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UNIVERSITY

FACULTY OF ARTS AND PHILOSOPHY

DEPARTMENT OF LINGUISTICS – LATIN SECTION
RESEARCH GROUPS: DIALING, GLIMS, GIKS

ALEA IACTA EST.

A 'LANGUAGE ECOLOGY' APPROACH TO THE DIACHRONY OF THE LATIN PASSIVE

ICHL Oxford (01/08/2022) – Dr Simon Aerts

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ALEA IACTA EST

1. “*Alea* ***iacta est*** ("The die **is cast**") is a variation of a Latin phrase (***iacta*** *alea* ***est*** [ˈjakta ˈaːlɛ.a ˈɛst]) attributed by Suetonius to Julius Caesar on January 10, 49 BC, as he led his army across the Rubicon river in Northern Italy.” (Wikipedia)

   [Caesar’s *Bellum Gallicum*] begins with the frequently quoted phrase *"Gallia* ***est*** *omnis* ***divisa*** *in partes tres"*, meaning "Gaul is a whole divided into three parts”. (Wikipedia)

   “Gallia **is** in zijn geheel **verdeeld** in drie delen. (...)
   [Gaul as a whole **is divided** in three parts. (...)]

ALEA IACTA EST

1. “*Alea* ***iacta est*** ("The die **is cast**") is a variation of a Latin phrase (***iacta*** *alea* ***est*** [ˈjakta ˈaːlɛ.a ˈɛst]) attributed by Suetonius to Julius Caesar on January 10, 49 BC, as he led his army across the Rubicon river in Northern Italy.” (Wikipedia)

   [Caesar’s *Bellum Gallicum*] begins with the frequently quoted phrase *"Gallia* ***est*** *omnis* ***divisa*** *in partes tres"*, meaning "Gaul is a whole divided into three parts”. (Wikipedia)

   “Gallia **is** in zijn geheel **verdeeld** in drie delen. (...)
   [Gaul as a whole **is divided** in three parts. (...)]

2. Qui locus ad quod lectus fuerit, tantus rugitus et mugitus totius populi est cum fletu ut forsitan porro ad civitatem gemitus populi omnis **auditus sit**. (*Pereg*. 36.3)
   “By the time the passage has been read, such is the groaning and lamenting together with weeping of the entire people that the moaning of the whole people **has** possibly **been heard** as far as the city.” (Pinkster, *Oxford Latin Syntax* (2015), 478)

   “I cannot see how *auditus sit* could be given a past interpretation.” (de Melo 2012, 100; cf. also Väänänen (1987, 62-65)

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Some innovations in the Latin tense system

- Passive tenses of the *perfectum* stem

	Indicative			
Old	*cantatus est*	*cantatus erat*	*cantatus erit*	
New	*cantatus fuit*	*cantatus fuerat*	*cantatus fuerit*	
	Subjunctive			**Infinitive**
Old	*cantatus sit*	*cantatus esset*	-	*cantatus esse*
New	*cantatus fuerit*	*cantatus fuisset*	-	*cantatus fuisse*

- Auxiliarization of *habeo* (and variants)
  - *cantatum habe(bat)* (cf. Fr. *il a chanté*)
  - *cantare habet/potest/uult/debet* (cf. Fr. *il chantera*)
  - *cantare habebat/habuit* (cf. Fr. *il chanterait*)

