

Diachronic implications of the Rich Agreement Hypothesis: On the connection between morphological and syntactic change

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1. Introduction

- Old idea in (historical) linguistics: **Correlation between syntactic and morphological change**, cf. the following statements taken from Sapir (1921) and Vennemann (1975) on the connection between the loss of (rich) case morphology and the rise of (basic) SVO order:¹

“[...] as the inflected forms of English became scantier, as the syntactic relations were more and more inadequately expressed by the forms of the words themselves, position in the sentence gradually took over functions originally foreign to it.” (Sapir 1921: 178)

“As a substantive S-O marking system is eroded by phonological change, word order syntax must react to compensate for the ambiguities and perceptual complexities arising in a consistent verb-final language.” (Vennemann 1975: 293)

- In the generative literature, the link between morphology and syntax has been reinterpreted in terms of **synchronic universals** (i.e., ‘hard-wired’ properties of UG), in the sense that the presence of a certain morphological property *M* triggers a syntactic property *S*.²
 - One of the most widely discussed of these is the ‘**Rich Agreement Hypothesis**’ (**RAH**), originally going back to work by Kosmeijer 1986 and Platzack & Holmberg 1989), according to which verb movement to INFL/T (i.e., to a position to the left of negation and VP-related adverbs) is linked to rich subject agreement morphology on the finite verb.
 - The RAH comes in two basic variants:³
- (1) a. The ‘strong’ RAH: Rich subject agreement morphology \longleftrightarrow V-to-I
 - b. The ‘weak’ RAH: Rich subject agreement morphology \longrightarrow V-to-I

¹ Sapir focuses on seemingly directional historical developments (‘drift’) in the history of English, leading from synthetic to analytic constructions (loss of case endings – stabilization of SVO word order – rise of the invariable word). Vennemann (1975) generalizes Sapir’s insights in the form of a diachronic universal (based on considerations of language processing/perception and linguistic typology).

² Relevant diachronic generative studies investigated the impact of the loss of verbal inflection on the availability of verb movement (for the history of English cf. Roberts 1993; for the Scandinavian languages Platzack 1988, and Holmberg and Platzack 1995; see also Rohrbacher 1999) and pro-drop (for the history of French cf. Roberts 1993, Vance 1997; for present-day varieties of French cf. Roberts 2010; for Swedish Falk 1993, for the Scandinavian languages in general cf. Holmberg and Platzack 1995; for English Allen 1995, Haerberli 1999), the relation between the loss of nominal inflections and changes affecting word order and the rise of ECM constructions (for the history of English cf. Lightfoot 1979, 1991, 1999, van Kemenade 1987, Roberts 1997, Kiparsky 1996, 1997, Haerberli 1999, 2004, Biberauer and Roberts 2005, 2008), or changes affecting the inventory of C-related clausal particles and the rise of generalized V2 syntax in Germanic (cf. Ferraresi 2005 on Gothic and Axel 2007 on Old High German).

³ For the strong biconditional RAH cf. Vikner (1997) and Rohrbacher (1999); for weaker formulations in terms of a one-way implication, cf. Platzack & Holmberg (1989), Roberts (1999, 2007), Koenenman (2000), and Bobaljik (2003); Alexiadou & Fanselow (2002) for a diachronic explanation of the link between agreement and V-to-I.

- In the debate on the validity of the RAH, diachronic evidence played a significant role from early on:
 - ❖ Initially, the observation that in the Germanic SVO languages, the erosion of the formerly rich verbal agreement system preceded the loss of verb movement, was taken to support a strong interpretation of the RAH.
 - ❖ When it became clear that the loss of agreement morphology and the loss of verb movement are often separated by a considerable temporal gap, diachronic evidence was used as an argument against a strong, biconditional interpretation of the RAH.
 - Recently, Koenenman & Zeijlstra (2014) have argued that the RAH should be reinstated in its strongest, biconditional form, linking richness of verbal inflection to universal properties of subject pronoun inventories (Greenberg's 1963 universal 42):⁴
- (2) A language exhibits V-to-I movement iff the regular paradigm manifests featural distinctions that are at least as rich as those featural distinctions manifested in the smallest pronoun inventories universally possible [= three persons, two numbers].
- Koenenman & Zeijlstra further suggest that problematic diachronic evidence can be accounted for by assuming that after the loss of the morphological distinctions, conflicting word order patterns may be preserved via syntactic reanalysis.
 - This paper: Re-assessing the relationship between morphological and syntactic change:
 - ❖ Discussion of diachronic evidence suggesting that the connection between syntax and morphology is less tight than one might hope for;
 - ❖ Problematic cases: (i) morphological change without (or with delayed) syntactic change; (ii) syntactic change without (or with delayed) morphological change; (iii) rise of inflections without (or with delayed) syntactic change (iv) syntactic change in the face of apparently conflicting morphological evidence.
 - ❖ V-to-I: Approaches that link verb movement to other inflectional categories (e.g. Tense, Biberauer & Roberts 2010) seem to be more promising; still, problems remain.

Overview:

- Section 2 discusses strong/weak theories of the morphology/syntax interface and their predictions for language change.
- Section 3 briefly reviews a set of (well-known) problems concerning the diachronic connection between (the loss of) rich verbal agreement and verb movement (the RAH)
- Section 4 presents a set of lesser-known data that raise further questions for the assumption that there is a (strong) link between morphology and syntax:
 - ❖ rise of prefixal/proclitic agreement in Aslian (Mon-Khmer) languages
 - ❖ rise of basic SVO order in Lithuanian
 - ❖ rise of 'nominative' (S/A) person agreement in languages with erg./abs. case alignment
- Section 5 wraps up and provides a concluding summary.

⁴ Koenenman & Zeijlstra assume that rich agreement features are located in a separate functional head Arg (for Argument(hood)) that obligatorily triggers verb movement if present (while poor agreement is linked to features on *v*). They argue that well-known counter-examples against a strong RAH (such as Faroese or Övdalian) do not stand up to closer scrutiny. More precisely, they maintain that relevant exceptions (e.g., apparent verb movement in the absence of rich inflection) can be explained away by assuming that elements such as adverbs and negation that are commonly used as diagnostics for the structural position of the finite verb occupy an exceptionally high (or low) position in the problematic data.

2. Does morphology drive or reflect syntax? Predictions for language change

2.1 The strong view

- Theories assuming a strong causal link between morphology and syntax (e.g., the strong RAH, Rohrbacher 1999, Koenenman & Zeijlstra 2014): Morphological and syntactic change should proceed more or less simultaneously:
 - ❖ Loss of morphological property $M \Rightarrow$ loss of a syntactic property S linked to M
 - ❖ Rise of morphological property $M \Rightarrow$ rise of S linked to M
- This approach necessarily leads to a conflict w.r.t. language acquisition:
- Loss of M : At the point when a learner fails to acquire M , M will still be part of the target grammar. As a result, syntactic patterns linked to M will continue to be part of the input the learner receives, leading to a situation where morphological and syntactic cues⁵ for a given property/parameter contradict each other:

Target grammar G1 (+ M , + S) \Rightarrow Output 1 (status of M unclear, but synt. cues linked to + S)
↓
Grammar G2 acquired by the learner (- M , - S ?) \Rightarrow Output 2

- Rise of M : When the learner acquires M (e.g., rich agreement via a reanalysis of subject clitics), he/she will encounter syntactic patterns that does not match M (since the target grammar lacks both M and S):

Target grammar G1 (- M , - S) \Rightarrow Output 1 (status of M unclear, but synt. cues linked to - S)
↓
Grammar G2 acquired by the learner (+ M , + S ?) \Rightarrow Output 2

- Moreover, the strong view predicts that it should not be possible to innovate a syntactic property S in the absence of a morphological property M to which S is causally linked (likewise, a language cannot lose S as long as M is present).

2.2 The weak view

- Theories assuming a weak causal link between morphology and syntax (e.g., the weak RAH, cf. e.g. Roberts 1999, 2007, Bobaljik 2003): The loss of M does not necessarily entail a loss of S connected with it, as long as the latter can be acquired based on syntactic trigger evidence:
 - ❖ Loss of morphological property $M \Rightarrow$ evidence for S linked to M weakened, but S may remain part of the grammar
- Loss of M : A weak approach provides enough leeway to account for temporal gaps between the loss of M and syntactic change. Moreover, the loss of inflections does not lead to a conflict during L1 acquisition.
- Rise of M : When it comes to the rise of M (e.g., via grammaticalization processes), the diachronic predictions of the weak position do not differ from those of the strong view:

⁵ That is, properties of the input (the Primary Linguistic Data) that trigger a certain parameter value (cf. Lightfoot 1999 on the notion of *cue* and Clark & Roberts 1993 on the notion of *parameter expression*).

- ❖ Rise of morphological property $M \Rightarrow$ rise of S linked to M
- Even under the weak view, the rise of M leads to a conflict: The word order patterns generated by the target grammar (which lacks both M and S) does not match morphological properties posited by the learner (e.g., innovated rich verbal agreement).
- Possibility of syntactic change independent of morphological change: In principle, a language can develop a syntactic property S linked to M even if M is absent (the opposite, i.e., loss of S in the presence of M should not be possible)
- Summing up:
 - ❖ Weak theories can better handle scenarios that involve the loss of morphological properties (temporal gap between morphological and syntactic change)
 - ❖ Both strong and weak theories make strong predictions concerning the rise of a morphological property M causally linked to a syntactic property S .
 - ❖ The strong approach further predicts that it should not be possible to innovate a syntactic property S in the absence of a morphological property M to which S is causally linked.

