

1sg	-∅
2sg	-st
3sg	-t
1pl	-(n)
2pl	-(n)
3pl	-(n)

Table 2: Verbal agreement/Frisian

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

Table 3: Verbal agreement/Bavarian

- (ii) Partial pro-drop despite a fully distinctive agreement paradigm (Finnish: pro-drop confined to 1st and 2nd person; Vainikka & Levy 1999, Holmberg 2005):
- (4) 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)

- Alternative approach: Licensing of (partial) pro-drop is sensitive to properties of the inventory of pronominal forms (cf. e.g. Neeleman & Szendrői 2007).

2. Null subjects as a null spell-out of regular weak pronouns

- **Basic ideas:**

- (i) pro-drop: no special empty category (e.g., *pro*), but a null realization of regular weak pronouns (Holmberg 2005, Roberts 2007).
- (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**”).

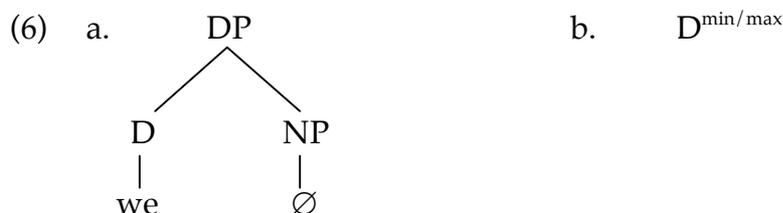
- **Background assumptions:**

- (i) Late insertion: Morphology operates post-syntactically, realizing bundles of abstract morphosyntactic features via the process of Vocabulary Insertion (Distributed Morphology; Halle & Marantz 1993).
- (ii) Vocabulary Insertion: subject to the following conditions (the *Subset Principle*, Halle 1997: 428):
- (a) the feature specification of the phonological component must be compatible with the insertion context;
 - (b) the existence of a more specified potential exponent blocks the use of less specified exponents.
- (iii) Syntactic structure of pronouns I: pronouns correspond to the category D (Postal 1969, Abney 1987): (a) similar to determiners, they are inherently linked to the feature [\pm definite]; (b) pronouns and determiners exhibit a similar syntactic distribution:

- (5) a. the linguists
b. we/you linguists

(iv) Syntactic structure of pronouns II:

- (a) **strong pronouns** take an NP complement (either overt as in (5b) or empty as in (6a), cf. Freidin & Vergnaud 2001);
(b) **weak pronouns** are non-complex syntactic heads ($D^{\min/\max}$ in terms of Bare Phrase Structure, Chomsky 1995, Roberts 2007):¹



(v) Feature content of pronominal D:

(7) Strong pronominal D	Weak pronominal D ($D^{\min/\max}$)
[+pronominal]	[+pronominal]
[+definite]	[+definite]
[ϕ]	[ϕ]
[+deictic]	
[+stress]	
([+human]) ²	

(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 Vocabulary Items that can be inserted into pronominal D;
(b) the feature specifications of these Vocabulary Items.

2.1 Strong pronouns, weak pronouns, and null pronouns

- Strong forms: Vocabulary Items realizing strong forms are specified for [+deictic], [+stress] (and possibly [+human]).
- Weak forms: Vocabulary Items 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 (due to the Subset Principle).
- Example: Strong and weak variants of 3sg.masc.nom in Bavarian (PSE= *Participant in Speech Event*, Halle 1997):

- (8) a. [_D +pron., +definite, +NOM, -PSE, -PL, +MASC, +deictic, +stress] ↔ /ɛ:r/
b. [_D +pron., +definite, +NOM, -PSE, -PL, +MASC] ↔ /a/

- Null subjects: zero exponence of weak pronominal D ($D^{\min/\max}$):

- (9) [_D +pronominal, +definite] ↔ ∅

¹ See e.g. Uriagereka (1995), Cardinaletti & Starke (1999), Déchaine & Wiltschko (2002), Neeleman & Szendrői (2007), and Holmberg (2005) for more elaborate theories of the internal structure of pronominal elements.