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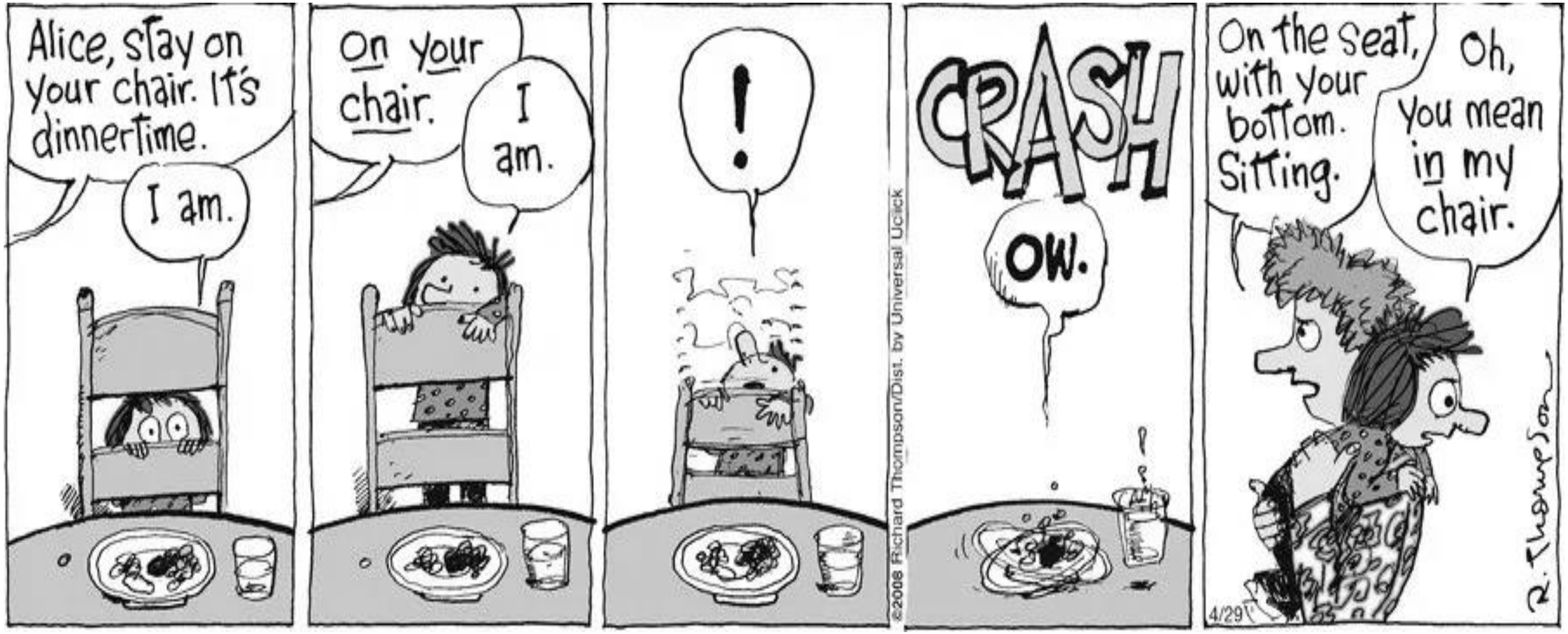
INNOVATION AND WHY