3. Known problems – reanalysis as a solution?

- Koenenman & Zeijlstra (2014) propose that conflicts between syntactic (i.e., verb movement) and morphological cues resulting from the loss of inflections may be resolved via a reanalysis of problematic word order patterns. The reanalysis preserves (for some time) the ‘old’ word order and is thus presented as an explanation for the fact that syntactic change often lags behind:
 - i. Reanalysis of syntax to fit the morphology: V-Neg/Adv patterns that cannot any longer be parsed in terms of V-to-I movement are reanalyzed in terms of
 - a. embedded V2 (i.e., V-to-C movement; Faroese)
 - b. involving an exceptionally low position of adverbs and negation (Regional Northern Norwegian).
- (3) $[_{CP} [_{IP} V_{fin}+INFL [_{NegP} Neg [_{vP} Adv \dots]]]]$ is reanalyzed as either (4a) or (4b):
- (4)
 - a. $[_{CP} V_{fin}+C [_{IP} INFL [_{NegP} Neg [_{vP} Adv \dots]]]]$
 - b. $[_{CP} [_{IP} INFL [_{vP} V_{fin}+v [_{VP} Neg Adv \dots]]]]$
- ii. Reanalysis of morphology to fit the syntax: Restoration of rich verbal inflection (i.e., the trigger of V-to-I) via a reanalysis of subject clitics as agreement markers (French).
- General Problems:
 - i. This proposal seems to insulate the strong RAH from problematic diachronic evidence.
 - ii. Moreover, it relocates the problem but does not solve it: Why are the results of the reanalyses not stable over time? After all, the relevant parametric choices (e.g. reanalysis of adverb placement, or verb movement) should be as ‘good’ or stable as any other grammar that is compatible with the principles of UG.⁶

⁶ Note that the weak RAH faces related problems, since it is unclear why ‘disharmonic’ systems combining weak inflection and verb movement do not seem to be stable either (but. cf. Haerberli 2004 for discussion and Heycock & Wallenberg 2013 for a possible solution based on Yang’s 2000 variational learning model).

3.1 Morphological change and delayed syntactic change I: Danish

- Verbal agreement: By 1350 all person distinctions have been lost (Sundquist 2002, 2003):

	Present	Past
1sg	dømær	dømdæ
2sg	dømær	dømdæ
3sg	dømær	dømdæ
1pl	dømæ	dømdæ
2pl	dømæ	dømdæ
3pl	dømæ	dømdæ

Table 1: Middle Danish (around 1350): *dømæ* ‘to judge’ (Sundquist 2003: 244)

- Syntax: V-to-T continues to occur at a rate of over 40% till the end of the 16th century (in embedded clauses without V2)

	V–Neg	%	V–Neg revised ⁷	%
1500–1550	52/116	45%	16/38	42%
1550–1600	40/123	33%	7/24	29%
1600–1650	13/106	12%	6/45	13%
1650–1700	13/110	12%	5/33	15%

Table 2: V–Neg orders in Early Modern Danish: 1500–1700 (Sundquist 2003: 242)

- Loss of agreement inflection and loss of verb movement are separated by a temporal gap of approximately 250 years (see Sundquist 2002, 2003 for details and an account not based on the (strong) RAH).⁸
- The weak RAH: no problem (so it seems)
- The strong RAH: Potential account (in the spirit of Koenenman & Zeijlstra 2014): Reanalysis of problematic V-Adv/Neg orders in terms of (i) V-to-C movement, or (ii) a low position of Adv/Neg.
- Problems (Sundquist 2003, Heycock & Sundquist 2016):
 - ❖ The availability of V-Neg/Adv orders in contexts that do not license V2 suggests that V-to-T/Arg movement has not been reanalyzed as movement to C.
 - ❖ Historical stages of Danish arguably do not meet the diagnostic criteria for low adverb/negation placement which Koenenman & Zeijlstra identify for Övdalian and Regional North Norwegian (apart from the surface position, the syntax/semantics of these elements does not seem to differ from present-day Danish).

⁷ Without clauses (i) introduced by *at* (possible instances of embedded V2 under bridge verbs) and (ii) containing pronominal subjects (which may cliticize onto the complementizer and thus might license stylistic fronting of adverbs).

⁸ See also Heycock & Wallenberg (2013) on related developments in other Scandinavian languages and an account in terms of Yang’s (2000) variational acquisition model.

3.2 Morphological change and delayed syntactic change II: French

- Modern (spoken) French: Weak agreement (due to the extension of *on* ‘(some)one’ to 1pl), but obligatory verb movement across adverbs and negation:

	Written language	Phonetic form
1sg	porte	[pɔʁt]
2sg	portes	[pɔʁt]
3sg	porte	[pɔʁt]
1pl	(on) porte	[pɔʁt]
	(nous) portons	not used in Colloquial French
2pl	portez	[pɔʁ'te:]
3pl	portent	[pɔʁt]

Table 3: Subject agreement in written/spoken French

- (5) Loïc visite souvent ses parents.
Loïc visits often his parents
‘Loïc often visits his parents.’

- ❖ Similar to Danish, it seems that the loss of inflections (Middle French, 14th-16th century, cf. Wartburg 1970, Ashby 1977, Harris 1978, Roberts 1993, Vance 1997) had no direct influence on the availability of verb movement.
- ❖ The weak RAH: again, no problem.
- ❖ The strong RAH (Koenenman & Zeijlstra 2014): Reanalysis/grammaticalization – the loss of verbal agreement suffixes in combination with V-Adv/Neg patterns triggered an ongoing change in which subject clitics first became obligatory and then underwent a **reanalysis as prefixal agreement markers**.⁹

- (5) Moi, je travail souvent la nuit.

- a. [_{CP} *moi* [_{IP} *je* [_{I'} *travail* [_{VP} *souvent* ...]]]] is reanalyzed as:
b. [_{CP} [_{IP} *moi* [_{I'} *je*_{AGR}+*travail* [_{VP} *souvent* ...]]]]

⁹ In the history of French, we can observe a cluster of changes involving pronouns, verbal agreement and the pro-drop property, which appears to be cyclic in nature (cf. e.g. Wartburg 1970, Ashby 1977, Harris 1978, Lambrecht 1981, Roberge 1990, Roberts 1993, Vance 1997, Roberts 2010):

- (i) distinctive verbal Agr/pro-drop (OFr.)
- (ii) loss of Agr/loss of pro-drop (Middle Fr., 14th-16th century)
- (iii) subject pronouns lose emphatic force and become clitics (15th-18th century)
- (iv) clitics are reanalyzed as verbal agreement/rise of pro-drop (ongoing change)

Note that according to Wartburg (1970: 72) and Harris (1978: 113), the rise of overt pronouns (in Middle French) is not directly related to the loss of agreement morphology, but rather is linked to word order properties and prosodic factors (in fact, Harris claims that subject pronouns became obligatory prior to the erosion of the agreement system, but see Simonenko et al. 2015 for a different conclusion based on a quantitative analysis of data from the MCVF corpus of historical French). Givón (1976) claims that the rise of new agreement markers in French involves a reanalysis of a former topic left dislocation structure. However, there are at least some indications that the relevant syntactic environment was *not* topic left dislocation, but rather a structure where a reinforcing full form (e.g. the oblique 1sg form *moi*) has been added to the non-stressable clitic for reasons of emphasis/focus (cf. Wartburg 1970, Ashby 1977 for details).

- Observation: The subject ‘clitics’ of Colloquial French differ from those of the standard language:¹⁰
 - i. The preverbal ‘subject clitics’ are obligatory, occupy a fixed position, may not receive stress and cannot be replaced by full tonic pronouns (historically an oblique form); examples with apparent clitic doubling generally favor a basic, non-dislocated interpretation:

Colloquial French

(6) a. (Moi) je porte la table.
me 1SG carry the table
‘I carry the table.’

b. Moi *(je) porte la table.
me 1SG carry the table
‘I carry the table.’
(Gerlach 2002:224)
 - ii. In ‘advanced’ non-standard varieties of French (Picard, or Pied-Noir), doubling has been extended to quantified expressions and indefinite NPs (cf. Roberge 1990, Friedemann 1997, Auger 1994b, 2003):¹¹

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

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

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

Problems (cf. e.g. de Cat 2005):

- All colloquial varieties of French exhibit verb movement and the extension of *on* to 1pl, but only in some of them, the ‘subject clitics’ show all characteristics of agreement prefixes. In particular, in many spoken varieties of French, the clitics are incompatible with quantified expressions, indefinite DPs, and *wh*-phrases.
- At least in some of the relevant varieties, it seems that the position of the alleged person/number markers (2sg, 3sg) is not fixed (the clitic follows the verb in yes/no questions):

¹⁰ For details cf. Ashby (1977), Harris (1978), Lambrecht (1981), Roberge (1990), Auger (1993, 1994a, 2003), Zribi-Hertz (1994), Fonseca-Greber (2000), Fonseca-Greber and Waugh (2003), Gerlach (2002), Roberts (2010); but see de Cat (2005) for an opposing view.

¹¹ Corpus studies carried out by Fonseca-Greber (2000) and Fonseca-Greber & Waugh (2003) show that doubling is being extended to contexts with quantified NPs in spoken (Swiss) French as well. Auger (2003: 5) notes that in Picard, a default 3sg.masc clitic is also present in *wh*-questions:

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

- (10) Peut-il avoir une petite bouchée?
 may-he have a little mouthful
 ‘Can he have a little bite?’
 (de Cat 2005: 1200)

- Other preverbal clitics (object clitics, elements such as *en*, *y* and the negation particle *ne*) may intervene between the alleged agreement markers and the verb, which suggests that the latter are clitics as well (Zwicky & Pullum 1983: clitics can attach to hosts+affixes, but affixes cannot attach to hosts+clitics):

- (11) a. Je la lui donnerai.
 I it to-him will-give
 ‘I’ll give it to him.’
 b. Je ne t’ en veux pas.
 I NEG to-you of-it want NEG
 ‘I don’t begrudge you.’
 c. On y va?
 we there goes
 ‘Shall we go?’
 (de Cat 2005: 1200)

- Conclusion: Varieties in which the preverbal person markers cannot be analyzed as agreement prefixes continue to be a problem for the strong RAH.

