Deriving Pro Drop in a Non-Paradigmatic Approach

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Overview

1. Introduction
2. Our proposal
3. Analysis: pro drop languages
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1. Introduction

In some but not all languages can you leave out the subject.

(1) Gianni ha detto che ha telefonato *Italian*
Gianni has said that has.3SG telephoned
'Gianni said that he called'

(2) *John said that has telephoned. *English*

1. Introduction

In some but not all languages can you leave out the subject.

(1) Gianni ha detto che ha telefonato *Italian*
Gianni has said that has.3SG telephoned
'Gianni said that he called'

(2) *John said that has telephoned. *English*

Traditional question: What causes this contrast?

Traditional answer: It's the richness of inflection.

1. Introduction

	English	Italian
1SG	sing-∅	parl-o
2SG	sing-∅	parl-i
3SG	sing-s	parl-a
1PL	sing-∅	parl-iamo
2PL	sing-∅	parl-ate
3PL	sing-∅	parl-ano

Poor agreement **Rich agreement**

1. Introduction

	English	Italian
1SG	sing-∅	parl-o
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3SG	**sing-s**	**parl-a**
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Note that it is not immediately obvious from a functional perspective why you can't drop the subject in English in 3SG…

1. Introduction

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1SG	sing-∅	parl-o
2SG	sing-∅	parl-i
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…because the *–a* in Italian would express the same information about the missing subject as the *–s* in English.

1. Introduction

In order to understand the difference between English and Italian, one needs to refer to the whole paradigm.

- Italian is **rich overall** and therefore it allows pro drop across the board.

- English is **poor overall**, and therefore it lacks pro drop across the board.

1. Introduction

In order to understand the difference between English and Italian, one needs to refer to the whole paradigm.

- Italian is **rich overall** and therefore it allows pro drop across the board.

- English is **poor overall**, and therefore it lacks pro drop across the board.

We will call this the **paradigmatic approach** to pro drop.

1. Introduction

The paradigmatic approach faces three problems:

Problem 1 (theoretical)

- Paradigms have no theoretical status in grammars in the sense and rules should not be able to refer to them (Bobaljik 2005).

- The grammar should not be allowed to inspect the entire paradigm during the building procedure before deciding whether to leave out the subject.

1. Introduction

Problem 2 (empirical)

- We know that partial pro drop languages exist.
  - Finnish and Hebrew only allow pro drop in 1st/2nd person contexts.
  - Frisian only allows pro drop in 2SG.
  - Bavarian dialects allow pro drop in 2SG and sometimes in 1PL/2PL
  - Ölvdalen Swedish only allows pro drop in 1PL/2PL contexts.

- These varieties suggest that subjects can be left out in particular contexts, contradicting the all-or-nothing effects predicted by the paradigmatic approach.

1. Introduction

Problem 3 (empirical)

- It turns out to be very hard to define paradigmatic richness. Icelandic, Standard German, Romanian and European Portuguese all have five distinctions in the present tense paradigm but only the latter two allow pro drop.

- This at least suggests that counting agreement forms is on the wrong track.

1. Introduction

As an alternative to the paradigmatic approach, one could pursue a **contextual approach**: Pro drop is possible if in a particular context (say, 2SG) the agreement form encodes enough features for reconstruction of the missing subject.

- We don't need to refer to the paradigm anymore.
- Partial pro drop varieties are not necessarily problematic: They can have "rich" contexts.
- A language like Italian just has many "rich" contexts, giving rise to across-the board pro drop.

1. Introduction

The problem for the contextual approach is that it massively overgenerates.

- Take English again: Why can't the *–s* in 3SG license a missing subject, whereas *–a* in Italian can?

- Why don't we see partial pro drop in non-pro drop languages that are (fairly) rich, such as Icelandic and Standard German?

1. Introduction

The paradigmatic approach **undergenerates**

- It does not expect partial pro drop.

The contextual approach **overgenerates**.

- It expects partial pro drop in e.g. Icelandic and Standard German.

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Conclusion:
There are in principle two approaches to expressing a link between “rich” inflection and pro drop, and both fail. This is how we define the Pro Drop Conundrum.

2. Our proposal

- We opt for a contextual approach: constraining an approach that overgenerates is easier than fixing one that undergenerates.

- We will show how we can still derive paradigmatic, all-or-nothing effects within a contextual approach.

- In a contextual approach pro drop is possible if in a particular context inflection on the verb is appropriately specified to license an empty subject, *pro*.

- There are four scenarios possible.

2. Our proposal

	Subject	*Morpheme X (on V)*	*Status*	*Pro drop?*
1	[speaker, plural]	[speaker, plural]	specification	yes
2	[speaker, plural]	[speaker]	underspecification	no
3	[speaker, plural]	[speaker, plural, past]	overspecification	no
4	[speaker, plural]	[speaker, past]	under- and over-specification	no

Hypothetical example

2. Our proposal

	Subject	*Morpheme X (on V)*	*Status*	*Pro drop?*
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4	[speaker, plural]	[speaker, past]	under- and over-specification	no

Only scenario 1 allows pro drop.

2. Our proposal

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2	[speaker, plural]	[speaker]	underspecification	no
3	**[speaker, plural]**	**[speaker, plural, past]**	**overspecification**	**no**
4	[speaker, plural]	[speaker, past]	under- and over-specification	no

The new ingredient is the ban on overspecification.