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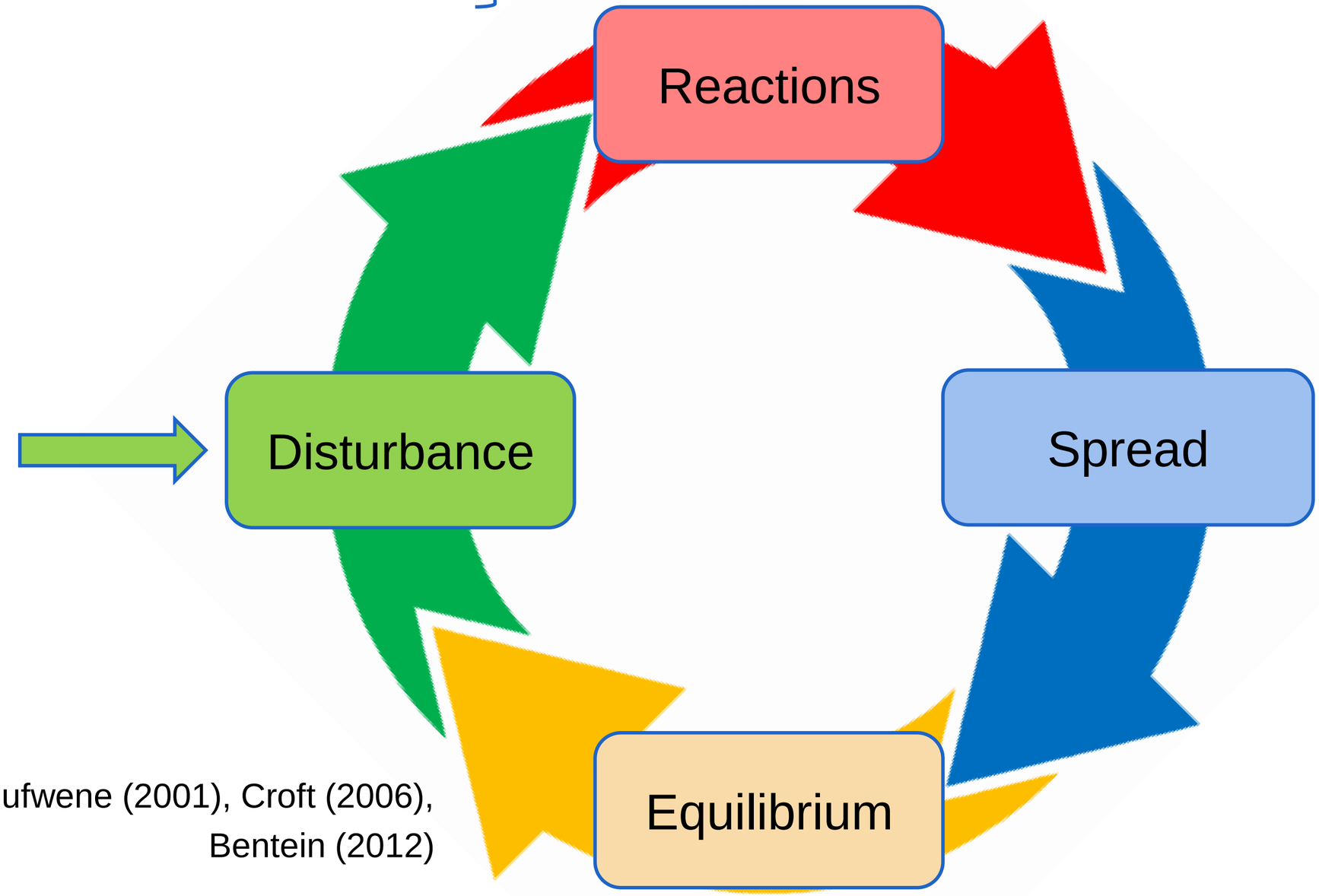
INNOVATION AND WHY

- Why use a new form for a certain function? E.g. …
  - Because it's possible (e.g. analogous constructions; < Greek)
    e.g. 'past participle + *habeo*' ~ 'past participle + ἔχω' (Horrocks 2010 vs. Bentein 2016)
  - Because it *does the trick* better (semantic/pragmatic)
    e.g. *cantatus est* → *cantatus fuit*
  - Because it sounds better (phonological) (Adams 2013)
    e.g. *cantabit* (vs. *cantauit*) → *cantare habet*
  - Because it solves confusion (e.g. loss of case system) (Kiss 1982)
    e.g. *cantatur* → *cantatus est*

LANGUAGE ECOLOGY

- Language-external
- Language-internal

- Functional gap
- Phonological/ prosodic conflicts
- Morphological confusion



Cf. Mufwene (2001), Croft (2006), Bentein (2012)

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The Latin Passive

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THE DIACHRONY OF THE LATIN PASSIVE

1. Past/anterior passive actions:

cantatus est	→ *cantatus fuit*	Cf. Fr. *il a été chanté*	[it has been sung]
cantatus erat	→ *cantatus fuerat*	Cf. Fr. *il avait été chanté*	[it had been sung]

etc.

functional specialization of 'old' form towards 'resultative state' (cf. *diuisa est*)
(cf. Aerts 2021b)

(1) 399. DILECTAE THETIDI ALCYONES. Ceyx [vel Ciax], filius Luciferi, habuit uxorem Alcyonen, a qua cum **prohibitus esset** <ire> ad consulendum Apollinem de statu regni sui, naufragio periit, cuius corpus ad uxorem cum delatum fuisset, illa se in mare praecipitavit; postea miseratione Thetidis et Luciferi CONVERSI SUNT ambo in aves marinas alcyones. (*Breuis expositio Vergilii Georgicorum,* lib. 1, 8th century)

"Ceyx (or Ciax), the son of Lucifer, had as his wife Alcyone. When he **was forbidden** by her to go to consult Apollo on the state of his reign, he perished in a shipwreck. When his body had been brought back to his wife, she plunged herself into the sea. Afterwards, both of them WERE TRANSFORMED into the sea birds 'alcyo' by the mercy of Thetis and Lucifer."

