

One law for the rich and another for the poor

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1 Introduction: the Rich Agreement Hypothesis

GOAL:

To resurrect the hypothesis that overt V-to-I movement and rich inflection are correlated (Kosmeijer 1986, Platzack & Holmberg (1989), Rohrbacher 1994, Bobaljik & Thrainsson 1998). However, instead of arguing that V-to-I movement is driven by morphological richness, it is argued that V-to-I movement is a consequence of the grammaticalization (i.e. the formal encoding) of argumenthood.

Two formulations of the Rich Agreement Hypothesis (henceforth: RAH):

- Strong (bi-directional): Rich inflection \leftrightarrow V-to-I movement
- Weak (one-directional): Rich inflection \rightarrow V-to-I movement

What counts as rich? (See Rohrbacher 1994, Bobaljik 1995, Koeneman 1997, Vikner 1997 for different approaches). We propose the following novel definition for rich verbal agreement.

(1) *Rich agreement*

Agreement in a language counts as rich iff the distinct agreement morphemes motivate postulation of those features that minimally constitute (subject) pronouns universally.

Greenberg's universal 42 (1963: 96): *all languages have pronominal categories involving at least three persons and two numbers.*

The languages with the smallest pronominal subject inventory possible are languages that have at least the following paradigm (although Everett (2005) claims that Piraha exhibits an even smaller pronominal inventory, but see Nevins et al for an argument against this analysis):

(2) Kuman (cf. Cysouw 2003)

<i>na</i>	<i>no</i>
<i>ene</i>	
<i>ye</i>	

- Na → [+speaker][-plural]
 Ene → [-speaker][+participant]
 Ye → [-speaker][-participant]
 No → [+speaker][+plural]

Therefore every language requires at least three pronominal features to constitute subject pronouns. If languages exhibit agreement with at least these three features, agreement in such languages counts as rich.

(3) a. **sg PL**

1 st	A	
2 nd	B	
3 rd	B	

↓

A = [+speaker]
B = [-speaker]

b. **SG PL**

1 st	A	
2 nd	A	
3 rd	B	

↓

A = [+participant]
B = [-participant]

c. **SG PL**

1 st		
2 nd	B	A
3 rd		

↓

A = [+plural]
B = [-plural]

Under this definition, English subject-verb agreement counts as poor, whereas Icelandic subject-verb agreement is rich. English verbal agreement is captured by [±participant] and [±plural] only, whereas Icelandic verbal agreement exhibits all three features [±speaker], [±participant], [±plural].¹

We relate the notion of richness to that of pronominal subjecthood. Only if all minimally required pronominal features are reflected in the verbal inflectional morphology does this paradigm count as rich. As we will show, this derives the distribution of V-to-I movement.

(4) a.	Icelandic	b.	English
	inf. seg-ja		inf. loyf-n
	SG PL		SG PL
	1st seg-i seg-jum		1st walk-∅ walk-∅
	2nd seg-ir seg-ið		2nd walk-∅ walk-∅
	3rd seg-ir seg-ja		3rd walk-s walk-∅

¹ Note that at this stage we do not make any specific claim whether the proper set of features constituting a rich paradigm is [±speaker], [±participant], [±plural] or any other set of features that may constitute an equally rich paradigm (e.g. [±speaker], [±addressee], [±plural]).

Icelandic:

- i → [+speaker][-plural]
- ir → [-speaker][-plural]
- jum → [+speaker][+plural]
- ið → [-speaker][+participant][+plural]
- já → [-participant][+plural]

English

- s → [-participant][-plural]
- ∅ → Elsewhere

Empirical evidence for either version of the RAH comes from three areas:

- (i) Synchronic macrovariation (section 1.1)
- (ii) Synchronic microvariation (section 1.2)
- (iii) Diachronic microvariation (section 1.3)

1.1 Synchronic macrovariation

- Icelandic and Yiddish: rich → V-movement across 'often/neg'
- Norwegian and Danish: poor → No V-movement across 'often/neg'

(5)	a.	Icelandic		b.	Yiddish	
		inf. seg-ja			inf. loyf-n	
		SG	PL		SG	PL
	1 st	seg-i	seg-jum	1 st	loyf-∅	loyf-n
	2 nd	seg-ir	seg-ið	2 nd	loyf-st	loyf-t
	3 rd	seg-ir	seg-ja	3 rd	loyf-t I	oyf-n

- (6) a. Ég veit ekki af hverju kýrin HEFUR **oft** staðið í herberginu *Icelandic*
I know not why the.cow has often stood in the room
- b. Ikh veys nit ven di ku IZ **oyfn** geshtanen in tsimer *Yiddish*
I know not when the cow is often stood in the room

(7)	a.	Danish		b.	Norwegian	
		inf. kast-e			inf. elsk-a	
		SG	PL		SG	PL
	1 st	kast-er	kast-er	1 st	elsk-er	elsk-er
	2 nd	kast-er	kast-er	2 nd	elsk-er	elsk-er
	3 rd	kast-er	kast-er	3 rd	elsk-er	elsk-er

