distinctive verbal agreement morphology can be taken to identify the default person-number combination, making available a null realization of the relevant weak pronoun.
- Open question: Which mechanism governs the identification of feature content?

(i) During the syntactic derivation: Agree, binding (enabling a later null spell-out)?

(ii) During the post-syntactic computation: feature copying?

(iii) Superficial, parsing-related process?

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