THE DIACHRONY OF THE LATIN PASSIVE

2. Present passive event:

cantatur	→ *cantatus est*	Cf. Fr. *il est chanté*	[it is sung]
(*cantabatur*	→ *cantatus erat*	Cf. Fr. *il était chanté*	[it was sung])
(*cantabitur*	→ *cantatus erit*	Cf. Fr. *il sera chanté*	[it will be sung])

- This shift is expected because of the Romance descendants ...
  but instances in (Late) Latin are said to be rare (e.g Pinkster 2015)
- This shift would entail signs of confusion between *cantatur* and *cantatus est*
  for 'present event' and 'resultative' meaning
- The Romance word order for 'present passive events' is head-initial ...

(2) ut neque vos neque (...), tam de quod ibidem presenti tempore **est firmatum** quam quod inantia, (...) (*Chart. Mer*. n147, 7th c.)
"so that neither you nor [anyone else could make a claim] either to what **is** currently (i.e. in this document) **being agreed upon** or to [anything that is forgotten due to fault of ...]

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THE DIACHRONY OF THE LATIN PASSIVE

2. Present passive event:

cantatur	→ *cantatus est*	Cf. Fr. *il est chanté*	[it is sung]
(*cantabatur*	→ *cantatus erat*	Cf. Fr. *il était chanté*	[it was sung])
(*cantabitur*	→ *cantatus erit*	Cf. Fr. *il sera chanté*	[it will be sung])

- Danckaert (2016; 2017):
  - development towards head-initiality can be observed for *cantatus fuit* but not for *cantatus est*
  - Danckaert suggests a new tense modelled on *cantatus fuit* for ‘present events’

- Hypothesis for *cantatus est*: correlation between
  - Head-initiality and the traditional functions of *cantatur*
  - Head-finality and the ‘resultative’ function of *cantatus est*

POSSIBLE INFLUENCES ON SUCH A CORRELATION

Factors that could '**induce**' the 'resultative' and/or 'present event' use

1. Case confusion (language-internal influence)
   - *cantatus est* instead of *cantatur* to clarify constituent roles (cf. Kiss 1982, 29–30)
   - if CASE and preposition use cannot be relied upon, only GENDER and NUMBER remain to distinguish PATIENT from AGENT

2. High degree of functional specialization of *cantatus fuit* (language-internal influence)
   - exclusive use of the 'new' construction for 'aoristic/narrative' and 'anterior' uses of the *perfectum* stem tenses

3. Resultative-adjective analogy (language-internal influence)
   - at what point does a participle have the value of an adjective (e.g. *paratus est*)? (cf. Danckaert 2016, 138-139; de Melo 2012, 88-89)
   - 'resultative' of these verbs is structurally equivalent to copula + adjective, i.e. 'simultaneous stative situation'

POSSIBLE INFLUENCES ON SUCH A CORRELATION

Factors that could '**overrule**' the hypothesized association

1. Prosodic (cf. Danckaert 2016; 2017)
   - N° of syllables in the auxiliary (monosyllabic – polysyllabic)
   - '*In pausa*' position of the verb prase

2. Pragmatic/stilistic
   - Emphasis, parallelism, other stilistic considerations
   - Idiomatic/formulaic language

3. Syntactic
   - Subordinate clauses – in general – tend to supply background information, i.e. simultaneous situations (e.g. 'resultative state') or anterior events (cf. Aerts 2021b)
     → Subordination might at times be sufficient for a reader to understand the tense form as such