- (8) a. at Peter **ofte** HAVDE læst den *Danish*
that Peter often had read it
- b. Vi tenkte ikke at han **aldri** VILLE ha penger *Norwegian*
we thought not that he never would have money

1.2 Synchronic microvariation

- Standard Swedish: poor → No V-movement across ‘often/neg’
 Ålvdalen Swedish: rich → V-movement across ‘often/neg’

(9)	a.	Standard Swedish		b.	Ålvdalen Swedish	
		inf. bit-a			inf. kast-a	
		SG	PL		SG	PL
	1 st	bit-er	bit-er	1 st	kast-ar	kast-um
	2 nd	bit-er	bit-er	2 nd	kast-ar	kast-ir
	3 rd	bit-er	bit-er	3 rd	kast-ar	kast-a

- | | | | |
|------|----|---|-------------------------|
| (10) | a. | att Johan inte KÖPTE boken | <i>Standard Swedish</i> |
| | | that Johan not bought book-the | |
| | b. | ...ba fo dye at uir UILDUM int fy om | <i>Ålvdalen Swedish</i> |
| | | just because that we would not follow him | |

Hallingdalen Norwegian: poor → No V-movement across ‘often/neg’

(11)	a.	Ålvdalen Swedish		b.	Hallingdalen Norwegian	
		inf. kast-a			inf. kast-æ	
		SG	PL		SG	PL
	1 st	kast-ar	kast-um	1 st	kast-a	kast-æ
	2 nd	kast-ar	kast-er	2 nd	kast-a	kast-æ
	3 rd	kast-ar	kast-a	3 rd	kast-a	kast-æ

- | | | |
|------|--|---------------------|
| (12) | Noko gamlæ mænna som ikki HADDÆ vore mæ ve kyrkja | <i>Hallingdalen</i> |
| | some old men who not had been along at church | |

1.3 Diachronic microvariation

Old Swedish, Middle English: rich → V-movement across ‘often/neg’.

Early Mod. Swedish, Early Mod. English: poor → No V-movement across ‘often/neg’

(13)	a.	Old Swedish		b.	Middle English	
		inf. älsk-a			inf. sing-en	
		SG	PL		SG	PL
	1 st	älsk-ar	älsk-um	1 st	sing-e	sing-en
	2 nd	älsk-ar	älsk-in	2 nd	sing-est	sing-en
	3 rd	älsk-ar	älsk-a	3 rd	sing-eð	sing-en

- | | | |
|------|---|--------------------------|
| (14) | æn han SIVNGÆR ægh thigianda messu | <i>Old Swedish, 1290</i> |
| | if he sings not silent mass | |

- | | | |
|------|--|-----------------------|
| (15) | By thy thanks I SET not a straw | <i>Middle English</i> |
|------|--|-----------------------|

2 Old problems for the RAH

Spoken French and Faroese. Both poor, both allow V_{finite} – NEG orders.

(16)	a.	Spoken French (phonological)		b.	Faroese I & II	
		inf. parl-[e]			inf. kast-a	
		SG	PL		SG	PL
	1 st	parl-ə	parl-ə *	1 st	kast-i	kast-a
	2 nd	parl-ə	parl-[e]	2 nd	kast-ir	kast-a
	3 rd	parl-ə	parl-ə	3 rd	kast-ir	kast-a

*1st PL in spoken French is not (*nous*) *parl-[õ]* but (*on*) *parl-ə*, making French observationally as poor as Modern English.

(17)	Jean MANGE souvent des pommes.	<i>French</i>
	Jean eats often apples	

Faroese I and II have the same paradigm but a different verbal syntax (Jonas 1995). Faroese I has optional verb movement (cf. 18a), which Faroese II lacks (cf. 18b):

(18)	a.	Tap var ovæntað at dreingirnir <VORU> als ikki <VORU> ósamdir
		it was unexpected that boys-the were at-all not disagreed
	b.	Tap var ovæntað at dreingirnir <*VORU> als ikki <VORU> ósamdir
		it was unexpected that boys-the at-all not were disagreed

SOLUTION FOR FRENCH:

Its pervasive subject doubling property indicates that subject clitics function as agreement markers, rendering the language's inventory of the formal pronominal features rich (see Auger 1994, Legendre *et al* 2004 and others).

(19)	a.	(Moi) je viens
		I I come
		'I'm coming'
	b.	(Toi) tu viens
		you you come
		'You're coming'
	c.	Hier, Jean (/) il est parti
		Yesterday, John he is left
		'Yesterday, John/he left'

These data show that French subject clitics undergo doubling, indicating, that French subject clitics stand in some agreement relation with a higher subject, which may be left abstract (see Brandi & Cordin 1989 for similar observations about Northern Italian dialects).