² Cf. Delfitto & Corver (1993) and Cardinaletti & Starke (1999).

- Assumption: A null realization of function words is universally available (as the default case, cf. e.g. Neeleman & Szendrői 2007).
- (10) *Null realization of*
- a. Determiners (Old High German, Russian, Polish, Japanese, Tagalog)
 - b. Copula verbs (Russian, Indonesian, Chinese, Tamil)
 - c. Weak pronouns (Italian, Spanish, Greek, Chinese, Japanese)
 - d. Complementizers (Turkish, Tsez, Inuktitut)
- Null realization of $D^{\text{min}/\text{max}}$ is underspecified for case/person/number distinctions.
 - Overt realizations of weak pronouns realize a greater subset of morphosyntactic features, compare (8b).
 - **Predictions:**
 - (i) Blocking: Presence of overt realizations of $D^{\text{min}/\text{max}}$ prevents null spell-out.
 - (ii) De-blocking: Null spell-out becomes available in contexts where the lexicon does not contain a competing overt form (gaps in the paradigm).

3. Partial pro-drop I: Bavarian

- Bavarian exhibits null subjects in 2nd person contexts (plus 1pl in some dialects), cf. e.g. Bayer (1984), Weiß (1998, 2002, 2005):

- (11) a. Kumm-st \emptyset noch Minga, dann muas-st \emptyset me b'suacha.
 come-2SG to Munich then must-2SG me visit
 'If you come to Munich you must visit me.'
 (Bayer 1984: 211)
- b. Kumm-ts \emptyset noch Minga, dann müaß-ts \emptyset me b'suacha.
 come-2PL to Munich then must-2PL me visit
 'If you come to Munich you must visit me.'

- (12) Fahr-ma (mia) noch Minga?
 drive-1PL we to Munich
 'Will (we) go to Munich?'

- (13) a. *Kumm \emptyset noch Minga...
 come-1SG to Munich
 'If I come to Munich, ...'
- b. *Kumm-t \emptyset noch Minga?
 come-3SG to Munich
 'Will he/she/it come to Munich?'
 (Bayer 1984: 239)

- These are the very same contexts in which Bavarian exhibits the phenomenon of complementizer agreement (Pfalz 1918, Bayer 1984, Altmann 1984, Zwart 1993, Weiß 1998, 2002, 2005):

- (14) 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'

- Pro pro-drop: on the clitic status of -st, -ts:

- (i) -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:³

- (15) 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):

- (16) 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:⁴

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

- (iii) In contrast to the 'real' clitic pronouns, -st/-ts do not bear a resemblance to the relevant full pronouns; rather, they are identical with the relevant verbal agreement suffixes:

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

Table 4: 2nd person tonic pronouns and agreement formatives in Bavarian

- Conclusions:

- (i) The 2nd person forms -st, -ts are inflections (contra e.g. Nübling 1992).

³ The same goes for 1pl /-ma/ in a couple of Lower Bavarian and Carinthian varieties:

- (i) a. wem-**ma** aaf Minga fon
 when-1PL to Munich drive
 b. wem-**ma** mia aaf Minga fon
 when-1PL we to Munich drive
 c. *wem mia aaf Minga fon
 when we to Munich drive
 'when we drive to Munich'
 (Weiß 2002:9)

⁴ Evidence against an analysis of (17) 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)].

- (ii) Bavarian lacks 2nd person (and 1pl) subject clitics (i.e., there are gaps in the paradigm of weak/clitic subject pronouns, cf. e.g. Altmann 1984: 200).⁵

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

Table 5: Agr suffixes (pres.indic.) and subject clitics in present-

- (18) *Generalization: Partial pro-drop*

Null subjects are available in contexts where the paradigm of weak pronominal forms exhibits gaps.

- Analysis in terms of deblocking: Null realization of $D^{\min/\max}$ becomes available in contexts where the lexicon does not contain a more specified overt weak form.