DATA OVERVIEW

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CORPUS RESEARCH

- Available online corpora: e.g. PaLaFra, LASLA, LLT, ...
  - Broad: diachronic, diatopic, diaphasic
    - Contact with Greek, e.g. Christian Latin, inscriptions
    - Also colloquial language (or imitating such), e.g. letters, curse tablets
    - Literary (e.g. archaisms) and technical texts
  - Different types of querying

- Collecting and counting “all” occurrences
  (e.g. text type, time period, tense form, head-initiality, contiguity, auxiliary length)
  = quantitative research

- Submitting a representative sample to ‘close reading’
  (e.g. clause type, tense function, ‘in pausa’ position, signs of case confusion, emphasis)
  = additional qualitative research

CORPUS RESEARCH: DATA AND CAVEATS

1. ‘Old’ *perfectum* stem tenses: occurrences in corpora

	Occurrences	% of parent row
perfect	**284.095**	**93%**
indicative	*234.733*	*83%*
infinitive	*26.221*	*9%*
subjunctive	*23.141*	*8%*
pluperfect	**17.472**	**6%**
indicative	*8.870*	*51%*
subjunctive	*8.602*	*49%*
future perfect	**3.594**	**1%**
indicative	*3.594*	*100%*
Grand Total	**305.161**	**100%**

– Possible noise (largest corpus is not tagged): non-participle forms, contiguity by chance

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CORPUS RESEARCH: DATA AND CAVEATS

1. ‘Old’ *perfectum* stem tenses: occurrences per chronological stage

	BCE 240-90	BCE 90 - CE 14	CE 14 - 200	CE 200 - 600	CE 600 - 850 etc.	Grand Total
perfect	**1.461**	**17.386**	**18.092**	**224.530**	**22.179**	**283.648**
indicative	*69%*	*61%*	*76%*	*84%*	*88%*	*83%*
infinitive	*20%*	*28%*	*14%*	*8%*	*6%*	*9%*
subjunctive	*11%*	*11%*	*9%*	*8%*	*6%*	*8%*
pluperfect	**69**	**3.706**	**1.852**	**10.500**	**1.324**	**17.451**
indicative	*30%*	*44%*	*53%*	*51%*	*65%*	*51%*
subjunctive	*70%*	*56%*	*47%*	*49%*	*35%*	*49%*
future perfect	**207**	**434**	**249**	**2.404**	**198**	**3.492**
indicative	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*
Grand Total	**1.737**	**21.526**	**20.193**	**237.434**	**23.701**	**304.591**

- Stages are arbitrary to some extent (but in line with *communis opinio*)
- Borderline authors: e.g. when did their proficiency take form?
- Many unknowns (e.g. *terminus ante quem*)
- Prolific authorship: e.g. Cicero, Augustine, Venerable Bede

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CORPUS RESEARCH: DATA AND CAVEATS

1. ‘Old’ *perfectum* stem tenses: occurrences per text type

	Colloquial	Christian	Literary	Technical	Epigraphy	Grand Total
perfect	**2.072**	**201.647**	**34.256**	**44.505**	**1.615**	**284.095**
indicative	*73%*	*87%*	*71%*	*72%*	*96%*	*83%*
infinitive	*17%*	*7%*	*21%*	*10%*	*1%*	*9%*
subjunctive	*10%*	*6%*	*8%*	*18%*	*3%*	*8%*
pluperfect	**81**	**8.521**	**5.656**	**3.131**	**83**	**17.472**
indicative	*47%*	*59%*	*47%*	*36%*	*46%*	*51%*
subjunctive	*53%*	*41%*	*53%*	*64%*	*54%*	*49%*
future perfect	**47**	**1.806**	**327**	**1.342**	**72**	**3.594**
indicative	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*
Grand Total	**2.200**	**211.974**	**40.239**	**48.978**	**1.770**	**305.161**

- ‘Broad’ conception of text types (for reasons of feasibility), e.g.
  - ‘colloquial’ = curse tablets, non-literary letters, comedies, *Cena Trimalchionis,* ...
  - ‘technical’ = grammar, rhetoric, encyclopedic, medical, architectural, ...
- Poetry (anything written in verse) excluded due to importance of word order here