- (20) a. [Moi_[i1SG] je_[u1SG] viens]
 b. [pro_[i1SG] je_[u1SG] viens]

Evidence from corpus studies for an agreement status:

- 1st and 2nd clitics are hardly ever left out in doubling constructions, although it is possible in Standard (written) French to do so. Morphologization is not complete for 3rd person clitics.
- Clitics are repeated in sentences with coordinated predicates (21a) and after false starts (21b).
- Doubling is a pervasive property in child French (Puskas, Aafke Hulk, p.c.).

- (21) a. Et après elle-la-prend et elle-la-grille
 And afterwards she-it-takes and she-it-grills
 b. Et pis jch-j-mais jch-crois que ya une tendance
 And then I-th-I-but I-think there's a tendency

Evidence for the morphologization of subject clitics:

- Examples of clitic-verb inversion are “vanishingly rare”. See Culbertson (2010) for a summary of several corpus studies.

Conclusion:

French *does* have rich agreement (albeit in a different syntactic domain), as expected under the RAH.

SOLUTION FOR FAROESE:

Heycock et al (2010): Faroese actually does not display V-to-I movement but rather V-to-C movement.

- Icelandic, Faroese and Mainland Scandinavian pattern alike in allowing embedded V2.
 - under bridge verbs like *say* or *think*
 - under non-bridge verbs like *regret* and *admit*
- Icelandic and Faroese contrast with Mainland Scandinavian in allowing embedded V2 under non-bridge verbs like *doubt*, *deny* and *be proud*.

Analysis:

- Icelandic and Faroese have fewer restrictions on embedded V2. Verb movement in embedded clauses can therefore easily be mistaken for V to I movement.
- In contexts where embedded V2 is not allowed (i.e., in indirect questions) the order V-neg is as much degraded for Faroese speakers as it is for Danish speakers. When no embedded V2 can take place, no verb movement occurs at all.

Conclusion:

Faroese does not display V-to-I movement, as expected under the RAH.

3 Recent problems for the RAH

A: REGIONAL NORTHERN NORWEGIAN (ReNN)

(22) ...ettersom nån studenta {**sannsynligvis**} LEVERTE {**sannsynligvis**}
... as some students probably handed.in probably
oppgaven
assignment.the
'... as some students probably handed in the assignment'

(23) ... ettersom nån studenta {**ikke**} LEVERTE {***ikke**} oppgaven
... as some students not handed.in not assignment.the
'... as some students {not handed in / didn't hand in} the assignment'

Analysis by Bentzen et al (2007):

- ReNN has the following syntactic template (at least for ReNN), where they assume that negation is externally merged above AgrP:

(24) NegP > AgrP > High adverbs > TP > Low adverbs

- Finite verbs move to T, hence exhibit optional V-to-I movement.
- Finite verbs do not move further than T (at least in embedded clauses); therefore they do not appear to the left of *ikke*, which is positioned higher.

Problem for Bentzen et al:

Negation in ReNN (like in Standard Norwegian) can follow lower adverbs (Kristine Bentzen, p.c.):

(25) Jeg vet hvorfor John ofte ikke vet svaret
I know why John often not know answer-the

The idea that negation is obligatorily base-generated higher than TP-adjointing adverbs is strongly at odds with the basic characteristics of negation in Germanic where sentential negation may always take scope from a position at least as high as vP (i.e. in a vP adjunct position). Presence of the negative marker in a lower position never yields sentential negation (cf. Acquaviva 1997, Zeijlstra 2004, Penka 2010).

Conclusion: the relative position of a finite verb w.r.t the negative marker is a better diagnostic for V-raising out of vP than its position with low adverbs such as 'often'.

BTW: Note that an alternative analysis where the ban on verbal movement across the negative marker follows as a result of the Head Movement Constraint (Travis 1984) this cannot be correct either as finite verbs in ReNN may precede *ikke* in matrix clauses (i.e. they freely undergo verb second).

- (26) a. [{NEG} [_{VP} {NEG} [_{VP} {*NEG}]]]
 b. [{ADV} [_{VP} {ADV} [_{VP} {ADV}]]]

- (27) a. *_{VP} Niet gelezen] heb ik dit boek
 not read have I this book
 b. _{VP} Vaak gelezen] heb ik dit boek
 often read have I this book

- So what appears to be the case is that the finite verb in ReNN does not move to I, but at best to another vP-internal head layer ('verb scrambling' cf. Nilsen 2003). Again, note that such must result in a semantic or pragmatic effect.

Conclusion:
 RENN does not display V-to-I movement, as expected under the RAH.

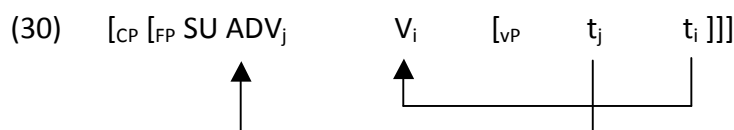
B: Icelandic and Ålvdalen Swedish → Rich agreement without V-to-I movement

- (28) Mér fannst skrítið þegar hann oft LÉK hróknum *Icelandic*
 I found strange when he often moved rook.the
 'I thought it was strange when he often moved the rook'

- (29) a. Eð ir biln so an int will ávå. *Ålvdalen Swedish*
 it is car.def. that he not wants-to have
 b. Eð ir biln so an will int ávå.
 it is car.def. that he wants-to not have

- Note that this example does not show that the verb remains in situ. It only shows that the verb is preceded by an adverb/negation.
- Another logical possibility is that the effect of movement is neutralized by either subsequent movement or higher base-generation of the verb movement diagnostic.