3.3 Syntactic change and delayed morphological change: English

- Verb movement is lost in two steps (Haerberli & Ihsane 2014, 2015):
 - (i) loss of movement to a ‘high’ position to the left of adverbs (Haerberli & Ihsane: T⁰)
 (start: middle of 15th century; completion: middle of the 16th century);
 - (ii) loss of movement to a ‘low’ position to the left of negation (Haerberli & Ihsane: Asp⁰)
 (start: middle of the 16th century; completion: second half of the 18th century)

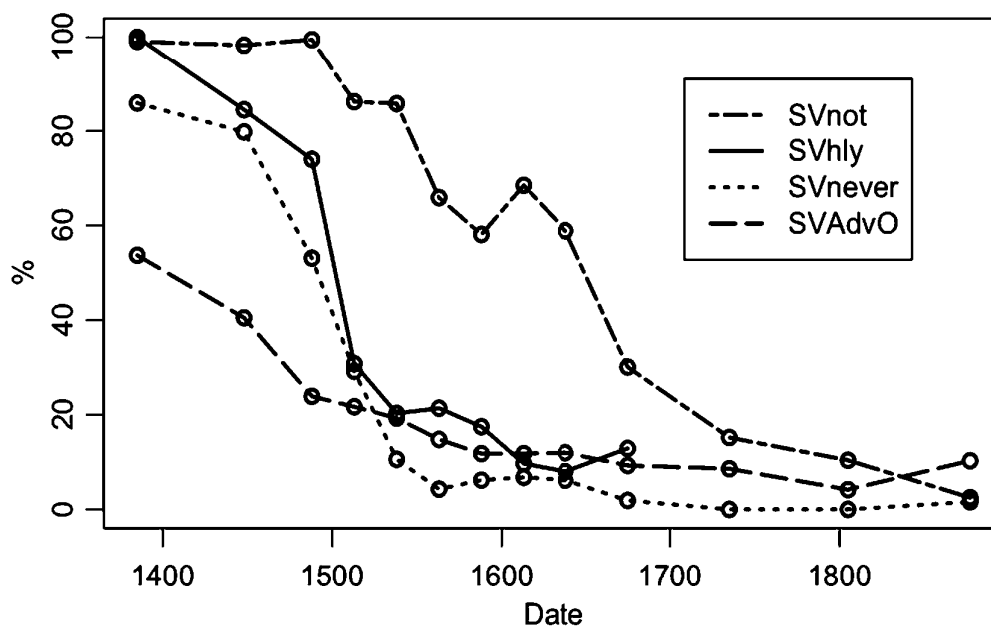


Figure 1: Verb placement relative to Adv/Neg in the Penn Corpora and PCEEC (Haerberli & Ihsane 2015’s figure 2)

- Verbal agreement morphology: Paradigm counts as ‘rich’ (in K&Z’s sense) until the 17th century (the 2sg ending *-(e)st* continues to be robustly used in connection with *thou*):¹²

	Strong verbs: <i>binden</i> ‘to bind’	Weak verbs: <i>love(n)</i> ‘to love’
Present indicative		
1sg	binde	love
2sg	bindest	lovest
3sg	bindeth	loveth
pl	binde(n)	love(n)
Past		
1sg	bounde	lovede
2sg	bounde	lovedest
3sg	bounde	lovede
pl	bounde(n)	lovede(n)

Table 4: Verbal agreement, Middle English (Ellesmere ms. of *The Canterbury Tales*, late 14th/early 15th century, London)

- The loss of a distinctive 2sg ending results from the replacement of the 2sg pronoun *thou* by *you* (cf. e.g. Mitchell 1971, Hope 1993, Busse 2002):

“The replacement of *thou* by *you* starts very slowly in the 13th century, reaches its peak in the 16th and 17th centuries, and then slowly recedes from the 18th century onwards, except in special genres and registers.” (Busse 2002: 10)

- Development from 1580-1780, based on Mitchell (1971), who collected 57.580 occurrences of 2nd person pronouns from 62 plays written between 1580 and 1780:

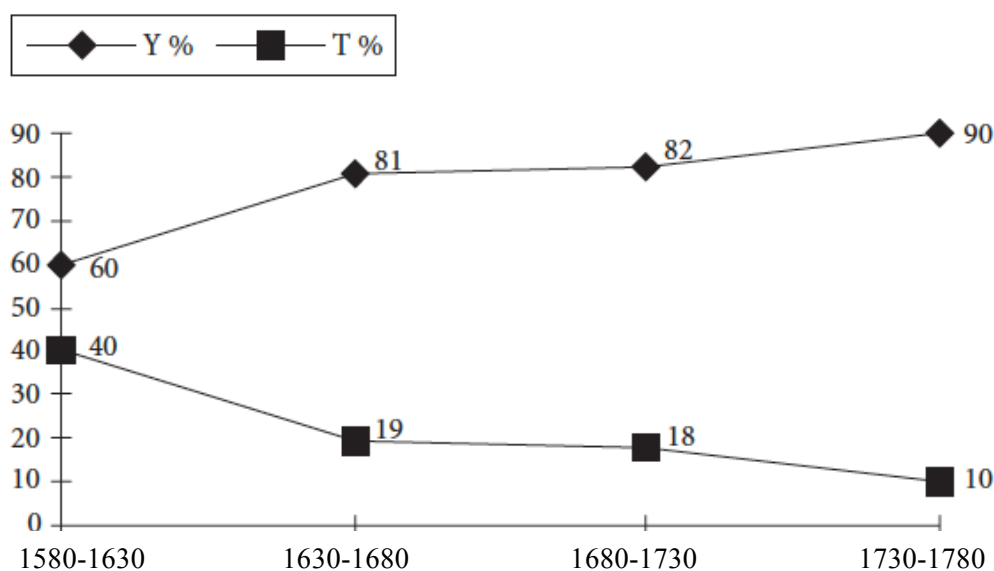


Figure 2: The percentage of *thou* and *you* in 62 plays from 1580 to 1780 (Busse 2002: 51)

¹² Note that Northern varieties exhibit less rich agreement (merger of 2sg and 3sg), while Southern varieties are more conservative than the London or Midland varieties (plural \neq infinitive).

- It is fairly clear that the early loss of V-Adv orders (starting in the mid-15th century) cannot be attributed to the loss of verbal agreement (2sg agreement remains relatively robust till the 17th century).
- Problem for both the strong and the weak version of the RAH: The loss of verb movement in the history of English cannot be attributed to the loss of verbal agreement morphology ⇒ **syntactic change precedes the loss of rich agreement**.¹³

3.4 Preliminary summary

- An account in terms of ‘forced’ reanalysis does not seem to be readily available for the changes in Danish, (colloquial) French, and English.
- Particularly problematic (for all versions of the RAH): Cases where syntactic change precedes morphological change (see also Fischer 2010).
- Potentially more promising: Trigger of V-to-T movement is not (solely) agreement, but other verb-related inflectional categories such as Tense/Aspect/Mood, possibly in combination with agreement (Biberauer & Roberts 2010 on French and English, Holmberg & Roberts 2013, Haeberli & Ihsane 2015 on English).

(12) Spoken French: *parle* (present indicative/subjunctive), *parlerai* (future), *parlerais* (conditional), *parlais* (imperfect)

(13) a. English: *speak* (present), *spoke* (past)
b. Swedish: *snakker* (present), *snakket* (past)

- Earlier stages of English/Mainland Scandinavian: Productive indicative/subjunctive distinction which might have contributed to the richness of verbal inflections (cf. Haeberli & Ihsane 2015 on English).
- Next:
 - i. Rise of agreement without rise of verb movement (Aslian languages)
 - ii. Another example where syntax seems to lead the charge for change (word order change in Lithuanian)
 - iii. Syntactic change despite morphological counterevidence (argument encoding in Tabasaran/Lezgian)

4. New and additional problems

4.1 Morphological change without syntactic change: The rise of prefixal agreement

- Various Aslian languages spoken in Malaysia (Austroasiatic/Mon-Khmer SVO languages spoken by the Orang Asli, the indigenous people of the Malay Peninsula: Temiar (Benjamin 2016), Jah Hut (Diffloth 1976), Semelai (Kruspe 2004), Jahai (Burenhult 2002)) have developed or have been developing pre-verbal bound person markers, exhibiting various stages of proclitical subject pronouns turning into agreement markers.

¹³ Note that frequent verbs such as *know* (not considered by Ellegård 1953; cf. Hale 2007 for critical discussion) resisted do-support much longer and continued to undergo verb movement: If V-to-T is a syntactic parameter, then lexical exceptions (not triggered by morphology) must be possible (similar to *have/be* raising in present-day English, cf. e.g. Roberts 1998).

- The personal prefixes/proclitics are usually obligatory and cannot receive stress. They may co-occur with full NP subjects and independent personal pronouns (but cannot be replaced by these).
- However, the development of preverbal bound person marking does not seem to give rise to V-Neg/Adv orders.
- Semelai (Kruspe 2004: 171): Bound person markers for agents (also used with a couple of intransitive verbs that imply agentivity of the sole argument):

		Minimal familiar	minimal	augmented	sg	pl
Personal pronouns	1	ʔəŋ	yɛ	yɛ=ʔen		
	2	kɒ	ji	je=ʔen		
	1 & 2		hɛ	hɛ=ʔen		
	3				kəh	deh
	3S ¹⁴				kəhn	dehn
Person proclitics (A)	1	ʔəŋ=	yɛ=	hɛ=		
	2	kɒ=	ji=			
	3				ki=	de=
	3UA ¹⁵				ko=	

Table 5: Personal pronouns and bound person forms in Semelai (Kruspe 2004: 171)

- (14) a. **daʔ** ki=jʔəy sŋkalan
 NEG 3A=make grinding.board
 ‘He didn’t make a grinding board.’
 (Semelai; Kruspe 2004: 316)
- b. kmpən, **daʔ** ki=goŋ swak
 wife NEG 3A=take walk
 ‘(His) wife, he didn’t take walking.’
 (Semelai; Kruspe 2004: 317)
- c. sarek, **daʔ** ki=k^hɛʔ wəʔ cəkɒp smlay
 future neg 3A=know longer talk Semelai
 ‘In the future, she won’t know the Semelai language anymore.’
- If the subject is expressed overtly in preverbal position, it always precedes the negation, giving rise to subj.-NEG-V order:¹⁶
- (15) kəhn **daʔ** ga=dəs
 he NEG IMM=come
 ‘He won’t be coming.’
 (Semelai; Kruspe 2004: 317)

¹⁴ “3S”: A special form of the 3sg pronoun that is used with intransitive verbs.