2. Our proposal

MORPHEME 1 (tense features) **MORPHEME 2** (agreement features)

Bi-morphemic analysis: the situation in “Romance”.

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MORPHEME 1 (tense + agreement features)

Mono-morphemic analysis: the “Germanic” situation.

2. Our proposal

MORPHEME 1

(tense features)

MORPHEME 2

(agreement features)

Can license pro drop

Bi-morphemic analysis: the situation in “Romance”.

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(tense + agreement features)

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Can license pro drop

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MORPHEME 1

(tense + agreement features)

Cannot license pro drop

Mono-morphemic analysis: the “Germanic” situation.

2. Our proposal

At first view, this looks totally wrong…

	Standard German		Icelandic	
	present	past	present	past
1SG	-e	**-te**	-i	**-ð-*i***
2SG	-st	**-te-*st***	-ir	**-ð-*ir***
3SG	-t	**-te**	-ir	**-ð-*i***
1PL	-en	**-te-*n***	-jum	**-ð-*um***
2PL	-t	**-te-*t***	-ið	**-ð-*uð***
3PL	-en	**-te-*n***	-a	**-ð-*u***

2. Our proposal

- In this talk, we show that at closer inspection the German/Icelandic paradigms call for a mono-morphemic analysis rather than a bi-morphemic one (contra e.g. Bobaljik & Thráinsson 1998).

- To this end, we will adopt four constraints that we take to limit the search space for L1-learners acquiring their native tongue.

- These four constraints are all amply justified, and common, in the relevant literature.

- Together, they get us where we want to be.

3. Analysis: pro drop languages

Constraints:

1. There are only privative features, such as [speaker], [addressee], [participant], [singular], [plural].

2. Without evidence to the contrary, 3rd person is analysed as the absence of a person (Benveniste 1971) and will therefore be associated with an elsewhere form.

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2. Without evidence to the contrary, 3rd person is analysed as the absence of a person (Benveniste 1971) and will therefore be associated with an elsewhere form.

ik	<>	[speaker]	
jij	<>	[addressee]	
hij	<>	[ ]	← **ELSEWHERE**

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3. Avoid null morphemes. They are only postulated if no alternative analysis is available.

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3. Avoid null morphemes. They are only postulated if no alternative analysis is available

4. Avoid homonyms. Always aim for a syncretic analysis when possible.

3. Analysis: pro drop languages

	Italian	
	present	past (imp.)
1SG	am-o	am-av-o
2SG	am-i	am-av-i
3SG	am-a	am-av-a
1PL	**am-iamo**	**am-av-amo**
2PL	am-ate	am-av-ate
3PL	am-ano	am-av-ano

- *-av-* can be identified as the past tense form.
- The agreement forms are stacked onto the past tense form in a transparent way
- 1PL *-iamo* in the present tense becomes *-amo* in the past tense.

3. Analysis: pro drop languages

	Italian	
	present	past (imp.)
1SG	am-o	am-av-o
2SG	am-i	am-av-i
3SG	am-a	am-av-a
1PL	**am-iamo**	**am-av-amo**
2PL	am-ate	am-av-ate
3PL	am-ano	am-av-ano

Agreement:

–o <> [uφ: speaker]
–i <> [uφ: addressee]
–a <> [uφ]
–iamo <> [uφ: speaker, plural]
–ate <> [uφ: addressee, plural]
–ano <> [uφ: plural]

Context-sensitive spell-out:

–amo <> [uφ: speaker, plur] / [T: past]

Tense:

–∅ <> [T:] (present)
–av– <> [T: past]

3. Analysis: pro drop languages

	Italian	
	present	past (imp.)
1SG	am-o	am-av-o
2SG	am-i	am-av-i
3SG	am-a	am-av-a
1PL	**am-iamo**	**am-av-amo**
2PL	am-ate	am-av-ate
3PL	am-ano	am-av-ano

Agreement:

–o <> [uφ: speaker]
–i <> [uφ: addressee]
–a <> [uφ] ← **ELSEWHERE**
–iamo <> [uφ: speaker, plural]
–ate <> [uφ: addressee, plural]
–ano <> [uφ: plural]

Context-sensitive spell-out:

–amo <> [uφ: speaker, plur] / [T: past]

Tense:

–∅ <> [T:] (present)
–av– <> [T: past]

3. Analysis: pro drop languages

	Italian	
	present	past (imp.)
1SG	am-o	am-av-o
2SG	am-i	am-av-i
3SG	am-a	am-av-a
1PL	**am-iamo**	**am-av-amo**
2PL	am-ate	am-av-ate
3PL	am-ano	am-av-ano

Conclusion:

- There is no reason to assume a mono-morphemic analysis of tense and agreement in Italian.
- We need a context-sensitive rule to get *–amo*.
- *–amo* cannot spell out [past] (*-av-* does that): *-amo* is spelled out in the context of [past].

3. Analysis: pro drop languages

	Spanish	
	present	past (imp.)
1SG	**am-o**	**am-ab-a**
2SG	am-as	am-ab-as
3SG	am-a	am-ab-a
1PL	am-amos	am-áb-amos
2PL	am-áis	am-ab-ais
3PL	am-an	am-ab-an

- *–ab–* can be identified as the past tense form.
- The agreement forms are stacked onto the past tense form in a transparent way.
- 1SG *–o* becomes *–a* in the imperfective, thereby becoming similar to the 3SG form.