Solution: See for Icelandic Angantýsson (2007) and Thráinsson (2009).



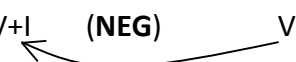
Motivation comes from the properties of the V3 word order:

- It is 'severely restricted and heavily marked'
- The adverb must be stressed
- The subject must be an unstressed pronoun.

Independent evidence for Ålvdalen Swedish:

(31) Eð ir biln so **int** an will ávå.
it is car.def. that not he wants-to have

(32) (NEG) SU (NEG) V+I (NEG) V



Advantages of the adverb fronting analysis:

- Optional movement generally yields information-structural effects, and stress effects on the adverb are thus expected.
- The fact that the subject must be unstressed and not introduce a new referent, then, follows from the adverb already being in focus.
- Optional movement standardly leads to (information-structural) marked sentences. If Bentzen et al. were right, the reverse would apply: *not* moving gives you the marked option, which is typologically extremely odd.
- Example (33) (from Angantýsson, p.c.) shows that verbs that follow adverbs can still precede shifted objects. Under the standard assumption that the object shifts out of *vP* (in the example indicated by the fact that it precedes the negation), the latter must have subsequently moved across the object, countering Bentzen et al.'s account. (cf. Thráinsson (2009) for further argumentation along these lines.).

(33) Mér fannst skrítið þegar hann oft lék hróknum ekki
I found strange when he often moved rook.the not
'I thought it was strange when he often didn't move the rook'

The fact that the finite verb is able to appear to the left of negation at all (in contrast to English and standard versions of Mainland Scandinavian) is what provides the evidence for V-to-I movement.

Conclusion

Icelandic and Ålvdalen Swedish do provide evidence for V-to-I movement.

4 Interim conclusion

1. Poor inflection, still V-to-I (evidence against the strong RAH):
 - turns out not to involve V-to-I: ReNN, Faroese
 - turns out to involve a rich agreement system after all: French
2. Rich inflection, no V-to-I (evidence against the weak RAH)
 - turns out to involve V-to-I: Icelandic, Ålvdalen Swedish

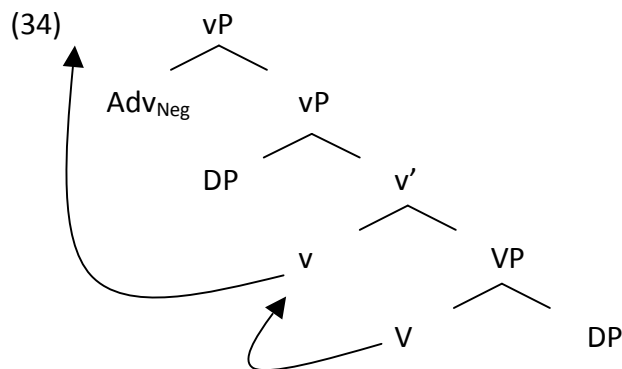
If we add these two conclusions up, we have a reinstatement of the rich agreement hypothesis in its strong form.

Table 1: Typology with the variables “rich/poor” and “V-to-I/no V-to-I”.

	Poor inflection	Rich verbal inflection
No V-to-I	Faroese I & II, ReNN, Kronoby Swedish, Danish	
V-to-I		Icelandic, Yiddish, French

5 Why does rich agreement trigger verb movement?

Definition of V-to-I: movement of the finite verb across the negative marker.



What we observe is that languages where subject agreement is rich in the sense of (1) exhibit movement to a vP-external projection. Since rich verbal morphology is constituted by all features that make up argumental pronouns, we take it that these morphemes are manifestations of formal feature that encodes argumenthood:

- Icelandic –i: [ARGUMENT: +speaker; +part; -plur]
 Icelandic –jum: [ARGUMENT: +speaker; +part; +plur]

Now, [ARG(UMENT)] always hosts a head Arg^o that projects an Arg(ument)Phrase:

Three consequences:

- (i) If the argument features always agree with the subject, Arg° cannot be merged lower than the lowest position in which a DP can be interpreted as the subject: $\text{ArgP} > \text{vP}$ (very much recast of: $\text{AgrSP} > \text{vP}$; the main difference being that the fact that this position hosts subject markers now follows instead of being postulated);²
- (ii) Since $[\pm\text{speaker}]$, $[\pm\text{participant}]$ and $[\pm\text{plural}]$ are not features anymore but values of [ARG]; $[\pm\text{speaker}]$, $[\pm\text{participant}]$ and $[\pm\text{plural}]$ only appear in vP-external position;
- (iii) Since the values of Arg° are spelled out by an affix, verb movement is now triggered by the Stray Affix Filter (Baker 1988) or any reimplementations of it.