¹⁵ “3UA”: ‘unidentified agent(s)’ (note that there are no free pronominal forms available to express this concept)

¹⁶ Similar to other Aslian languages (cf. e.g. Burenhult 2002 on Jahai), the preverbal bound person markers are left out when certain other inflectional prefixes/proclitics are attached to the verb (e.g. Semelai *ga-* ‘imminent aspect, indicating that an event is just about to begin’, *ma-* ‘irrealis’). However, note that in Temiar (Benjamin 2016: 30), the person markers have fused with the irrealis proclitic, giving rise to two sets of bound person markers (indicative vs. irrealis).

- Jah-Hut (Diffloth 1976): Separate series of bound person forms obviously derived from free pronouns. Similar to Semelai, bound person markers are confined to verbs with an agentive argument.

	Personal pronouns	Personal prefixes
1sg	ʔihãh	hãh=
1pl excl.	ʔibɔʔ	bɔʔ=
1pl incl.	ʔihɛʔ	hɛʔ=
2sg (familiar)	ʔimãh	mãh=
2sg (respectful)	ʔihiʔ	hiʔ=
2pl	yɔn	yɔn=
3sg	yəh	yəh=
3pl	ʔigən	gən=

Table 6: Personal pronouns and bound person forms in Jah-Hut (Diffloth 1976: 86f.)

- Similar to Semelai, the bound forms co-occur with overt subjects/agents; crucially, verbs occupy a position to the right of the negation *hət*:

- (16) a. cweʔ yəh=mʔmus
 dog 3SG=growl
 ‘The dog growls.’
- b. ʔiwãʔ nin hət yəh=srəʔ
 child this NEG 3SG=know
 ‘The child does not know.’
- c. ʔihãh hət hãh=srəʔ
 I NEG 1SG=know
 ‘The child does not know.’
 (Temiar; Diffloth 1976: 86)

- Summing up: Various Aslian SVO languages seem to have developed bound prefixal/proclitic person marking on the verb. Despite the fact that the resulting agreement systems count as rich, the languages in question do not display verb movement to the left of negation.
- At least at first sight, the data are problematic for both the strong and the weak RAH; however, the findings seem to be compatible with the idea that V-to-I is linked to the richness of tense marking (the Aslian languages lack synthetic tenses).
- Unclear: Is there a major syntactic difference between prefixal agreement and suffixal agreement? (cf. e.g. Julien 2002 who assumes (basically following Kayne 1994) that only suffixes involve movement of the verb to a functional head, whereas prefixes do not form a syntactic constituent with the element they attach to (prefix and host are merely linearly adjacent in the syntax, but are treated as a word by the phonological component)).

4.2 Syntactic change without morphological change: The rise of SVO in Lithuanian

- Traditional hypothesis: Basic OV is linked to rich case morphology; loss of case distinctions gives rise to basic VO (cf. e.g. Sapir 1921, Vennemann 1975, Roberts 1997).¹⁷
- Diachronic case study: Lithuanian
- Lithuanian is one of the most conservative (European) IE languages and has preserved a rich array of nominal and verbal inflections.
- Standard Lithuanian: 5 declension classes, 7 morphologically distinct cases (nominative, genitive, dative, accusative, instrumental, locative, vocative)¹⁸, and fully distinct verbal agreement morphology (Ambrasas 1997):

<i>brólis</i> ‘brother’	Singular	Plural
Nom.	brólis	bróliai
Gen.	brólio	brólių
Dat.	bróliui	bróliams
Acc.	brólį	brólius
Instr.	bróliu	bróliais
Loc.	brólyje	bróliuose
Voc.	bróli	bróliai

Table 7: Case in Stand. Lithuanian ((i)a-declension, 3rd paradigm; Ambrasas 1997: 111)

- Still, the language has been undergoing a major word order change in its recent recorded history (basic SOV → basic SVO, cf. e.g. Reklaitis 1980, Hock 1991: 374).
- At least until the early 20th century, Lithuanian was commonly described as a basic SOV language (with a number of additional word order options linked to information-structural distinctions, emphasis etc.).¹⁹

“Die ESt [Endstellung] des Verbuns im Lit. ist bei weitem die häufigste, sie läßt die beiden anderen Stellungsarten an Häufigkeit weit hinter sich. Sie muß daher als die habituelle bezeichnet werden.” (Schwentner 1922: 20)

‘In Lithuanian, final position of the verb is by far the most common option. It is much more frequent than other word order options and should therefore be identified as the habitual one.’

¹⁷ Well-known exceptions include: SVO/rich case morphology (Icelandic), SOV/poor case morphology (Dutch and Afrikaans, which provide additional examples of morphological change (loss of case morphology) without or with delayed syntactic change).

¹⁸ Note that the paradigm in table 3 exhibits only a single syncretism (voc. pl. = nom.pl.). In other paradigms of the (i)a-declension (e.g., *vyras* ‘man’), the vocative singular falls together with the locative. Certain dialects of Lithuanian display even richer case systems with additional forms for inessive (‘in’) and illative (‘into’) (Eastern High Lithuanian), or adessive (‘at’) and allative (‘toward’) (Belorus dialects), cf. Ambrasas (2007: 106).

¹⁹ Lithuanian provides an interesting case for the investigation of word order change in progress. The reasons for the (ongoing) change in basic word order remain unclear. Reklaitis (1980) claims that the transition from SOV to SVO already began in Old Lithuanian, where according to her counts SVO is already twice as frequent as SOV (while in present-day texts SVO is more than five times more frequent). However, as her observations are based on a very small sample (less than 100 clauses for mod. Lithuanian, and even smaller numbers for Old Lithuanian), it is not clear whether any firm conclusions can be drawn on the basis of her observations. There are reasons to believe that the rise of basic SVO syntax was ‘a change from above’ guided by the work of normative grammarians such as Jonas Jablonskis (1860-1930) who played an influential role in the standardization of the language (based on the Aukštaitian dialect spoken in the Suvalkija region) in the 19th and 20th century.

- (17) bet vyrs su didžu nerimasczu pėtu czėos **laukė** **SOV**
 but the-man with great uneasiness lunch this awaited-PERF-3SG
 ‘but the man awaited lunchtime with great uneasiness’
 (Schwentner 1922: 20)

“Das Verbum steht im Nebensätze am Ende, wenn habituelle Wortstellung vorliegt. [...] Viel seltener tritt im Nebensätze MSt [Mittelstellung] des Verbums auf, und zwar nur okkasionell, wenn das Objekt betont ist und hinter das Verb tritt:“ (Schwentner 1922: 22f.)

‘In the embedded clause, the verb occurs in final position if habitual word order obtains. [...] A medial position of the verb is much rarer in the embedded clause; it occurs occasionally when the object is stressed and placed to the right of the verb.’

- (18) kad nėkados ir nėkados nei kokį pikta žodėlį prėsz **SOV**
 that never and never not any bad word-little to
 kits kitą **nepasisakydavo**
 each other NEG-said-FREQ-3PL
 ‘that they never said a mean word to each other’
 (Schwentner 1922: 22)

- (19) kad laumė **prigavo** ju sescri **SVO**
 that the-elf caught her sister
 ‘that the elf caught her sister [lying]’
 (Schwentner 1922: 23)

- Present-day (Standard) Lithuanian: Standard descriptive works identify SVO as the basic word order (with multiple additional orders dependent on the information-structural status of the constituents of the clause), cf. e.g. Ambrazas (1997: ch. 5):²⁰

“Under these circumstances [thematic subject and rhematic object/VP] the neutral word order is SVO which is also the basic word order in Standard Lithuanian [...] The SVO sequence is prevalent in the official styles of Standard Lithuanian. If the object is placed before the verb (SOV) it sometimes receives more emphasis [...]” (Ambrazas 1997: 695)

- (20) a. Vaikai **suvalgė** [visus obuolius].
 the-children-NOM eat-PERF-3PL all apples-ACC
 ‘The children have eaten all the apples.’
 b. Vaikai [visus obuolius] **suvalgė**.
 ‘The children have eaten all the apples.’

“However, the (S)OV sequence is not always stylistically marked: in many cases SVO and SOV alternate without any marked difference. Moreover, SOV is neutral and more common in a number of cases, especially if the object is a pronoun [...]” (Ambrazas 1997: 695)

²⁰ In the unmarked/neutral order, the theme typically precedes the rheme (which preferably occupies the sentence-final position) in Lithuanian. Marked information structure (e.g. rhematic subjects and/or thematic objects) typically leads to permutations of word order (VSO, OVS etc.).

- SOV order is triggered by certain grammatical and extra-grammatical factors (cf. Ambrazas 1997: 695). Especially contexts ii. and iii. suggest that SOV is the more ancient word order option.
 - i. Object pronouns usually precede the (finite) verb (similar to French)
- (21) Visas miėstas manė **geřbė**.
 the-whole town me respected
 ‘The whole town respected me.’
 - ii. SOV is the dominant order in certain constructions (set phrases, in particular; see also Franks & Lavine 2007 on infinitival constructions)
- (22) a. Pirmi gaidžiaĩ vėlniā **baĩdo**.
 the-first roosters the-devil scare
 ‘Early roosters scare away the devil.’
 - b. Dėrbas dėrba vėja.
 work-NOM work-ACC chase
 ‘Work chases work.’ (i.e., ‘There is too much work.’)
- iii. In dialects and spoken/colloquial varieties, SOV is still more common than SVO.