4. Partial pro-drop II: Finnish

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

- (19) 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)

1sg	-n
2sg	-t
3sg	-V
1pl	-mme
2pl	-tte
3pl	-vAt

Table 6: Verbal agreement paradigm of Standard Finnish⁶

⁵ The gaps in the pronominal paradigm resulted from a reanalysis of the relevant weak forms as verbal agreement suffixes, cf. Fuß (2005) for details.

⁶ “-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.

- Vainikka & Levy (1999): 1st and 2nd person agreement markers are [+pronominal] since they bear systematic phonological resemblances to the relevant pronouns:⁷

	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

- Unclear: Are learners of Finnish really capable of identifying the similarities between pronouns and agreement endings?⁸
- Alternative approach: Standard Finnish lacks overt 1st and 2nd person weak pronouns; overt 1st and 2nd person pronouns are strong forms specified for [+deictic] and [+stress].
- Result: Relevant VIs do not block a null-spell of $D^{\min/\max}$ (VIs specified for [+deictic] and [+stress] cannot be inserted into weak pronominal D).
- No pro-drop with 3rd person forms: 3rd person forms such as *hän* are in fact weak pronouns (blocking a null spell-out of $D^{\min/\max}$).
- Observation: In addition to the subject pronouns 3sg *hän*, 3pl *he*, demonstratives such as *tämä*, *se* (sg) and *ne* (pl) can be used anaphorically to refer back to 3rd person referents (cf. Laury 1991, Kaiser & Hiietam 2003, and dal Pozzo 2007).
- Distribution: When occurring in an embedded clause, *hän* 'he' is typically used to refer back to the subject of the matrix clause, while the demonstrative *tämä* is used to refer back to a less salient, backgrounded antecedent (typically the last mentioned out of two possible referents):

- (20) a. Sitten **eversti**_i piti puheen. **Hän**_i koetti saada
 then colonel.NOM held speech he tried get.INF
 ääneensä tiettyä toverillista sävyä.
 voice.ILLAT.3POSS certain.PART friendly.PART tone.PART
 'Then **the colonel** gave a speech. **He** tried to get a certain friendly tone into his voice.'
- b. Lammio_i huusi **Mielosta**_j, ja **tämä**_j tuli
 L.NOM shout.PAST.3SG M.PART and DEM.NOM come.PAST.3SG
 sisään lähetit kannoillaan.
 in messenger.PL heel.PL.ADESS.3POSS
 'Lammio called for **Mielonen**, and **he** came in with the messengers on his heels.'
 (Kaiser & Hiietam 2003: 655)

⁷ 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.

⁸ See Koenenman (2007) for an alternative analysis based on the idea that 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.

- Distribution of *hän* is reminiscent of the use of null pronouns in Italian, where null subjects have a strong tendency to refer back to an antecedent in SpecIP, while overt forms typically refer back to an element occupying a lower position (Carminati 2002, examples taken from Sorace & Filiaci 2006):

- (21) a. Al colloquio per il posto di lavoro, **ognuno**_i ha detto che Ø_i/**lui**_k vorrebbe prendere le ferie in Agosto.
'At the interview for the post, **everyone**_i said that Ø_i/**he**_k would like to take holidays in August.'
- b. Maria_i scriveva spesso a **Piera**_k quando **lei**_{k/??i} era negli Stati Uniti.
'Maria_i used to write often to **Piera**_k when **she**_{k/??i} was in the USA.'

- Tentative conclusion: 3rd person pronouns in Standard Finnish are (preferably) weak forms, with demonstratives used as strong anaphoric forms:⁹

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

Table 8: Inventory of subject pronouns in Standard Finnish

- Colloquial Finnish: Development of new weak subject pronouns ⇒ loss of pro-drop (Vainikka & Levy 1999).