If indeed rich agreement requires V-to-Arg movement, the next question that rises is: why are languages without any overt instances of rich phi agreement unable to have V-to-Arg movement.

- From a formal (minimalist) point of view, such a language should be possible, with some Arg° carrying an [EPP] feature.
- From a learnability perspective, such a language should be learnable since due to the presence of (obligatory) V-to-Arg movement in the target language the trigger for this movement (i.e. the [EPP] feature on Arg°) is recoverable.

Still, such languages are not attested.

Interim conclusion:

Verb movement cannot be acquired on the basis of distributional evidence only.

This conclusion follows from two assumptions:

- (i) **V-to-Agr movement is triggered by uninterpretable formal features.**
In order for V-to-Arg movement to take place, Agr° must contain some uninterpretable [ARG] feature triggering the verb to head-adjoin to Agr° .

² Note that this proposal is not committed to the VP-Internal Subject Hypothesis VISH: if VISH is adopted, Arg° will trigger the first DP to its spec position; if VISH is not adopted, subject DPs are base-generated in Spec,Arg :

- (i) a. $[\text{AgrP DP}_{\text{SU}} \text{Arg}^\circ [\text{vP } t_i]]$
b. $[\text{AgrP DP}_{\text{SU}} \text{Arg}^\circ [\text{vP }]]$

The choice basically depends on more general assumptions about theta-role and/or case assignment to the external argument.

(ii) **Uninterpretable formal features must be acquirable.**

Without any evidence for the presence of formal features, there could not be a possible head in the first place that could attract the verb.

The final question, then, is what makes formal features acquirable, i.e. what kind of linguistic data constitute such evidence.

Zeijlstra (2008):

- The only type of positive evidence for the existence of uninterpretable features lies in the overt existence of an element that marks the presence of some semantic operator but is itself semantically vacuous.
- Postulation of a formal feature F essentially requires (morpho-)syntactic doubling:

ELEMENT A	versus	ELEMENT A	-	ELEMENT B
[Semantic]		[iFormal]		[uFormal]

(35) *Flexible Formal Feature Hypothesis (FFFH, Zeijlstra 2008):*

- If and only if there are doubling effects with respect to a semantic operator OP_F in the language input, all features of F are formal feature [i/uF].
- If there are no doubling effects with respect to a semantic operator OP_F in the language input, all features of F are semantic features ([F]).

PREREQUISITE FOR V-TO-ARG: a (sufficiently large) amount of uninterpretable formal [uARG] features, i.e. elements that are formally marked for a number, participant *and* speaker value, which, at the same time, do not contribute to the semantics.

- Rich verbal inflection counts as such evidence (Agreement = doubling).
- Subject doubling (if taken to be an instance of syntactic agreement) does too.

Conclusion:

V-to-Arg movement correlates indirectly with rich subject agreement and depends on the learnability of formal Arg-features.

Consequence: languages with rich inflection, but also languages like French, enable L1 learners to acquire a rich formal feature inventory. Languages, such as Faroese, ReNN or Danish do not.

The question arises, however, what the properties are of verbs with poor inflection. If, e.g. English *-s*, is not the realization of the Arg^o (since [i/uARG] features are unacquirable in English), what is it then?

[-speaker, -addressee, +singular] → *-s*
 elsewhere → \emptyset

What appears to be the case is that [i/uARG] features are not acquirable in English, but number and participant features are. Therefore, the learner cannot postulate [ARG], hence no Arg^o.

(36) [-participant, -plural] → -s
elsewhere → -∅

or:

(37) [-plural] → -s
[-plural → ∅ / [+participant]
elsewhere → -∅

6 Diachronic consequences

This analysis brings in a number of consequences. Most notably, it forms a filter on the type of possible languages, but also makes a number of diachronic predictions.

- Diachronically, all Germanic languages counted as rich agreement languages. In that sense, they also nicely fitted in the RAH pattern: all these languages displayed V-to-I movement.
- Deflection of verbal agreement over time leads to a paradox:
 - (i) The language learner can no longer acquire the proper cues for V-to-I movement.
 - (ii) Yet, at the same time, (s)he is still confronted with a massive evidence of V-to-I movement in their language input.