The rise of SVO and the RAH

- Given the rich verbal inflection of Lithuanian, we should perhaps expect the verb to occur to the left of negation and adverbs in SVO patterns. As will be shown shortly, this expectation is not borne out by the facts.
- Verbal inflection: three conjugations (marked by thematic vowels *-a*, *-i*, *-o*), rich person and number agreement, four different synthetic tenses (present, past, frequentative past (‘used to V’), future), four moods, rich system of participles (13 different forms) conveying aspectual differences.

dirbti ‘to work’	Present	Past	Past freq.	Future
1sg	dirb-u	dirb-a-u	dirb-dav-a-u	dirb-s-i-u
2sg	dirb-i	dirb-a-i	dirb-dav-a-i	dirb-s-i
3sg	dirb-a	dirb-o	dirb-dav-o	dirb-s
1pl	dirb-a-me	dirb-o-me	dirb-dav-o-me	dirb-s-i-me
2pl	dirb-a-te	dirb-o-te	dirb-dav-o-te	dirb-s-i-te
3pl	dirb-a	dirb-o	dirb-dav-o	dirb-s

Table 8: Tense and agreement marking on verbs in Lithuanian (1st conjugation)

Diagnostics for verb movement 1: Position of the verb relative to negation

- At first sight, negation does not seem to be a good indicator of verb position in Lithuanian: Sentences are negated by adding the prefix/particle *ne* to the verb (*ne* accompanies verb movement, e.g. to clause-initial position in inversion contexts).
- However, to intensify negation, the particle *nė/neĩ* can be added. *nė/neĩ* can be placed either before the verb, cf. (23a) or before any other constituent, cf. (23b) (Ambrazas 1997: 671f.).

- (23) a. Mokytoja **nė/nei** nepažvelgė į sąsiuvinį.
 the-teacher NEG NEG-glanced at the-copybook
 ‘The teacher did not even glance at the copybook.’
 b. Jis nepajėgė daugiau **nė/nei** žodžio ištašti.
 he NEG-can more NEG word utter
 ‘He could not utter a single word.’ (lit. ‘He could not utter not a word more.’)

- If the added negator in cases like (23a) signals the position of NegP, then this might be taken to suggest that the verb does not move further than Neg⁰ in Lithuanian.
- Negative adverbs such as *niekadà* ‘never’ also precede the verb in the unmarked order (Ambrazas 1997: 673):

- (24) Táu niėkas **niekadà** nedārė jokių priėkaištų.
 you.DAT.SG nobody never NEG-make any reproaches
 ‘No one has ever reproached you for anything.’ (lit. ‘No one never did not make you no reproaches.’)

Diagnostics for verb movement 2: Position of the verb relative to adverbs

- “the neutral position of an adverbial of manner or an adjectival modifier is before a verb” (Ambrazas 1997: 690)
- “The *neutral* position of adverbs is immediately in front of the verb they qualify. This is above all the case with adverbs of manner” (Mathiassen 1996: 240)

- (25) a. Jie **gerai** dirba.
 he well works
 ‘He works well’
 (Mathiassen 1996: 240)
 b. Jis **aiškiai** pasākė
 he clearly said
 ‘He clearly said.’
 (Ambrazas 1997: 690)

- As a marked option, adverbs can also occur postverbally; however, “inverted” adverbs are typically interpreted as the rheme and receive stress/emphasis (Ambrazas 1997: 690, 699).
- In a similar vein, adverbial particles (typically rendered by adverbs in English) precede the verb (Ambrazas 1997: 701):

- (26) a. **dār** nemiėga
 yet NEG-sleep-3PL
 ‘(They) are not asleep yet.’
 b. **jaũ** atėjo
 already came-3SG
 ‘(He) has already come.’
 c. **bevėik** suprataũ
 almost understood-1SG
 ‘(I) almost understood.’
 d. **nėt** nežinaũ
 even NEG-know-1SG
 ‘(I) don’t even know.’

- e. **võs** jùda-3SG
hardly moves
'(He) hardly moves.'

- If the verb is modified by more than a single adverb, the verb is typically directly preceded by a manner adverb with other adverbs further to the left:

- (27) Jis **visadà ramiaĩ** miẽga.
he always quietly sleeps
'He always sleeps quietly.'
(Ambrazas 1997: 700)

- Conclusions/Lithuanian:
 - ❖ Basic word order change (SOV → SVO) without any changes affecting the exceptionally rich system of verbal and nominal inflections.
 - ❖ In SVO orders, the verb preferably occurs to the right of negation and (low) adverbs, which are commonly used as diagnostics for verb movement: **Problem for all version of the RAH (strong or weak)**
 - ❖ Due to the overall richness of verbal inflections (including tense), Lithuanian is also a problem for the idea that verb movement is linked to other inflectional categories such as Tense (Biberauer & Roberts 2010).

4.3 (Morpho-)Syntactic change against morphological evidence?

- There are cases where syntactic change seems to have taken place despite apparent morphological counterevidence, necessitating a reinterpretation of the morphological marking, which typically leads to complications in the morphology of a language, or mismatches between syntax and morphology (cf. e.g. Anderson 1980, Cole et al. 1980, Disterheft 1987).
- Well-known cases (see the appendix for details):
 - ❖ Development of ergative alignment via a reanalysis of passives (reinterpretation of passive morphology and oblique case on the agent as marks of a transitive construction; Anderson 1977, 1980, Chung 1978):
 - ❖ Development of quirky subjects in Germanic (despite oblique case marking on the DP, cf. e.g. Cole et al. 1980, Disterheft 1987)

“the reinterpretation of a syntactic structure as a more ‘basic’ one, and of the morphological marks of the original construction as simply formal baggage, is motivated [...] by the development of opacity in the syntactic structure involved. [...] whatever morphological peculiarities the surface construction exhibits will be associated with the meanings or range of meanings that it conveys, rather than with the (unmotivated) non-basic character of the structure” (Anderson 1980: 59f.)

4.3.1 The rise of person agreement and accusative alignment

- Observation: Cross-linguistic preference for nom./acc. alignment in connection with bound person markers (=person agreement markers):

Alignment type	Independent/free forms		Dependent/bound forms	
	N=386	%	N=402	%
Neutral	164	42.5	78	19.4
Accusative	165	42.7	231	57.5
Ergative	44	11.4	17	4.2
Active	3	0.8	26	6.5
Tripartite	2	0.5	0	0
Hierarchical	0	0	9	2.2
Split	8	2.1	41	10.2

Table 9: Alignment of independent and dependent person forms (Siewierska 2004: 53)

- Diachronic explanation: Bound person markers commonly develop in connection with highly topical/accessible discourse referents (cf. e.g. Ariel 2000), which in most languages are primarily associated with subjects (i.e., S and A arguments), Siewierska (1999, 2004: 56f.).
- There are languages such Tauya (Madang, Papua New Guinea) which have developed a ‘mixed’ system of alignment: Case marking works in an ergative/absolutive fashion, while (person) agreement cross-references subjects (S & A, via suffixes) and (direct) objects (P, via prefixes) – obviously a morphosyntactic complication:

- (28) a. Ne-ni **na**-yau-**a**-ʔa
 he-ERG **2SG**-see-**3SG**-IND
 ‘He saw you.’
- b. Ne momune-**a**-ʔa
 he:ABS sit-**3SG**-IND
 ‘He sat.’
- c. Ne Ø-aʔate-**I**-ʔa
 he:ABS **3SG**-hit-**3PL**-IND
 ‘They hit him.’
 (Tauya, Siewierska 2004: 53)

- Thus, it seems that nominative/accusative person agreement can develop despite an overall ergative organization of argument encoding.
- Obviously, the rise of agreement that works in a nom./acc. fashion is intimately linked to the reanalysis of personal pronouns as bound person markers, which seems to directly affect the type of alignment.
- Another relevant example comes from the Lezgian (Northeast Caucasian) language Tabasaran (Harris 1994, Babaliyeva 2013). Tabasaran exhibits ergative alignment (via case marking) with nominal arguments and neutral alignment with pronominal arguments (A=S=P).
- However, Tabasaran has innovated 1st and 2nd person marking on the verb via a system of enclitics/suffixes (basically reduced forms of the full pronouns):²¹

²¹ Tabasaran has additional pronouns/clitics for a large number of ‘prepositional’ cases expressing direction, comitative etc. (see Babaliyeva 2013 for details).

	1sg		2sg		1pl.excl.		1pl.incl.		2pl	
Abs	uzu	-zu/ -za	uvu	-vu/ -va	uču	-ču/ -ča	uxhu	-xhu/ -xha	učvu	-čvu/ -čva
Erg	uzu	-za	uvu	-va	uču	-ča	uxhu	-xha	učvu	-čva
Gen	yiz	-yiz/ -iz	yav	-yav/ -av	ič	-yič/ -ič	ixh	-yixh/ -ixh	ičv	-yičv/ -ičv
Dat	uzuz	-zuz	uvuz	-vuz	učuz	-čuz	uxhuz	-xhuz	učvuz	-čvuz
Loc	uzuxh	-zuxh	uvuxh	-vuxh	učuxh	-čuxh	uxhuxh	-xhuxh	učvuxh	-čvuxh

Table 10: Personal pronouns and clitics in Tabasaran (Babaliyeva 2013: 199f.)

- The person enclitics display nominative/accusative alignment:

	1sg	2sg	1pl.excl.	1pl.incl.	2pl
A	-za	-va	-ča	-xha	-čva
S, +agentive	-za	-va	-ča	-xha	-čva
S, -agentive	-zu	-vu	-ču	-xhu	-čvu
P	-zu	-vu	-ču	-xhu	-čvu

Table 11: Nominative/accusative alignment with person enclitics in Tabasaran (Babaliyeva 2013: 200)

(29) uzu yiz rāq davam ap'-ur-za.
 1SG(A) 1SG.GEN way continuation do-EVT-1SG.A
 'I will continue my way.'
 (Babaliyeva 2013: 200)

(30) hamus äxü bab.a-xhna ġäğ-ür-za.
 now grand grandmother-ADLAT go-EVT-1SG.S (=A)
 'Now, I will go to my grandmother.'
 (Babaliyeva 2013: 203)

- As shown by (30), the agreement markers license pro-drop; overt pronouns may be added for emphasis.
- Only 1st and 2nd person arguments are cross-referenced on the verb; bound person markers are obligatory with subjects (S and A); with experiencer datives they are used frequently, with all other grammatical functions they are optional (Babaliyeva 2014: 214).
- Patient marking occurs with 3rd person agents as in (31), or in combination with 1sg agent marking as in (32) (see Babaliyeva 2013 for restrictions on combined marking of agent+object/oblique object).