3. Analysis: pro drop languages

	Spanish	
	present	past (imp.)
1SG	**am-o**	**am-ab-a**
2SG	am-as	am-ab-as
3SG	am-a	am-ab-a
1PL	am-amos	am-áb-amos
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How do we capture the *–o* > *–a* distinction?

3. Analysis: pro drop languages

	Spanish	
	present	past (imp.)
1SG	**am-o**	**am-ab-a**
2SG	am-as	am-ab-as
3SG	am-a	am-ab-a
1PL	am-amos	am-áb-amos
2PL	am-áis	am-ab-ais
3PL	am-an	am-ab-an

Option 1:

A context-sensitive spell-out rule..

–*a* <> [uφ: speaker] / [T: past]

..would not capture the 1SG/3SG correspondence, violating "Avoid homonyms", because you would need two –*a* forms.

3. Analysis: pro drop languages

	Spanish	
	present	past (imp.)
1SG	**am-o**	**am-ab-a**
2SG	am-as	am-ab-as
3SG	am-a	am-ab-a
1PL	am-amos	am-áb-amos
2PL	am-áis	am-ab-ais
3PL	am-an	am-ab-an

Option 2:

Impoverishment of [speaker] before insertion:

[uφ: speaker] > [uφ:] / [T: past]

As a consequence, the elsewhere form is inserted:

–a <> [uφ:]

3. Analysis: pro drop languages

	Spanish	
	present	past (imp.)
1SG	**am-o**	**am-ab-a**
2SG	am-as	am-ab-as
3SG	am-a	am-ab-a
1PL	am-amos	am-áb-amos
2PL	am-áis	am-ab-ais
3PL	am-an	am-ab-an

Agreement:

–o	<>	[uφ: speaker]
–as	<>	[uφ: addressee]
–a	<>	[uφ:]
–amos	<>	[uφ: speaker, plural]
–áis	<>	[uφ: addressee, plural]
–an	<>	[uφ: plural]

Impoverishment:

[uφ: speaker] > [uφ:] / [T: past]

Tense:

–∅	<>	[T:]
–ab–	<>	[T: past]

3. Analysis: pro drop languages

	Spanish	
	present	past (imp.)
1SG	**am-o**	**am-ab-a**
2SG	am-as	am-ab-as
3SG	am-a	am-ab-a
1PL	am-amos	am-áb-amos
2PL	am-áis	am-ab-ais
3PL	am-an	am-ab-an

Conclusion:

- There is no reason to assume a mono-morphemic analysis of tense and agreement in Spanish.
- We need an impoverishment rule to capture the *–o* > *–a* change in the imperfective.
- Since the impoverishment rule is part of the grammar, the impoverished feature is reconstructable: we expect no loss of pro drop in 1SG contexts.

4. Analysis: non-pro drop languages

So why do Standard German and Icelandic agreement forms then not count as bi-morphemic?

To preempt the crucial observation about Germanic varieties: The agreement form that appears in the 3SG present tense context never returns in the 3SG past tense context.

	Standard German		**Icelandic**	
	present	past	present	past
3SG	-t	-te/*-tet	-ir	-ð-i/*-ð-ir

4. Analysis: non-pro drop languages

To preempt the crucial observation about Germanic varieties: The agreement form that appears in the 3SG present tense context never returns in the 3SG past tense context.

	Standard German		**Icelandic**	
	present	past	present	past
3SG	-t	-te/*-tet	-ir	-ð-i/*-ð-ir

	Standard English	
	present	past
3SG	-s	-ed/*-eds

And the same is of course true for English.

4. Analysis: non-pro drop languages

	Icelandic	
	present	past (imp.)
1SG	-i	-ð-i
2SG	-ir	-ð-ir
3SG	**-ir**	**-ð-i**
1PL	-jum	-ð-um
2PL	-ið	-ð-uð
3PL	-a	-ð-u

- *–ð–* can be identified as a past tense form.
- 3SG *–ir* become *–i* in the past
- All plural forms look (slightly) distinct in the present and past tense.

4. Analysis: non-pro drop languages

	Icelandic	
	present	past (imp.)
1SG	-i	-ð-i
2SG	-ir	-ð-ir
3SG	**-ir**	**-ð-i**
1PL	-jum	-ð-um
2PL	-ið	-ð-uð
3PL	-a	-ð-u

How can we account for the 3SG *–ir* > *–i* distinction?

4. Analysis: non-pro drop languages

	Icelandic	
	present	past (imp.)
1SG	-i	-ð-i
2SG	-ir	-ð-ir
3SG	**-ir**	**-ð-i**
1PL	-jum	-ð-um
2PL	-ið	-ð-uð
3PL	-a	-ð-u

Option 1:

A context-sensitive spell-out rule…

$-i \quad <> \quad [u\varphi: \,] \,/\, [T: \text{past}]$

…does not get the job done because it would require two different *–ir* forms in the present tense; otherwise 2SG in the past would become *–i* as well:

$-ir_1 <> \quad [u\varphi: \text{addressee}]$
$-ir_2 <> \quad [u\varphi: \,]$

Only the first one then reappears in the past tense. And you need two *–i*-s. Conclusion: the analysis violates "Avoid homonyms" twice.