Possible solutions for the language learner to lift the paradox:

- *Drop of V-to-I movement*: In languages like English, Danish, Standard Norwegian/Swedish V-to-I movement is lost (cf. Roberts 1993, Platzack & Holmberg 1989; Holmberg & Platzack 1991, 1995; Rohrbacher 1994, and references therein), as the cue for V-to-I movement was gone.³
- *V-to-I is reanalyzed as V-to-C*: This is what we observe in Faroese. In the absence of featural richness that would support V-to-I movement, speakers reanalyze embedded V-neg orders as evidence for embedded V2. The result is that Faroese now shows the same unrestricted embedded V2 as in Icelandic, as the results of Heycock et al indicate.
- *V-to-I is retained*: This is what we observe in French. Note, however, that the lack of richness expressed by verbal suffixes must be compensated for elsewhere in the grammar. Otherwise learners would not be led to postulate a formal feature that triggers the verb movement. Learners take subject doubling to be the cue

³ However, such a step is probably too big a step at once, witnessed by possible delays between verbal deflection and loss of V-to-I movement. It is expected that children would no longer always move the finite verb, but also utter V in situ sentences. In a sense, such a stage of the language is reminiscent of those languages that optionally allow V movement.

for postulation of a formal feature F. Hence, retention of V-to-I in French crucially correlates with the dominant pattern of subject doubling

- *V-to-I becomes an optional vP-internal verb movement*: In ReNN and Kronoby Swedish, V movement becomes optional, licensed by pragma-semantic effects.

In the analysis presented above all these types of changes are understandable, whereas under the classical weak version of the RAH these changes remain unexplained.

7 Conclusions + discussion

- This paper aims at resurrecting the strong RAH albeit in a different form: V-to-I movement takes place in some language iff that language exhibits overt evidence for the acquisition of a rich inventory of formal phi features (where V-to-I movement is defined as an obligatory movement without semantic/pragmatic effects).
- Originally, the central understanding of the RAH was that morphology drives syntax. However, we emphasize that our results do not restore that direct connection between syntax and morphology.
- Morphology does not drive syntax; formal features do. The acquisition of formal features, on the other hand, is based on the presence of (overt) evidence of uninterpretable formal features. (Rich) morphology therefore at best ‘indirectly drives’ syntax: it makes the language learner acquire those features that drive syntactic operations.

7.1 V-to-I as V-to-T movement?

One question that emerges concerns the predictions this analysis makes for V-to-T movement. The discussion so far shows that V-to-I/Arg movement is fully dependent on subject agreement and that richness of tense agreement does not trigger V-to-T movement (pace Bobaljik & Thrainsson (1998, 2003), Biberauer & Roberts (2006)). If subject-marking affixes carrying [AGR] must be base-generated in Arg°, why would tense morphemes, such as English *-ed*, not be base-generated in T° and trigger V-to-T movement.

The answer to this question, albeit preliminary, is that the syntactic and semantic properties of tense morphemes do not require vP-external first merger, whereas rich subject agreement must be externally merged (otherwise they could not agree with subjects only). Though due to their semantic type, past tense operators must apply to fully saturated argument structures (i.e. full \bar{v} Ps), but, crucially, *-ed* does not straightforwardly denote past tense. Take the following data:

- (38) a. John said Mary was ill
 b. Jan zei dat Marie ziek was Dutch
 John said that Mary ill was
 ‘John said Mary was ill’

This examples show that English and Dutch are so-called Sequence of Tense languages where subordinate tense is dependent on matrix tense (Abusch (1988, 1997), Heim (1994), Ogihara (1995, 1996) von Stechow (1995, 2003, 2005), Kratzer (1998) Schlenker (1999) and Sharvit (2003) a.o.). In (38a-b) Mary's illness may take place either prior to or simultaneous with John's reporting of it.

The interpretation of the subordinate tense in English/Dutch follows from the interpretation of matrix clause tense. *Was* does not induce an absolute semantic tense of its own. This suggests already that verbal tense morphology does not directly encode the semantics of past tense and that semantic past tense is induced by a different element located at T° (cf. Von Stechow (2003, 2005), Pesetsky & Torrego (2007)).

- (39) Wolfgang played tennis on every Sunday
 = 'For every Sunday in Past_c there is a time t at which Wolfgang plays tennis'
 ≠ 'There is past time on every Sunday at which Wolfgang plays tennis'
 ≠ 'For every Sunday, there is time before it such that Wolfgang plays tennis at that time'

Following Champollion, Condoravdi & Zeijlstra (in prep.) SoT is the result of (i) the semantic denotation of *-ed* as a relative non-future ("no later than") and the fact that all past tense morphemes carry a single [uPAST] feature that is checked by an absolute OpPAST_[iPAST] in the matrix clause.⁴

- (40) [TP John [T Op_[iPAST]] [vP say-ed_[uPAST] [CP Mary be-ed_[uPAST] ill]]]

Crucially, OpPAST is an absolute past hosted in TP, whereas *-ed* is a relative tense that only agrees with OpPAST. Given the fact that relative tenses do not modify the semantic type of their complements, there is neither a semantic nor syntactic necessity to base-generate *-ed* vP-externally. Consequently, no V-to-T movement is required to spell-out past tense morphology.

⁴ Without going into too many semantic details, functional application by an absolute past tense results in a different semantic type than its domain. The type of OpPAST in (i) must be <<i,p>> .