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CORPUS RESEARCH: DATA AND CAVEATS

2. ‘New’ *perfectum* stem tenses: occurrences in corpora

	Occurrences	% of parent row
perfect	**4.186**	**15%**
indicative	*2.460*	*59%*
infinitive	*1.726*	*41%*
pluperfect	**7.608**	**28%**
indicative	*5.464*	*72%*
subjunctive	*2.144*	*28%*
(future) perfect	**15.397**	**57%**
indicative/subjunctive	*15.397*	*100%*
Grand Total	**27.191**	**100%**

- Possible noise (largest corpus is not tagged): non-participle forms, contiguity by chance
- *cantatus fuero* (ind. fut. ex.) – *cantatus fuerim* (subj. pf.): homomorphic in all forms but 1.SG
  Still, neither are very frequent in the ‘old’ form (combined: 26.735 occurrences or about 9%)

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CORPUS RESEARCH: DATA AND CAVEATS

2. ‘New’ *perfectum* stem tenses: occurrences per chronological stage

	BCE 240-90	BCE 90 - CE 14	CE 14 - 200	CE 200 - 600	CE 600 - 850 etc.	Grand Total
perfect	**40**	**199**	**296**	**2.913**	**822**	**4.270**
indicative	*84%*	*81%*	*83%*	*51%*	*71%*	*59%*
infinitive	*16%*	*19%*	*17%*	*49%*	*29%*	*41%*
pluperfect	**6**	**223**	**260**	**6.343**	**815**	**7.647**
indicative	*100%*	*81%*	*77%*	*73%*	*62%*	*72%*
subjunctive	*0%*	*19%*	*23%*	*27%*	*38%*	*28%*
(future) perfect	**16**	**195**	**432**	**13.690**	**1.076**	**15.409**
indicative/subjunctive	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*
Grand Total	**62**	**617**	**988**	**22.946**	**2.713**	**27.326**

- Stages are arbitrary to some extent (but in line with *communis opinio*)
- Borderline authors: e.g. when did their proficiency take form?
- Many unknowns (e.g. *terminus ante quem*)
- Prolific authorship: e.g. Cicero, Augustine, Venerable Bede

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CORPUS RESEARCH: DATA AND CAVEATS

2. ‘New’ *perfectum* stem tenses: occurrences per text type

	Colloquial	Christian	Literary	Technical	Epigraphy	Grand Total
perfect	**65**	**2.643**	**501**	**958**	**19**	**4.186**
indicative	*65%*	*48%*	*78%*	*76%*	*79%*	*59%*
infinitive	*35%*	*52%*	*22%*	*24%*	*21%*	*41%*
pluperfect	**26**	**5.342**	**800**	**1.423**	**17**	**7.608**
indicative	*96%*	*75%*	*72%*	*58%*	*82%*	*72%*
subjunctive	*4%*	*25%*	*28%*	*42%*	*18%*	*28%*
(future) perfect	**107**	**9.845**	**257**	**5.169**	**19**	**15.397**
indicative/subjunctive	*100%*	*100%*	*100%*	*100%*	*100%*	*100%*
Grand Total	**198**	**17.830**	**1.558**	**7.550**	**55**	**27.191**

- ‘Broad’ conception of text types (for reasons of feasibility), e.g.
  - ‘colloquial’ = curse tablets, non-literary letters, comedies, *Cena Trimalchionis,* ...
  - ‘technical’ = grammar, rhetoric, encyclopedic, medical, architectural, ...
- Poetry (anything written in verse) excluded due to importance of word order here

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CORPUS RESEARCH: DATA AND CAVEATS