4. Analysis: non-pro drop languages

	Icelandic	
	present	past (imp.)
1SG	-i	-ð-i
2SG	-ir	-ð-ir
3SG	**-ir**	**-ð-i**
1PL	-jum	-ð-um
2PL	-ið	-ð-uð
3PL	-a	-ð-u

Option 2:

An impoverishment rule cannot be straightforwardly formulated either. The 3SG context is featureless, so there is nothing you can impoverish.

One could resort to a rule like…

[uφ: -participant] → [uφ:] / [T: past]

..but this rule uses a (non-privative!) feature not motivated by the uφ spell-out rules and absent in the subject paradigm.

4. Analysis: non-pro drop languages

	Icelandic	
	present	past (imp.)
1SG	-i	-ð-i
2SG	-ir	-ð-ir
3SG	**-ir**	**-ð-i**
1PL	-jum	-ð-um
2PL	-ið	-ð-uð
3PL	-a	-ð-u

Option 2:

One could instead assume that *–i* is the elsewhere form:

–ir <> [uφ: non-speaker]
–i <> [uφ:]

..and then assume impoverishment:

[uφ: non-speaker] → [uφ:] /
[uφ: non-addressee], [T: past]

But if the morpheme targeted by impoverishment is already defined as [uφ: non-addressee], the feature needed for defining the context, [uφ: non-speaker], cannot be generated, given complementary distribution.

4. Analysis: non-pro drop languages

	Icelandic	
	present	past (imp.)
1SG	-i	-ði
2SG	-ir	-ðir
3SG	**-ir**	**-ði**
1PL	-jum	-ðum
2PL	-ið	-ðuð
3PL	-a	-ðu

Option 3:

Assume that 2SG/3SG *–ir* not only competes for insertion with present tense agreement form *–i*, but also with past tense form *–ði*. In other words, *–ir* is blocked in the past tense because *–ði* is inserted instead.

But if *–ir* competes with *–ði*, then these forms must be able to target the same morpheme.

Since these forms are associated with both tense and agreement features, this morpheme must be too.

4. Analysis: non-pro drop languages

	Icelandic	
	present	past (imp.)
1SG	-i	-ði
2SG	-ir	-ðir
3SG	**-ir**	**-ði**
1PL	-jum	-ðum
2PL	-ið	-ðuð
3PL	-a	-ðu

Inflection:

–i	<>	[T:], [uφ: speaker]
–ir	<>	[T:], [uφ:]
–jum	<>	[T:], [uφ: speaker, plural]
–ið	<>	[T:], [uφ: addressee, plural]
–a	<>	[T:], [uφ: plural]
–ði	<>	[T: past], [uφ:]
–ðir	<>	[T: past], [uφ: addressee]
–ðum	<>	[T: past], [uφ: speaker, plural]
–ðuð	<>	[T: past], [uφ: addressee, plural]
–ðu	<>	[T: past], [uφ: plural]

4. Analysis: non-pro drop languages

Mono-morphemic analysis:

Inflection:

–i	<>	[T:], [uφ: speaker]
–ir	<>	[T:], [uφ:]
–jum	<>	[T:], [uφ: speaker, plural]
–ið	<>	[T:], [uφ: addressee, plural]
–a	<>	[T:], [uφ: plural]
–ði	<>	[T: past], [uφ:]
–ðir	<>	[T: past], [uφ: addressee]
–ðum	<>	[T: past], [uφ: speaker, plural]
–ðuð	<>	[T: past], [uφ: addressee, plural]
–ðu	<>	[T: past], [uφ: plural]

Bi-morphemic analysis:

Agreement:

–i	<>	[uφ: speaker]
–ir	<>	[uφ: addressee]
–ir	<>	[uφ:]
–jum	<>	[uφ: speaker, plural]
–ið	<>	[uφ: addressee, plural]
–a	<>	[uφ: plural]

Context-sensitive spell-out rules:

–i	<>	[uφ:] / [T: past]
–um	<>	[uφ: speaker, plural] / [T: past]
–uð	<>	[uφ: addressee, plural / [T: past]
–u	<>	[uφ; plural] / [T: past]

Tense

–∅	<>	[T:] (present)
–ð	<>	[T: past]

4. Analysis: non-pro drop languages

Mono-morphemic analysis:

Inflection:

–i	<>	[T:], [uφ: speaker]
–ir	<>	[T:], [uφ:]
–jum	<>	[T:], [uφ: speaker, plural]
–ið	<>	[T:], [uφ: addressee, plural]
–a	<>	[T:], [uφ: plural]
–ði	<>	[T: past], [uφ:]
–ðir	<>	[T: past], [uφ: addressee]
–ðum	<>	[T: past], [uφ: speaker, plural]
–ðuð	<>	[T: past], [uφ: addressee, plural]
–ðu	<>	[T: past], [uφ: plural]

Advantages of the mono-morphemic analysis:

- **Fewer rules**
- **No violation of "Avoid homonyms".**
- **No violation of "Avoid null morphemes"**
- **No six agreement rules with 4 exceptions**

Bi-morphemic analysis:

Agreement:

–i	<>	[uφ: speaker]
–ir	<>	[uφ: addressee]
–ir	<>	[uφ:]
–jum	<>	[uφ: speaker, plural]
–ið	<>	[uφ: addressee, plural]
–a	<>	[uφ: plural]