(31) saban uzu adaš-di ča-qhdi Mahačğala.yi-z
 once 1SG(P) father-ERG self.OBL-POSTCOM Makhachkala-DAT
 qhadi ġu-x-zu.
 with AOR-carry.AOR-1SG.P
 'Once, my father took me to Makhachkala.'
 (Babaliyeva 2013: 201)

(32) uzu uvu yik'-ur-za-vu.
 1SG(A) 2SG(P) kill-EVT-1SG.A-2SG.P
 'I will kill you.'
 (Babaliyeva 2013: 210)

- Agreement marking for subjects of intransitive verbs shows some sensitivity to thematic properties: the sole argument of a small number of [–agentive] verbs such as ‘to fall (down)’, ‘to be tired’, or ‘to tremble’ is cross-referenced by the same marker that is used for patients:

(33) uzu aqh-ra-zu.
 1SG(S) fall-PRS-1SG.S (=P)
 ‘I fall down.’
 (Babaliyeva 2013: 204)

- However, the majority of intransitive verbs (including the copula) take the same person marker that is used for A, i.e., subjects of transitive verbs, cf. (30) above.
- In clauses without ergative/absolutive-marked nominal arguments, marking of syntactic functions is solely accomplished via verbal agreement and works in a nominative/accusative fashion.
- Upshot: Development of person agreement via reanalysis of S/A clitics as a pathway to accusative alignment – despite morphological evidence signaling ergative alignment (see also Schulze 1998 on the Caucasian languages more generally, Bynon 1980 on Southern Kurdish languages, and Cysouw 2003 on a set of Austronesian languages spoken in Sulawesi).

5. Concluding summary

- In many cases, morphological change and syntactic change do not go hand in hand:
 - ❖ Morphological change without or with delayed syntactic change (Danish, French)
 - ❖ Syntactic change without or with delayed morphological change (English, Lithuanian)
 - ❖ Rise of inflectional morphology without or with delayed syntactic change (Aslian languages)
 - ❖ Syntactic change despite conflicting morphological evidence (morphology as “formal baggage”: reanalysis of passives as active ergative constructions, rise of quirky subjects, change of alignment (ergative ⇒ nominative-accusative))
- Morphological triggers of verb movement (V-to-I): Agreement alone seemingly does not do the trick; at least for cases like English, French, and possibly Scandinavian, it is perhaps more promising to link verb movement to other categories such as tense/aspect/mood morphology (cf. e.g. Biberauer & Roberts 2010, Haeberli & Ihsane 2015), or the combined ‘richness’ of various types of verbal inflections (Holmberg & Roberts 2013).
- Still, cases like Lithuanian remain problematic for any attempt to construe a morphological trigger for verb movement.
- There must be triggers of syntactic change independent of morphology (e.g., syntactic opacity leading to reanalysis of both syntax and morphology, cf. Anderson 1980, Fischer 2000).
- More work is needed to understand the syntactic effects of grammaticalization processes giving rise to new (and rich) inflections (cf. e.g. Roberts & Roussou 2003).
- Still, it seems to be clear that there *is* some tradeoff relation between syntax and morphology – languages with rich inflectional morphology often exhibit syntactic properties not shared by languages with poor inflectional morphology; over time, a change in one component often leads to changes in the other etc.

- However, this does not necessarily entail a direct connection between morphology and syntax; the observed correlations may also be the reflex of historical developments (for related considerations cf. e.g. Alexiadou & Fanselow 2002 and McWhorter 2005, ch. 12):²²
 - ❖ Morphological change may reduce the evidence for (or practical functionality of) a certain kind of syntactic system (i.e., a combination of parameter settings), which in the long run may lead to a bias against the acquisition of certain syntactic properties – either because adult speakers tend to avoid syntactic strings that express the older setting (e.g. scrambling after the loss of case morphology), or because the loss of inflections opens up the possibility of a new grammar that parses the input more successfully than the older competitor and gradually spreads in a speaker community (cf. e.g. Heycock & Wallenberg 2013 on the loss of verb movement in Scandinavian).
 - ❖ The loss of a certain encoding option may exert a functional pressure that over time may lead to the emergence of alternative coding options (e.g., fixed SVO word order instead of case marking).
 - ❖ The loss of discourse-pragmatic functions linked to a certain syntactic pattern *S* may lead to syntactic opacity and ultimately the loss of *S* (independent of *M*).
- This state of affairs seems to sit more comfortably with approaches that posit a less tight relation between syntax and morphology and allow more leeway in the diachronic transition from one grammar to another.

²² Under the assumption that the learner is conservative it is actually quite unlikely that the loss of a certain trait is immediately compensated by another change that leads to an output that further deviates from the target grammar (though there may be exceptions, reanalysis, in particular).

Appendix: Syntactic change against morphological evidence – further examples

A.1 Passive → Ergative

- The development of ergative alignment via a reanalysis of former passive structures is a well-known example of syntactic change leading to a reinterpretation of morphological marking and an apparent mismatch between syntax and morphology (cf. e.g. Anderson 1977, Chung 1978, Anderson 1980).
 - Proto-Polynesian (nominative/accusative, Chung 1978):
 - i. subjects of transitives and intransitives were unmarked;
 - ii. (direct) objects of transitives were marked with 'i 'ACC'
 - iii. thematic objects could be promoted to grammatical subjects (passive); demoted subjects were marked with (oblique) 'e, the passive morpheme on the verb was (C)ia
 - Modern Tongan (ergative/absolute):
 - i. intransitive subjects are marked with 'a, transitive subjects are marked with 'e.
 - ii. objects of transitive verbs are marked with 'a.²³
 - iii. no passive/active distinction; many transitive verbs end in (C)ia.
- (34) a. na'e fana'i 'e Sione 'a Mele
 PAST shoot ERG John ABS Mary
 'John shot Mary.'
- b. na'e 'alu 'a Sione ki he ako
 PAST go ABS John to DEF school
 'John went to school.'
- (Otsuka 2000:16)
- Chung (1978), Anderson (1980): The Tongan system of ergative alignment has arisen by a major reanalysis and generalization of the former passive at the expense of the active.²⁴
 - i. The former demoted agent has been reinterpreted as the subject of an active transitive clause.
 - ii. The former grammatical subject has been interpreted as the object.
 - iii. The morphology has been reinterpreted accordingly (as the mark of a transitive construction).
 - Result – morphological ergativity: The ergative NP displays the syntactic properties of a grammatical subject (control, raising, subject deletion in coordination structures etc., cf. Chung 1978); however, the morphology does not reflect the syntactic organization of the clause in modern Tongan, but rather the syntax of the former passive construction.²⁵

²³ The origin of the absolute marker 'a is not entirely clear. Clark (1976) speculates that it developed from an earlier personal/pronominal article *a.

²⁴ It is usually assumed that the reanalysis came about when due to its frequent use, the derived status of the passive became opaque to the learner.

²⁵ Cases where the reanalysis of passive structures has affected only a part of the transitive structures, giving rise to split ergativity (as e.g. Hindi or Georgian) are even more striking examples, since they involve less opacity on the morphological side (since case markers retain their original functions in other contexts). So Anderson (1980: 60) is perhaps right when he speculates that transitive surface structures in which the agent is not the grammatical subject and the theme/patient is not the grammatical object "must have a motivation in the syntax of the language." If this motivation is obscured by other changes, the derived structure in question becomes opaque and is in turn reanalyzed in terms of a more basic transitive structure, with existing morphology being reinterpreted as mark of the new meaning/structure.

A.2 The rise of quirky subjects in North Germanic

- Cole et al. (1980) argue that syntactic subject properties (e.g. control, raising, reflexivization) are acquired historically prior to the morphological encoding of subjecthood (via case and agreement).
- Rise and loss of (morphological) ergativity as a case in point: Former oblique agents acquire syntactic subject properties, but retain the case and/or agreement marking of oblique forms. At a later stage, the morphology may undergo further changes that eventually lead to nominative/accusative alignment (cf. e.g. Bynon 1980 on Kurdish, Cysouw 2003 on languages of Sulawesi, Schulze 1998 on Caucasian languages, see also below)
- Further example: Quirky subjects in (North) Germanic (Cole et al. 1980: 721ff.)
- Based on evidence from Gothic, Cole et al. argue that Early Germanic did not display dative subjects; they consider it to be an innovation of the North Germanic branch.
- Old Icelandic exhibits quirky subjects, non-nominative arguments which have acquired syntactic subject properties (despite dative case marking).²⁶

(35) honum_i þóttir þú hafa haft við sik_i fjorrað.
 him seemed-2sg you have had with self death-plot
 ‘He thought you to have had a death plot against him.’
 (Cole et al. 1980: 722)

- Cole et al.: In subsequent historical stages of Icelandic, the contexts in which quirky subjects are possible have been extended; in contrast, quirky subjects have been lost in other Scandinavian languages (apart from Faroese).²⁷
- Interpretation (Cole et al. 1980: 730):

“A clear trend toward the extension of behavioral properties – and later, toward the acquisition of coding properties – appears in North Germanic. The only hypothesis consistent with the full range of Germanic data presented above is one which holds that, in the parent language, the NP’s in question had no subject properties. Subsequently, first behavioral and then coding properties were acquired by these NP’s in some of the daughter languages.”

A.3 Possession in Chickasaw

- Expression of possession in Chickasaw (Muskogean, Anderson 1980):

(36) [Hattuk at] [ofi’ at] imaya’sha
 man SBJ dog SBJ him-it-be there, have
 ‘The man has a dog.’
 (Anderson 1980: 54)

²⁶ See Sigurðsson (1983), Rögnvaldsson (1991), and Fischer (2010) for a fuller discussion of relevant tests and the status of quirky subjects in Old Icelandic.

²⁷ However, in the present-day language, there seems to be an ongoing change leading to the decline of quirky subjects (cf. e.g. Eythórsson 2000).