3. ‘Old’ vs. ‘new’ forms: occurrences per chronological stage

	BCE 240-90	BCE 90 - CE 14	CE 14 - 200	CE 200 - 600	CE 600 - 850 etc.	Grand Total
perfect	**1.335**	**15.654**	**16.670**	**209.352**	**21.718**	**264.729**
indicative	*77%*	*69%*	*84%*	*91%*	*92%*	*89%*
new	3%	2%	2%	1%	3%	1%
old	97%	98%	98%	99%	97%	99%
infinitive	*23%*	*31%*	*16%*	*9%*	*8%*	*11%*
new	2%	1%	2%	8%	14%	6%
old	98%	99%	98%	92%	86%	94%
pluperfect	**75**	**3.929**	**2.100**	**16.811**	**2.137**	**25.052**
indicative	*36%*	*46%*	*56%*	*59%*	*64%*	*57%*
new	22%	10%	16%	46%	37%	38%
old	78%	90%	84%	54%	63%	62%
subjunctive	*64%*	*54%*	*44%*	*41%*	*36%*	*43%*
new	0%	2%	6%	25%	40%	20%
old	100%	98%	94%	75%	60%	80%
(future) perfect	**385**	**2.560**	**2.383**	**34.098**	**2.549**	**41.975**
new	4%	8%	18%	40%	42%	37%
old	96%	92%	82%	60%	58%	63%
Grand Total	**1.795**	**22.143**	**21.153**	**260.261**	**26.404**	**331.756**

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3. ‘Old’ vs. ‘new’ forms: occurrences per text type

	Colloquial	Christian	Literary	Technical	Epigraphy	Grand Total
perfect	**1.926**	**192.294**	**31.921**	**37.412**	**1.587**	**265.140**
indicative	*80%*	*92%*	*78%*	*88%*	*99%*	*89%*
new	3%	1%	2%	2%	1%	1%
old	97%	99%	98%	98%	99%	99%
infinitive	*20%*	*8%*	*22%*	*12%*	*1%*	*11%*
new	6%	9%	2%	5%	22%	6%
old	94%	91%	98%	95%	78%	94%
pluperfect	**107**	**13.863**	**6.456**	**4.554**	**100**	**25.080**
indicative	*59%*	*65%*	*50%*	*43%*	*52%*	*57%*
new	40%	44%	18%	42%	27%	38%
old	60%	56%	82%	58%	73%	62%
subjunctive	*41%*	*35%*	*50%*	*57%*	*48%*	*43%*
new	2%	27%	7%	23%	6%	20%
old	98%	73%	93%	77%	94%	80%
(future) perfect	**364**	**23.647**	**3.420**	**14.562**	**138**	**42.131**
new	29%	42%	8%	35%	14%	37%
old	71%	58%	92%	65%	86%	63%
Grand Total	**2.397**	**229.804**	**41.797**	**56.528**	**1.825**	**332.351**

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RESULTS PHASE 1

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RESULTS PHASE 1 – 'OLD' PERFECTUM FORMS

1. Probability of head-initial word order with monosyllabic vs. polysyllabic auxiliaries

monosyllabic aux.	**243.486**
cantatus est	*89%*
est cantatus	*11%*
polysyllabic aux.	**53.128**
cantatus est	*71%*
est cantatus	*29%*
Grand Total	**296.614**

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RESULTS PHASE 1 – 'OLD' PERFECTUM FORMS

2. Probability of head-initial word order with different tenses

(future) perfect	**26.444**
cantatus est	*74%*
est cantatus	*26%*
perfect	**253.658**
cantatus est	*88%*
est cantatus	*12%*
pluperfect	**16.712**
cantatus est	*72%*
est cantatus	*28%*
Grand Total	**296.814**

3. Probability of head-initial word order with different moods

indicative	**240.889**
cantatus est	*90%*
est cantatus	*10%*
indicative/subjunctive	**26.444**
cantatus est	*74%*
est cantatus	*26%*
infinitive	**21.255**
cantatus est	*57%*
est cantatus	*43%*
subjunctive	**8.226**
cantatus est	*73%*
est cantatus	*27%*
Grand Total	**296.814**

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RESULTS PHASE 1 – 'OLD' PERFECTUM FORMS

4. Probability of head-initial word order in different time stages

BCE 240-90	**1.406**
cantatus est	*70%*
est cantatus	*30%*
BCE 90 - CE 14	**16.389**
cantatus est	*74%*
est cantatus	*26%*
CE 14 - 200	**17.364**
cantatus est	*88%*
est cantatus	*12%*
CE 200 - 600	**237.432**
cantatus est	*86%*
est cantatus	*14%*
CE 600 - 850 etc.	**23.653**
cantatus est	*83%*
est cantatus	*17%*
Grand Total	**296.244**