- (i) [[OpPAST_[iPAST]]] (p) = $\exists t. t \subseteq t^\circ \ \& \ p(t)$

However, functional application by a relative tense operator, as shown in (ii) yields the same type as its domain. Applies to propositions, it is <<i,p>,<i,p>>.

- (ii) [[ed_[uPAST]]] (p) = $\lambda t. \exists t'. t' \subseteq t \ \& \ p(t)$

Since the it does not change the type of its complement, it could just as well be applied to elements with another types, e.g. simple predicates: <<e,<i,p>>,<e,<i,p>>>

- (iii) [[ed_[uPAST]]] (P) = $\lambda x. \lambda t. \exists t'. t' \subseteq t \ \& \ p(t)(x)$

PREDICTION: In languages without Sequence of Tense, tense morphology on the verb must denote absolute tense, which in turn motivates base-generation of the tense features vP-externally. Hence, in these languages, tense-related verb movement is expected.

Conclusion:

The hypothesis that rich agreement triggers verb movement out of the vP does not imply that tense morphology should do the same.

7.2 Typological perspectives

7.2.1 Slavic languages: Russian

Another argument against the RAH might come from Russian that - despite being rich - normally spells out finite verbs to the right of manner adverbs, and that would therefore form an argument against movement of V_{fin} out of vP (41a). Even stronger, in negative sentences, V_{fin} does appear to the left of these adverbs (41b).

- (41) a. My vniatel'no procitali pravila
I carefully read rules
'We have carefully read the rules'
- b. Ty ne procitala vniatel'no pravila
You NEG read carefully rules
'You haven't read the rules carefully'

If negation is taken to indicate the vP boundary, this would suggest that in non-negative clauses the verb remains in situ. However, independent evidence taken from Dyakanova (2009), who bases herself on Svenonius (2004) amongst others, shows that Russian finite verbs can be prefixed by aspectual markers that have quantificational force over events and therefore must be base-generated vP-externally:

- (42) bit na-bit po-na-bit
'to break' 'to break a lot of something' 'to break a lot of something, one by one'

This, then, entails that V_{fin} always moves to a higher position than vP, further indicating that NegP must be subsequently higher in the clause. This is fully compatible with a clausal spine as in (3):

- (43) NegP > (Adv >) ArgP > AspP > vP

The only question that remains open is why the subject appears to be in a higher position than ArgP. For Dyakanova (2009) this is due to the fact that subjects in SVO constructions must always topicalize and therefore front to an even higher TopP.

Regardless, however, of the exact treatment of subjects in Russian SVO construction, the facts above indicate that the previously made claims (e.g. by Bailyn 2005) that Russian finite verbs do not undergo obligatory vP-external movement are incorrect.

Conclusion:
Russian does not falsify the RAH.

7.2.2 The Romance languages

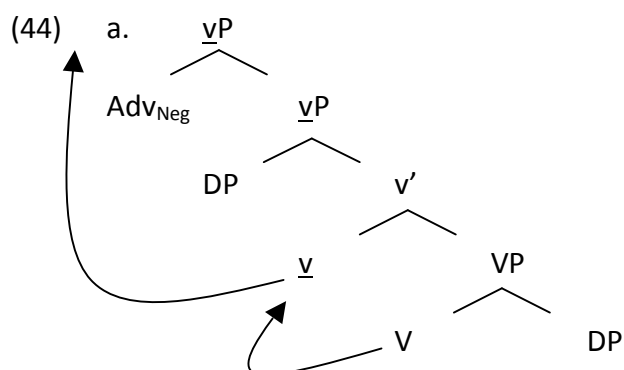
For French (cf. Emonds 1976; Pollock 1989), Italian (Belletti 1990), Spanish (Suñer 1994, Zagona 2002) and European Portuguese (Ambar 1992; Costa 2004), the claim that V-to-I occurs is the standard one. This is what one would expect, as these languages are richly inflected. There are, however, two issues:

- (i) The (according to us) most reliable verb movement diagnostic, negation, is not crossed by the verb in Italian, Spanish and Portuguese due to its clitic status.
- (ii) Some Romance varieties are poorly inflected (e.g. Brazilian Portuguese).

Let's discuss each in turn.