- Special properties of the construction:
 - i. In contrast to other sentence types, both subject ('man') and object ('dog') carry the subject marker *at*.
 - ii. The agreement marker used to cross-reference the subject ('man') on the verb (*im-*) belongs to the 'oblique' set of agreement markers, used to mark indirect objects, benefactives, and the oblique objects of a few verbs such as 'love'.
 - iii. Special verb meaning and form: *aya'sha* 'to have' stems from the paradigm of a verb meaning 'to be at some place, to exist'. Furthermore, it is clearly a plural form, although neither *hattuk* nor *ofi* are plural in (25).
- Anderson's Analysis: The present-day possession construction in Chickasaw developed from a construction in which the possessor was an oblique NP, whereas the possessed element was the formal subject. The verb was a copula or existential, literally 'a dog exists for the man' (cf. coll. German *Der Hund ist mir* 'the dog is me-DAT').
- At some point, the oblique construction was reanalyzed as a transitive construction with the possessor as subject and the possessee as object; the plural form of the locative/existential verb (*aya'sha*) became specialized in the sense of possession.
- In the present-day language the possessor is accordingly marked as the subject, but in addition, the possessee still carries the subject marker reflecting the source construction.
- Although the former oblique construction was still indicated by the morphology, this was not sufficient to block the reanalysis. Instead, the morphology formerly associated with the oblique construction was reinterpreted as a special feature of the possessive sense of *aya'sha* without any connection to the syntax of the construction.
- Anderson speculates that this change became possible when the plural verb form *aya'sha* became linked to possession; this semantic shift dissociated the verb form from the locative/existential paradigm and rendered the former oblique structure opaque to the learner.²⁸
- Summing up:

“The cases we have been discussing present an interesting situation: they are precisely those in which a grammar-constructor has a free choice between a strictly morphological and a strictly syntactic account of the same data. The fact that reanalysis seems to favour the rationalization of the syntax at the expense of complicating the morphology should probably be taken to have some importance for the construction of an evaluation procedure for grammars.” (Anderson 1980: 67)

²⁸ Another pathway leading to multiple subjects is discussed in Bynon (1980: 156). In the southern Kurdish language Mukri, both the agent and the patient are marked by nominative with transitive verbs in the past tense:

(i) kurākā aṅgustīlākā=i haḡirt
 son-the.NOM ring-the.NOM=he took.3SG
 ‘The son took the ring.’

According to Bynon, structures like (i) came into existence via a reanalysis of passive sentences in which another element had been topicalized: The patient carries nominative in virtue of being the subject of the former passive structure, while the nominative agent developed from a (hanging) topic (in the unmarked citation form) that was reanalyzed as the subject of the clause (along the lines proposed by Givón 1976). Again, it seems that conflicting morphological evidence did not prevent the syntactic reanalysis in question.

References

- Alexiadou, Artemis and Gisbert Fanselow. 2002. On the correlation between morphology and syntax: The case of V-to-I. In *Studies in Comparative Germanic Syntax*, J.-W. Zwart and W. Abraham (eds.), 219-242. Amsterdam: John Benjamins.
- Allen, Cynthia. 1995. *Case Marking and Reanalysis: Grammatical Relations from Old to Early Modern English*. Oxford: Clarendon.
- Ambrazas, Vitaudas (ed.). 1997. *Lithuanian Grammar*. Vilnius: Baltos lankos.
- Anderson, Stephen R. 1977. On mechanisms by which languages become ergative. In *Mechanisms of Syntactic Change*, C. N. Li (ed.), 317-363. Austin: University of Texas Press.
- Anderson, Stephen R. 1980. On the development of morphology from syntax. In: J. Fisiak (ed.), *Historical Morphology*, 51-69. Berlin: Mouton de Gruyter.
- Ariel, Mira. 2000. The development of person agreement markers: from pronoun to higher accessibility markers. In: S. Kemmer and M. Barlow (eds.), *Usage-based Models of Language*, 197-261. Stanford: CSLI.
- Ashby, William. 1977. *Clitic Inflection in French: An Historical Perspective*. Amsterdam: Rodopi.
- Auger, Julie. 1993. More evidence for verbal agreement marking in Colloquial French. In W. J. Ashby, M. Mithun, G. Perissinotto & E. Raposo (eds.), *Linguistic Perspectives on the Romance languages*, 177-98. Amsterdam: John Benjamins.
- Auger, Julie. 1994a. *Pronominal clitics in Quebec Colloquial French: A morphological analysis*. PhD dissertation, University of Pennsylvania (IRCS report 94-29).
- Auger, Julie. 1994b. On the nature of subject clitics in Picard. In M. L. Mazzola (ed.), *Issues and Theory in Romance Linguistics*, 159-179. Washington, DC: Georgetown University Press.
- Auger, Julie. 2003. Pronominal clitics in Picard revisited. In R. Núñez-Cedeño, L. López & R. Cameron (eds.), *A Romance Perspective on Language Knowledge and Use*, 3-20. Amsterdam: Benjamins.
- Axel, Katrin. 2007. *Studies on Old High German Syntax: Left Sentence Periphery, Verb Placement and Verb-Second*. Amsterdam: John Benjamins
- Babaliyeva, Ayten. 2013. Études sur la morphosyntaxe du tabasaran littéraire. Doctoral dissertation, École Pratique des Hautes Études, Paris.
- Benjamin, Geoffrey. 2016. A new outline of Temiar grammar, part I. Ms., Nanyang Technological University, Singapore.
- Biberauer, Theresa and Ian Roberts. 2010. Subjects, tense and verb-movement. In: Theresa Biberauer, Anders Holmberg, Ian Roberts, and Michelle Sheehan (eds.), *Parametric Variation: Null Subjects in Minimalist Theory*, 263-302. Cambridge: Cambridge University Press.
- Bobaljik, Jonathan. 2003. Realizing Germanic inflection: why morphology does not drive syntax. *Journal of Comparative Germanic Linguistics* 6.2: 129-167.
- Burenhult, Niclas. 2002. *A Grammar of Jahai*. Lund: Department of Linguistics and Phonetics, Lund University.
- Busse, Ulrich. 2002. *Linguistic Variation in the Shakespeare Corpus. Morpho-syntactic Variability of Second Person Pronouns*. Amsterdam: John Benjamins.
- Bynon, Theodora. 1980. From passive to active in Kurdish via the ergative construction. In: E. Traugott, R. Labrum, and Susan Shepherd (eds.), *Papers from the 4th International Conference on Historical Linguistics*, 151-163. Amsterdam: Benjamins.
- Chung, Sandra. 1978. *Case Marking and Grammatical Relations in Polynesian*. Austin: University of Texas Press.
- Clark, Ross. 1976. *Aspects of Proto-Polynesian Syntax*. Auckland: Linguistic Society of New Zealand.
- Cole, Peter, Wayne Harbert, Gabriella Hermon & S.N. Sridhar. 1980. The acquisition of subjecthood. *Language* 56, 719-743.
- Cysouw, Michael. 2003. From pronouns to agreement (and back again) – The Sulawesi case. Paper presented at the symposium *Grammatikalisierung: Wege von der Performanz zur Kompetenz*. FU Berlin, 28.-29.11.2003.
- De Cat, Cécile. 2005. French subject clitics are not agreement markers. *Lingua* 115, 1195-1219.
- Diffloth, Gérard. 1976. Jah-Hut: an Austroasiatic language of Malaysia. In: Nguyen Dang Liem (ed.), *South-East Asian Linguistic Studies* Vol. 2, 73-118. Canberra: Pacific Linguistics.
- Disterheft, Dorothy. 1987. The diachronic relationship of morphology and syntax. In: A. Giacalone Ramat, O. Carruba and G. Bernini (eds.), *Papers from the VIIth International Conference on Historical Linguistics*, 211-220. Amsterdam: Benjamins.
- Ellegård, Alvar. 1953. *The Auxiliary Do: The Establishment and Regulation of its Use in English*. Stockholm: Almqvist and Wiksell.
- Eythórsson, Thórhallur. 2000. Dative vs. Nominative: Changes in Quirky Subjects in Icelandic. *Leeds Working Papers in Linguistics and Phonetics*, eds. D. Nelson & P. Foulkes, 27-44.
[<http://www.leeds.ac.uk/linguistics/index1.htm>]
- Falk, Cecilia. 1993. Non-referential subjects and agreement in the history of Swedish. *Lingua* 89, 143-180.