Context-sensitive spell-out rules:

–i	<>	[uφ:] / [T: past]
–um	<>	[uφ: speaker, plural] / [T: past]
–uð	<>	[uφ: addressee, plural / [T: past]
–u	<>	[uφ; plural] / [T: past]

Tense

–∅	<>	[T:] (present)
–ð	<>	[T: past]

4. Analysis: non-pro drop languages

	Icelandic	
	present	past
1SG	-i	**-ði**
2SG	-ir	**-ðir**
3SG	**-ir**	**-ði**
1PL	-jum	**-ðum**
2PL	-ið	**-ðuð**
3PL	-a	**-ðu**

Conclusion:

- In Icelandic, forms associated with agreement features and forms associated with tense features compete with one another.
- This means there must be an underlying morpheme that encodes both tense and agreement features.
- This morpheme is overspecified for the purposes of licensing an empty subject. Therefore, Icelandic lacks pro drop, despite its rather rich inflection.

4. Analysis: non-pro drop languages

	Standard German	
	present	past
1SG	-e	-te
2SG	-st	-te-st
3SG	**-t**	**-te**
1PL	-en	-te-n
2PL	-t	-te-t
3PL	-en	-te-n

- *–te* can be identified as a past tense marker.
- Most present tense agreement markers reappear in the past tense.
- The 3SG *–t*, however, is the ominous exception.

4. Analysis: non-pro drop languages

	Standard German	
	present	past
1SG	-e	-te
2SG	-st	-te-st
3SG	**-t**	**-te**
1PL	-en	-te-n
2PL	-t	-te-t
3PL	-en	-te-n

How can we account for the 3SG *–t* > *–∅* distinction?

4. Analysis: non-pro drop languages

	Standard German	
	present	past
1SG	-e	-te
2SG	-st	-te-st
3SG	**-t**	**-te**
1PL	-en	-te-n
2PL	-t	-te-t
3PL	-en	-te-n

Option 1:

A context-sensitive spell-out rule…

$$-\varnothing \quad <> \quad [u\varphi: \,] \,/\, [T: \text{past}]$$

…gets the job done but:

- At the cost of violating "Avoid homonyms": Although 1SG and 3SG look similar in the past, they then receive different analyses.
- At the cost of violating "Avoid null morphemes".

4. Analysis: non-pro drop languages

	Standard German	
	present	past
1SG	-e	-te
2SG	-st	-te-st
3SG	**-t**	**-te**
1PL	-en	-te-n
2PL	-t	-te-t
3PL	-en	-te-n

Option 2:

An impoverishment rule cannot be straightforwardly formulated either. The 3SG context is featureless, so there is nothing you can impoverish.

One could again resort to a rule like…

[uφ: -participant] → [uφ:] / [T: past]

..but this rule uses a (non-privative!) feature not motivated by the uφ spell-out rules and absent in the subject paradigm.

4. Analysis: non-pro drop languages

	Standard German	
	present	past
1SG	-e	-te
2SG	-st	-test
3SG	**-t**	**-te**
1PL	-en	-ten
2PL	-t	-tet
3PL	-en	-ten

Option 3:

Assume that 2SG/3SG *–t* not only competes for insertion with present tense agreement forms *–e* and *–st* but also with past tense form *–te*. In other words, *–t* is blocked in the past tense because *–te* is inserted instead.

But if *–t* competes with *–st*, and *–te*, then also *–st* and *–te* must compete. If so, *–test* cannot consist of *–te* and *–st*, because these forms are in competition. Therefore, *–test* must be one form, spelling out both tense and agreement feature.

4. Analysis: non-pro drop languages

	Standard German	
	present	past
1SG	-e	-te
2SG	-st	-test
3SG	**-t**	**-te**
1PL	-en	-ten
2PL	-t	-tet
3PL	-en	-ten

Inflection:

–e <> [T:], [uφ: speaker]

–st <> [T:], [uφ: addressee]

–t <> [T:], [uφ:]

–en <> [T:], [uφ: plural]

–t <> [T:], [uφ: addressee, plural]

–te <> [T: past], [uφ:]

–test <> [T: past], [uφ: addressee]

–ten <> [T: past], [uφ: plural]

–tet <> [T: past], [uφ; addressee, plural]

4. Analysis: non-pro drop languages

	Standard German	
	present	past
1SG	-e	-te
2SG	-st	-test
3SG	**-t**	**-te**
1PL	-en	-ten
2PL	-t	-tet
3PL	-en	-ten

Conclusion:

- In Standard German, forms associated with agreement features and forms associated with tense features compete with one another.
- This means there must be an underlying morpheme that encodes both tense and agreement features.
- This morpheme is overspecified for the purposes of licensing an empty subject. Therefore, Standard German lacks pro drop, despite its rather rich inflection.

4. Analysis: non-pro drop languages

	English	
	present	past
1SG	-∅	-ed
2SG	-∅	-ed
3SG	**-s**	**-ed**
1PL	-∅	-ed
2PL	-∅	-ed
3PL	-∅	-ed

- The only overt agreement form, *–s*, disappears in the past.
- For the same reasons established earlier, contextual spell-out rules and impoverishment create issues.
- The solution is to let *–s* directly compete with *–ed*, which leads to a mono-morphemic analysis of tense and agreement in English.
- That analysis blocks pro drop, even in 3SG contexts.