	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

- New reduced forms for 1sg and 2sg (in addition, the 3rd person pronouns 3sg *hän* and 3pl *he* are replaced by the relevant demonstrative forms, *se* and *ne*).¹⁰
- The new forms are generally unstressed (cf. e.g. Holmberg & Nikanne 2006: 5).

⁹ 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.

¹⁰ 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 Koenenman 2007 for an alternative analysis that attributes the loss of pro-drop to the loss of a fully distinctive agreement paradigm).

- Conjecture: At least in the case of 1sg and 2sg, the 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: In general, strong and weak pronouns are marked by differences in vowel length in the spoken language (Anne Vainikka, p.c.; see also the description of the vernacular of Jyväskylä on <http://www.cc.jyu.fi/~tojan/rlang/finn2.htm>).
- Variety of Tampere: three different types of pronouns dependent on stress and vowel length (Anne Vainikka, p.c.):

- (22)
- unstressed with short vowel
 - stressed with long vowel
 - stressed with long vowel

- Evidence for two series of pronouns: a short vowel clearly indicates a weak form that can be analyzed as a spell-out of weak/clitic pronominal D (blocking the competing null realization).

5. Concluding summary

- Evidence from partial pro-drop languages: Correlation between the availability of null subjects and the make-up of the paradigm of overt weak forms \Rightarrow deblocking of a null realization of weak pronominal D in contexts where there is no competing overt form available.
- Typology of pronominal systems:

(23) **Phon. Realization: Strong pronouns** **Weak pronouns**¹¹

a. / α /	/ β / (separate weak forms/clitics)
b. / α /	\emptyset (pro-drop)
c. / α /	/ α / (strong/weak forms identical)
d. * \emptyset	/ α / (null realization of strong forms)
e. * \emptyset	\emptyset (null realization of strong & weak forms)

- (23a): Dialects of German (e.g. Bavarian: Bayer 1984, Altmann 1984, Weiß 1998; cf. Abraham & Wiegel 1993 for an overview).
- (23b):
 - Null realization of all weak subject pronouns: **(full) pro-drop** in languages such as Italian (overt subject pronouns are always strong forms);
 - Null realization confined to certain slots of the paradigm: **partial pro-drop**.
- (23c): Characteristic of standardized languages such as German, English etc. (in contrast, dialects generally exhibit a separate series of weak pronominal forms).¹²
- Apparent problem (standardized languages): Null realization of D^{min/max} impossible despite the absence of overt weak pronouns.

¹¹ More has to be said about languages that exhibit additional stages of deficiency w.r.t. the inventory of pronominal forms (e.g., strong pronouns, weak pronouns, and a separate series of clitic forms). Presumably, the existence of a broader sample of pronominal forms can be attributed to finer-grained distinctions in the underlying syntactic representations.

¹² I am indebted to Joost Kremers for drawing my attention to Standard Dutch, which exhibits strong and weak pronominal forms that differ w.r.t. the quality of the stem vowel (schwa in weak forms, full vowels in the strong pronouns).

- Possible answer: Lack of a separate series of weak pronouns as a special “artificial” property of standardized languages: one pronominal form is used for both strong and weak contexts.¹³
- The relevant Vocabulary Items must be underspecified for the features [\pm deictic] and [\pm stress]:

(24) [_D +pronominal, +definite, +NOM, -PSE, -PL, +MASK] \leftrightarrow / ϵ r/

- Result: The VI in (24) can also be inserted into weak pronominal $D^{\min/\max}$. Since it is more specified than the competing null variant, pro-drop is generally blocked in standardized languages with only a single series of pronominal forms.

¹³ The lack of a separate series of weak/clitic pronouns is intimately linked to the fact that standard languages typically develop from written varieties, which are shaped by strong prescriptive tendencies and typically lack the distinction between strong and weak pronouns.

Appendix: 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 10: 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 agreement morphology is non-distinctive)?
- Suggestion (Denis Delfitto, p.c.): Argument in favor of complete underspecification 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?
- (Partial) pro-drop = Zero exponence + de-blocking + identification

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