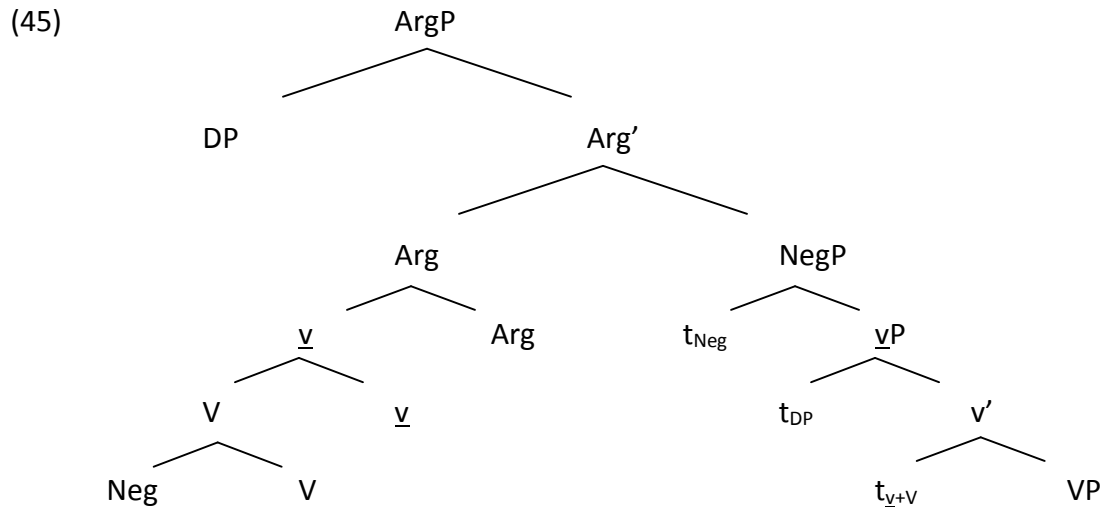
Ad (i):

The fact that finite verbs in Romance languages can cross low or even high adverbs cannot be the decisive evidence for V-to-I movement anymore, given ReNN. There is always the chance that it involves a low, vP-internal movement ('verb scrambling'). Hence, negation is more reliable in Germanic, but it is not in Romance.



- The verb cliticizes to the verb by left-adjointing to it.
- For this to happen, the verb has to cross negation first, i.e. it must leave vP.

- The fact that Romance languages cliticize negation to the verb provides evidence for V-to-I movement.



POTENTIAL OBJECTION: The need for negation to cliticize to the verb is what drives verb movement, not the need to move to the head of ArgP.

ANSWER: That would predict that the verb is in a lower position in affirmative clauses. There is no evidence for this: the finite verb is to the left of adverbs like *sempre* ‘often’ in affirmative and negative clauses. One could conclude, on the basis of ReNN, that the positioning of adverbs like *sempre* is more flexible, so that in the order V_{finite} -*sempre* the verb could still be vP-internal, compatible with no V-to-Arg movement. But, then you expect obligatory V_{finite} -*sempre* ordering in negative clauses and optional V_{finite} -*sempre* ordering in affirmative clauses, contrary to fact.

There is a second diagnostic for a subset of the Romance languages: European Spanish and European Portuguese allow VSO orders, which are analyzed as structures in which the subject remains in situ (cf. Zagona 2002, Costa 2001, 2005).⁵ These languages, therefore, confirm the RAH.

Conclusion:
The standard Romance languages do not falsify the RAH.

Ad (ii):
Brazilian Portuguese is poor (Duarte 1993). It only motivates the features [\pm speaker] and [\pm plural]:

⁵ In Spanish, the VSO order is only accepted by a subgroup of Spanish speakers, for whom this order functions as the basic order (cf. Ordoñez and Treviño 1995). In European Portuguese, the VSO order functions as a way to put the subject in focus (The sentence in (b) would be a reply to “Nobody wrote anything.”). See Costa (1998) for more discussion.

(46)	Brazilian Portuguese	
	SG	PL
1st	cant-o	cant-amos
2nd	cant-a	cant-am
3rd	cant-a	cant-am

Facts about Brazilian Portuguese:

- Negation is a clitic → diagnostic for verb movement out of vP in negative clauses
- The VSO order is ungrammatical → not a diagnostic

Brazilian Portuguese, therefore, provides no argument for or against the claim that the verb leaves the vP in all finite clauses.

Conclusion:
Brazilian Portuguese does not falsify the RAH.

7.2.3 The Celtic languages: Modern Irish

Modern Irish is rich and poor at the same time (McCloskey & Hale 1984):

(47)	a.	Conditional agreement		b.	Indicative agreement	
		SG	PL		SG	PL
	1 st	chuirf-inn	chuirf-imis	1 st	chuirf-im	chuirf-eann
	2 nd	chuirf-ea	chuirf-eadh	2 nd	chuirf-eann	chuirf-eann
	3 rd	chuirf-eadh	chuirf-eadh	3 rd	chuirf-eann	chuirf-eann

Nevertheless, the verbal syntax is the same: VSO orders.

Analysis:

- These paradigms consist of synthetic and invariable analytic forms.
- Analytic forms can co-occur with a subject pronoun, synthetic forms cannot (the 'complementarity principle').

(48) *Chuirf-inn mé isteach ar an phost sin.
put.cond.1.sg I in on the job that
'I would apply for the job.'

- Analytic forms are verbal stems plus an affix. To account for the complementarity principle (i.e. the difference between Irish and Italian), synthetic forms are either incorporated pronouns (Anderson 1982) or suppletive forms that post-syntactically spell out both the finite verb and the subject pronoun (Doron 1988).

Conclusion: Modern Irish has a poor agreement paradigm and the verb movement we see is unrelated to rich agreement, like verb second.

Conclusion:
Modern Irish does not falsify the RAH.

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