4. Analysis: non-pro drop languages

	English	
	present	past
1SG	-⊘	-ed
2SG	-⊘	-ed
3SG	**-s**	**-ed**
1PL	-⊘	-ed
2PL	-⊘	-ed
3PL	-⊘	-ed

Inflection

–⊘ <> [T: present], [uφ: participant]

–⊘ <> [T: present], [uφ: plural]

–s <> [T: present], [uφ:]

–ed <> [T: past], [uφ:]

4. Analysis: non-pro drop languages

	English	
	present	past
1SG	-⊘	-ed
2SG	-⊘	-ed
3SG	**-s**	**-ed**
1PL	-⊘	-ed
2PL	-⊘	-ed
3PL	-⊘	-ed

Inflection

–⊘ <> [T: present], [uφ: participant]

–⊘ <> [T: present], [uφ: plural]

–*s* <> [T: present], [uφ:]

–*ed* <> [T: past], [uφ:]

Note that by assuming –*s* as the elsewhere form, one is forced to assume two null forms.

Would it be more parsimonious to assume that –⊘ is the elsewhere?

4. Analysis: non-pro drop languages

This is the transparent analysis with that assumption.

Agreement

–⊘ <> [uφ:]

–s <> [uφ: -participant; sing.]

Impoverishment

[uφ: -participant, singular] → [uφ:]/__[past]

Tense

–⊘ <> [T:]

–ed <> [T: past]

4. Analysis: non-pro drop languages

This is the transparent analysis with that assumption.

Agreement

–⊘ <> [uφ:]

–*s* <> [uφ: -participant; sing.]

Impoverishment

[uφ: -participant, singular] → [uφ:]/__[past]

Tense

–⊘ <> [T:]

–*ed* <> [T: past]

You still need two null forms.

You need a non-privative feature.

And you need more rules.

Conclusion:
Not more parsimonious.

4. Analysis: non-pro drop languages

This is the non-transparent analysis with that assumption.

Inflection

–⊘ <> [T:], [uφ:]

–s <> [T:], [uφ: -participant; singular]

–ed <> [T: past], [uφ:]

4. Analysis: non-pro drop languages

This is the non-transparent analysis with that assumption.

Inflection

–⊘ <> [T:], [uφ:]
–s <> [T:], [uφ: -participant; singular]
–ed <> [T: past], [uφ:]

You need a non-privative feature.

You still predict no pro drop.

Conclusion:
It does not change the prediction for English.

4. Analysis: non-pro drop languages

	Dutch		Faroese	
	present	past	present	past
1SG	dank-∅	dank-te	døm-i	døm-di
2SG	dank-t	dank-te	døm-ir	døm-di
3SG	**dank-t**	**dank-te /*-te-t**	**døm-ir**	**døm-di/*-di-(i)r**
1PL	dank-en	dank-ten	døm-a	døm-du
2PL	dank-en	dank-ten	døm-a	døm-du
3PL	dank-en	dank-ten	døm-a	døm-du

4. Analysis: non-pro drop languages

Dutch Inflection

-⊘ <> [T: present], [uφ: speaker, singular]

-t <> [T:], [uφ:]

-en <> [T:], [uφ: plural]

-te <> [T: past], [uφ:]

-ten <> [T: past], [uφ: plural]

Faroese Inflection

-i <> [T: present], [uφ: speaker, singular]

-ir <> [T:]. [uφ:]

-a <> [T:], [uφ: plural]

-di <> [T: past], [uφ:]

-du <> [T: past], [uφ: plural]

5. Partial pro drop

2SG contexts are the most popular partial pro drop environments:

1 a. Kumm-st (du) noch Minga, dann muas-st *pro* me bsuacha
Come.2SG (you) to Munich, then must.2SG me visit
'If you come to Munich, you must visit me'.

b. Ob-st (du) noch Minga kumm-st, …
if.2SG (you) to Munich come.2SG
'If you come to Munich, ...' (Bavarian, Bayer 1984)

2 a. Miskien moatst (do) my helpe
Perhaps must.2SG (you) me help
'Perhaps you should help me.'

b. Ik denk datst (do) my helpe moatst
I think that.2SG me help must
'I think that you should help me.' (Frisian, De Haan 1984)

5. Partial pro drop

But in some Bavarian varieties pro drop also takes place in 1PL and 2PL:

3 a. Fahr-ma (mir) noch Minga?
drive.1PL (we) to Munich
'Do we drive to Munich?'

b. Ob-ts (es/ihr) noch Minga kumm-ts,…
whether.2PL (you.PL) to Munich come.2PL
'Whether you come to Munich, …'

(Bavarian, Bayer 1984)

5. Partial pro drop

The problem:
Frisian and Bavarian German also have a 3SG present tense form that disappears in the past tense. They should run into the overspecification trap and block pro drop.

The potential solution:
In a contextual approach to pro drop it is in principle possible to have a paradigm where some agreement forms receive a mono-morphemic analysis and other contexts a bi-morphemic one.

The question:
Given Input Generalization (Roberts 2007), what makes a learner deviate from a uniform analysis of the whole paradigm?

5. Partial pro drop

Here are some central observations:

- What is exceptionlessly the case in Bavarian dialects (Rosenkvist 2009:163) is that pro drop is only found in contexts with complementiser agreement, suggesting a correlation (Fuss 2005; Weiss 2005).