- Ferraresi, Gisella. 2005. *Word Order and Phrase Structure in Gothic*. Leuven: Peeters.
- Fischer, Susann. 2010. *Word-Order Change as a Source of Grammaticalisation*. Amsterdam: John Benjamins.
- Fonseca-Greber, Bonnie. 2000. *The Change from Pronoun to Clitic to Prefix and the Rise of Null Subjects in Spoken Swiss French*. Doctoral dissertation, University of Arizona, Tucson.
- Fonseca-Greber, Bonnie. 2004. Zero marking in French impersonal verbs: a counter trend to clitic morphologization. *Berkeley Linguistics Society: Proceedings of the Annual Meeting*, no. 30, 81-92.
- Fonseca-Greber, Bonnie and Linda R. Waugh. 2003. The subject clitics of Conversational European French: Morphologization, grammatical change, semantic change, and change in progress. In R. Núñez-Cedeño, L. López, and R. Cameron (eds.), *A Romance Perspective on Language Knowledge and Use*, 99-117. Amsterdam: Benjamins.
- Friedemann, Marc-Ariel. 1997. *Sujets Syntaxiques: Positions, Inversions et pro*. Frankfurt: Peter Lang.
- Franks, Steven & James E. Lavine. 2007. Case and word order in Lithuanian. *Journal of Linguistics* 42, 239-288.
- Gerlach, Birgit. 2002. *Clitics between syntax and lexicon*. Amsterdam: John Benjamins.
- Givón, Talmy. 1976. Topic, pronoun, and grammatical agreement. In: C. N. Li (ed.), *Subject and Topic*, 149-188. New York: Academic Press.
- Greenberg, Joseph. 1963. Some universals of grammar with particular reference to the order of meaningful elements. In: J. Greenberg (ed.), *Universals of Grammar*, 73-113. Cambridge, Mass.: The MIT Press.
- Haeberli, Eric. 1999. *Features, categories and the syntax of A-positions. Synchronic and diachronic variation in the Germanic languages*. Doctoral dissertation, University of Geneva.
- Haeberli, Eric. 2004. Syntactic effects of inflectional morphology and competing grammars. In *Diachronic Clues to Synchronic Grammar*, E. Fuß and C. Trips (eds.), 101-130. Amsterdam: John Benjamins.
- Haeberli, Eric & Tabea Ihsane. 2014. On the interaction between Syntax and Morphology: New evidence from the loss of verb movement in English. In: *Travaux du 19ème CIL/19th ICL Papers*, Département de linguistique de l'Université de Genève. <http://www.cil19.org/uploads/documents/Onthe-Interaction-between-Syntax-and-Morphology-New-Evidence-from-the-Loss-of-Verb-Movementin-English.pdf>.
- Haeberli, Eric & Tabea Ihsane. 2015. Revisiting the loss of verb movement in the history of English. To appear in *Natural Language and Linguistic Theory*.
- Harris, Alice. 1994. Ergative-to-accusative shift in agreement: Tabassaran. *Linguistic Studies in the Non-Slavic Languages of the Commonwealth of Independent States and the Baltic Republics (NSL 7)*, ed. by Howard I. Aronson, 113-131. Chicago: Chicago Linguistic Society.
- Harris, Martin. 1978. *The Evolution of French Syntax. A Comparative Approach*. London: Longman.
- Heycock, Caroline & Joel Wallenberg. 2013. How variational acquisition drives syntactic change. The loss of verb movement in Scandinavian. *Journal of Comparative Germanic Linguistics* 16, 127-157.
- Heycock, Caroline and John Sundquist. 2016. Revisiting the RAH in light of diachronic data from the history of Danish. Paper presented at the annual DGfS meeting, University of Konstanz.
- Hock, Hans H. 1991. *Principles of Historical Linguistics* (2nd ed.). Mouton de Gruyter.
- Holmberg, Anders and Christer Platzack. 1988. On the role of inflection in Scandinavian syntax. *Working Papers in Scandinavian Syntax* 42, 25-42.
- Holmberg, Anders and Christer Platzack. 1995. *The Role of Inflection in Scandinavian Syntax*. Oxford: Oxford University Press.
- Holmberg, Anders and Ian Roberts. 2013. The syntax-morphology relation. *Lingua* 130, 111-131.
- Hope, Jonathan. 1993. Second person singular pronouns in records of Early Modern spoken English. *Neuphilologische Mitteilungen* 94:83-100.
- Julien, Marit 2002. *Syntactic Heads and Word Formation*. Oxford: Oxford University Press.
- Kayne, Richard. 1994. *The Antisymmetry of Syntax*. Cambridge, Mass.: MIT Press.
- Kemenade, Ans van. 1987. *Syntactic case and morphological case in the history of English*. Dordrecht: Foris.
- Kiparsky, Paul. 1996. "The shift to head-initial VP in Germanic." In *Studies in Comparative Germanic syntax II*, H. Thráinsson, S.D. Epstein and S. Peter (eds.), 140-179. Dordrecht: Kluwer.
- Kiparsky, Paul. 1997. "The rise of positional licensing." In *Parameters of Morphosyntactic Change*, A. van Kemenade and N. Vincent (eds.), 460-493. Cambridge: Cambridge University Press.
- Koenenman, Olaf. 2000. The flexible nature of verb movement. Doctoral dissertation, Utrecht University. Utrecht: LOT Publications.
- Koenenman, Olaf & Hedde Zeijlstra. 2014. The Rich Agreement Hypothesis rehabilitated. *Linguistic Inquiry* 45.4, 571-615.
- Kosmeijer, Wim. 1986. The status of the finite inflection in Icelandic and Swedish. *Working Papers in Scandinavian Syntax* 26, 1-41.
- Kruspe, Nichola. 2004. *A Grammar of Semelai*. Cambridge: Cambridge University Press.
- Lambrecht, Knud. 1981. *Topic, Antitopic and Verb-Agreement in Non-Standard French*. Pragmatics and beyond vol. II: 8. Amsterdam: John Benjamins.
- Lightfoot, David. 1979. *Principles of Diachronic Syntax*. Cambridge: Cambridge University Press.

- Lightfoot, David. 1991. *How to Set Parameters: Arguments from Language Change*. Cambridge, Mass.: MIT Press.
- Lightfoot, David. 1999. *The Development of Language: Acquisition, Change and Evolution*. Malden, Mass.: Blackwell.
- Mathiassen, Terje. 1996. *A Short Grammar of Lithuanian*. Indiana: Slavica Publishers.
- McWhorter, John. H. 2005. *Defining Creole*. Oxford: Oxford University Press.
- Mitchell, Eleanor R. 1971. Pronouns of address in English, 1580–1780: A study of form changes as reflected in British drama. Ph. D. thesis, Texas Agricultural and Mining University.
- Otsuka, Yuko. 2000. Ergativity in Tongan. PhD Thesis, Oxford University.
- Petrova, Svetlana, and Hinterhölzl, Roland. 2010. Evidence for two types of focus positions in Old High German. In: Gisella Ferraresi and Rosemarie Lühr (eds.), *Diachronic Studies on Information Structure: Language Acquisition and Change*, 189–217. Berlin: Mouton de Gruyter.
- Platzack, Christer. 1988. The emergence of a word order difference in Scandinavian subordinate clauses. *McGill Working Papers in Linguistics: Special Issue on Comparative Germanic Syntax*, 215-238.
- Platzack, Christer and Anders Holmberg. 1989. The Role of AGR and Finiteness. *Working Papers in Scandinavian Syntax* 43, 51–76.
- Reklaitis, Janine K. 1980. Reduction of case markers in Lithuanian: data for discussion. In: *Papers from the Fourth International Conference on Historical Linguistics*, edited by Elizabeth Closs Traugott, Rebecca Labrum and Susan C. Shepherd. Amsterdam: John Benjamins, 259–271.
- Roberge, Yves. 1990. *The Syntactic Recoverability of Null Arguments*. Kingston & Montreal: McGill-Queen's University Press.
- Roberts, Ian. 1993. *Verbs and Diachronic Syntax. A Comparative History of English and French*. Dordrecht: Kluwer.
- Roberts, Ian. 1997. Directionality and word order change in the history of English. In *Parameters of Morphosyntactic Change*, A. van Kemenade and N. Vincent (eds), 397-427. Cambridge: Cambridge University Press.
- Roberts, Ian 1999. Verb movement and markedness. In: M. DeGraff (ed.), *Language Creation and Language Change: Creolization, Diachrony and Development*, 287-329. Cambridge, Mass.: MIT Press.
- Roberts, Ian. 1998. Have/Be raising, Move F, and Procrastinate. *Linguistic Inquiry* 29.1, 113-125.
- Roberts, Ian. 2007. *Diachronic Syntax*. Oxford: Oxford University Press.
- Roberts, Ian. 2010. Varieties of French and the Null Subject Parameter. In: T. Biberauer, A. Holmberg, I. Roberts, and M. Sheehan (eds.), *Parametric Variation*, 303-327. Cambridge: Cambridge University Press.
- Rögnvaldsson, Eiríkur. 1991. Quirky subjects in Old Icelandic. In: H. Sigurðsson (ed.), *Papers from the 12th Scandinavian Conference of Linguistics*, 369-378.
- Rohrbacher, Bernhard. 1999. *Morphology-driven Syntax: A Theory of V-to-I Raising and Pro-drop*. Amsterdam: Benjamins.
- Sapir, Edward. 1921. *Language*. New York: Harcourt, Brace and World.
- Schulze, Wolfgang. 1998. Person, Klasse, Kongruenz. Fragmente einer Kategorialtypologie des einfachen Satzes in den ostkaukasischen Sprachen. Band II: Die Person. Ms., University of Munich.
- Schwentner, Hans. 1922. Die Wortfolge im Litauischen. *Slavica* V, 1-33. Heidelberg: Carl Winter.
- Siewierska, Anna. 1999. From anaphoric pronoun to grammatical marker: why objects don't make it. *Folia Linguistica* 33.2, 225-251.
- Siewierska, Anna. 2004. *Person*. Cambridge: Cambridge University Press.
- Sigurðsson, Halldór Ármann. 1983. Um frásagnarumröðun og grundvallarorðaröð í forníslensku. Master's thesis, University of Iceland, Reykjavík.
- Simonenko, Alexandra, Benoit Crabbé & Sophie Prevost. 2015. Morphological triggers of syntactic changes: Treebank-based Information Theoretic approach. *Treebanks and Linguistic Theories (TLT)*, 2015. Warsaw (<https://hal.inria.fr/hal-01240245>).
- Sundquist, John D. 2002. *Morphosyntactic Change in the History of the Mainland Scandinavian Languages*. Ann Arbor, MI: Pro Quest.
- Sundquist, John D. 2003. The Rich Agreement Hypothesis and Early Modern Danish embedded-clause word order. *Nordic Journal of Linguistics* 26.2, 233-258.
- Vance, Barbara. 1997. *Syntactic Change in Medieval French: Verb Second and Null Subjects*. Dordrecht: Kluwer.
- Vennemann, Theo. 1975. An explanation of drift. In: Charles Li (ed.), *Word Order and Word Order Change*. Austin: University of Texas Press.
- Vikner, Sten. 1997. V-to-I movement and inflection for person in all tenses. In *The New Comparative Syntax*, L. Haegeman (ed.), 189-213. London: Longman.
- Wartburg, Walther von. 1970. *Einführung in die Problematik und Methodik der Sprachwissenschaft* (3rd edition). Tübingen: Niemeyer.

- Yang, Charles. 2000. Internal and external forces in language change. *Language Variation and Change* 12, 231-250.
- Zribi-Hertz, Anne. 1994. La syntaxe des clitiques nominatifs en français standard et en français avancé. In: G. Kleiber and G. Roques (eds.), *Travaux de linguistique et de philologie*, 131-147. Strasbourg-Nancy: Klincksieck.
- Zwicky, Arnold and Geoffrey Pullum. 1983. "Cliticization vs. inflection: English N'T." *Language* 59.3, 502-513.