- If so, it explains why Frisian has partial pro drop: it has pro drop in 2SG and only in that context does it have complementiser agreement.

- If so, it explains why e.g. Standard German does not have partial pro drop: it does not have complementiser agreement.

5. Partial pro drop

This raises the following questions:

- Why would complementiser agreement matter? After all, the form and features they express are the same as what appears on the verb (at least in 2SG in Frisian and Bavarian). Why does having the agreement form once not allow pro drop (given Standard German) whereas having it twice triggers pro drop?
- Why does the availability of complementiser agreement in the grammar license pro drop in main clauses, where the complementiser is not even present?

5. Partial pro drop

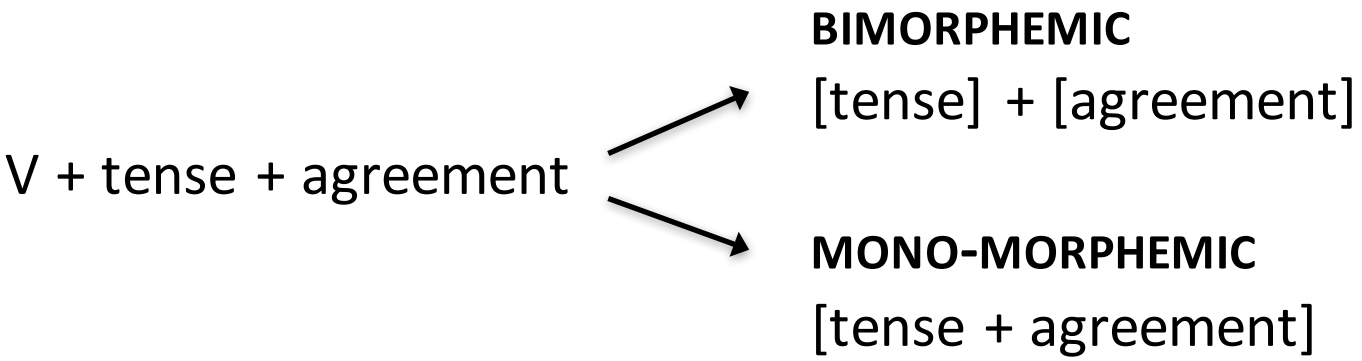
This raises the following questions:

- Why would complementiser agreement matter? After all, the form and features they express are the same as what appears on the verb (at least in 2SG in Frisian and Bavarian). Why does having the agreement form once not allow pro drop (given Standard German) whereas having it twice triggers pro drop?
- Why does the availability of complementiser agreement in the grammar license pro drop in main clauses, where the complementiser is not even present?

Answer: Complementiser agreement provides evidence for a bimorphemic analysis of T and Agr for the context that it appears in.

5. Partial pro drop

In Germanic, verbs can express tense and agreement:



5. Partial pro drop

In Germanic, verbs can express tense and agreement:

V + tense + agreement →

BIMORPHEMIC
[tense] + [agreement]

MONO-MORPHEMIC
[tense + agreement]

But complementisers only express agreement, not tense:

Comp + agreement → **MONO-MORPHEMIC**
[agreement]

5. Partial pro drop

- Complementiser agreement shows for a particular context an agreement morpheme in the absence of tense features.
- The conclusion will be that agreement is expressed by a dedicated morpheme.
- If the same agreement shows up on the verb in the presence of tense information, tense must be a separate morpheme, leading to a bi-morphemic analysis of tense and agreement.
- The language then licenses pro drop in that context, provided that agreement is not underspecified.

6. Conclusion and discussion

Pro drop languages
Tense and agreement are bi-morphemically expressed: [Tns] + [Agr].

Non-pro drop languages
Tense and agreement are mono-morphemically expressed: [Tns + Agr].

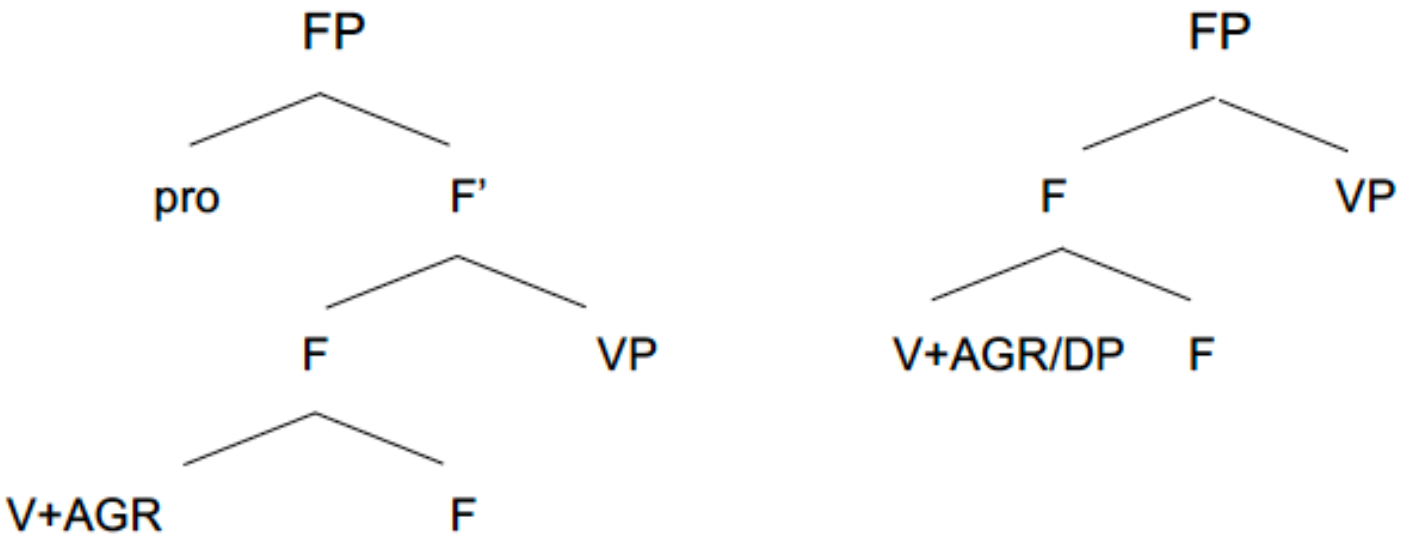
Partial pro drop languages
Tense and agreement are bi- or mono-morphemically expressed, depending on the context: 2SG: [Tns] + [Agr], other contexts: [Tns + Agr]

6. Conclusion and discussion

- Naturally, the question arises why in null subject languages, agreement markers may neither be either underspecified nor overspecified with respect to the (φ-)features of their corresponding pronominal subjects. Why must the featural make-up of the pronominal subject and the agreement marker be identical?

- There are essentially two approaches to this, both defended in the literature: either the agreement stands in some kind of feature-sharing relation with an unpronounced pronominal subject, dubbed *pro*, or, even stronger, the agreement marker *is* the subject pronoun.

6. Conclusion and discussion



6. Conclusion and discussion

- Our generalization is fully compatible with either proposal.

- Under the view that pro-drop involves the presence of a covert subject *pro*, a correlation between the richness of agreement and pro-drop naturally follows. As there is only one pro, lexically it must be featurally underspecified.

- At the same time, *pro* must end up carrying the relevant φ-features, as otherwise it could not be interpreted as a real pronoun at LF. It is therefore assumed that the agreement markers themselves may value *pro*.

6. Conclusion and discussion

Canto
Sing.1SG
'I sing'

Italian

Before valuation: $[_{FP}\ [_{DP}\ [i\varphi:\ \_\_\_\_]\ \ldots\ [_{AGR}u\varphi{:}1SG]\ ]$
After valuation: $[_{FP}\ [_{DP}\ [i\varphi{:}\underline{1SG}\ ]\ \ldots\ [_{AGR}u\varphi{:}1SG]\ ]$

- Note that nothing forbids that only interpretable features value unvalued features. Lexically valued features can also value unvalued features (cf. Pesetsky & Torrego 2007, Arregui & Nevins 2012, Bjorkman & Zeijlstra 2019).

6. Conclusion and discussion

- If *pro* inherits its features from the agreement markers, the agreement markers must be featurally as rich as as the corresponding overt subjects. This explains why underspecification renders pro drop impossible.
- But if *pro* inherits its features from the agreement markers, the agreement markers must consist of only those features that are also present in the corresponding overt subjects. Additional features (such as tense features), would render *pro* uninterpretable at the level of LF. This explains why overspecification renders pro drop impossible.
- Hence, our generalization fits perfectly well with the pro view on pro drop.

6. Conclusion and discussion

- However, even though our approach can be fully explained in terms of *pro* being a subject DP that is valued by agreement markers, it is not the case that our approach can only be cast in these terms.

- It also fully matches with the alternative approach, where rich agreement markers are taken to be actual pronouns (cf. Borer 1986; Alexiadou & Anagnostopoulou 1995).

6. Conclusion and discussion

- If the features of the agreement marker are φ-identical with those of the subject, the null hypothesis should even be that the two are identical. Moreover, the fact that overt subjects never show any kind of tense or aspect morphology (there are no languages in the world in which the morpho-phonological form of a subject depends on the tense or aspect of the clause it is a subject of), actually predicts that agreement markers should not be overspecified either.

- The view that agreement markers are weak pronouns comes with its own problems, however, which is why we don‘t fully endorse it. For one, it does not explain why rich agreement markers still allow a fair amount of syncretisms, whereas ‘real‘ pronouns do not.

6. Conclusion and discussion

- However, irrespective of the ultimate choice between the two approaches, the generalization we make should actually be predicted by both of them.

- At the same time, we're not there yet …

6. Conclusion and discussion

Further issues

- Broaden the empirical coverage:
  - Flemish, non-Indo-European languages
  - We have an analysis for Finnish, not for Hebrew.

- Diachronic developments: Old Norse and Old High German had full pro drop but lost it. How to tie the knots together?
  - Their paradigms were slightly richer.
  - Pro drop was more syntactically constrained.

6. Conclusion and discussion

Further issues

- Recalcitrant Germanic dialects I: Ölvdalen Swedish and Swabian German allow partial pro drop in the absence of complementiser agreement.
    - Is there another cue for a bi-morphemic analysis of agreement in some contexts?
    - Pro drop is syntactically (and phonologically) restricted.
- Recalcitrant Germanic dialects II: Complementiser agreement but no pro drop: Limburgian

Thanks