5. Probability of head-initial word order in different text types

Colloquial	**1.874**
cantatus est	*69%*
est cantatus	*31%*
Christian	**211.974**
cantatus est	*87%*
est cantatus	*13%*
Literary	**32.244**
cantatus est	*83%*
est cantatus	*17%*
Technical	**48.952**
cantatus est	*82%*
est cantatus	*18%*
Epigraphic	**1.770**
cantatus est	*91%*
est cantatus	*9%*
Grand Total	**296.814**

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RESULTS PHASE 1 – 'OLD' PERFECTUM FORMS

6. Probability of head-initial word order in different time stages and in different text types

	BCE 240-90	BCE 90 - CE 14	CE 14 - 200	CE 200 - 600	CE 600 - 850 etc.	Grand Total
Colloquial	**988**	**4**	**105**	**686**	**74**	**1.857**
cantatus est	*61%*	*100%*	*77%*	*77%*	*84%*	*69%*
est cantatus	*39%*	*0%*	*23%*	*23%*	*16%*	*31%*
Christian			**324**	**192.467**	**19.183**	**211.974**
cantatus est			*92%*	*87%*	*83%*	*87%*
est cantatus			*8%*	*13%*	*17%*	*13%*
Literary	**68**	**14.644**	**9.131**	**6.893**	**1.508**	**32.244**
cantatus est	*94%*	*76%*	*91%*	*87%*	*87%*	*83%*
est cantatus	*6%*	*24%*	*9%*	*13%*	*13%*	*17%*
Technical	**294**	**1.621**	**6.913**	**37.124**	**2.880**	**48.832**
cantatus est	*93%*	*53%*	*83%*	*83%*	*80%*	*82%*
est cantatus	*7%*	*47%*	*17%*	*17%*	*20%*	*18%*
Epigraphic	**56**	**120**	**891**	**262**	**8**	**1.337**
cantatus est	*88%*	*88%*	*91%*	*90%*	*100%*	*91%*
est cantatus	*13%*	*12%*	*9%*	*10%*	*0%*	*9%*
Grand Total	**1.406**	**16.389**	**17.364**	**237.432**	**23.653**	**296.244**

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RESULTS PHASE 1 – 'NEW' PERFECTUM FORMS

1. (only polysyllabic aux.)
2. Probability of head-initial word order with different tenses
3. Probability of head-initial word order with different moods

(future) perfect	**15.397**
cantatus fuit	*58%*
fuit cantatus	*42%*
perfect	**4.186**
cantatus fuit	*59%*
fuit cantatus	*41%*
pluperfect	**7.606**
cantatus fuit	*58%*
fuit cantatus	*42%*
Grand Total	**27.189**

indicative	**7.923**
cantatus fuit	*60%*
fuit cantatus	*40%*
indicative/subjunctive	**15.397**
cantatus fuit	*58%*
fuit cantatus	*42%*
infinitive	**1.726**
cantatus fuit	*48%*
fuit cantatus	*52%*
subjunctive	**2.143**
cantatus fuit	*61%*
fuit cantatus	*39%*
Grand Total	**27.189**

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RESULTS PHASE 1 – 'NEW' PERFECTUM FORMS

4. Probability of head-initial word order in different time stages

BCE 240-90	**59**
cantatus fuit	*78%*
fuit cantatus	*22%*
BCE 90 - CE 14	**617**
cantatus fuit	*73%*
fuit cantatus	*27%*
CE 14 - 200	**960**
cantatus fuit	*74%*
fuit cantatus	*26%*
CE 200 - 600	**22.827**
cantatus fuit	*57%*
fuit cantatus	*43%*
CE 600 - 850 etc.	**2.701**
cantatus fuit	*62%*
fuit cantatus	*38%*
Grand Total	**27.164**

5. Probability of head-initial word order in different text types

Colloquial	**198**
cantatus fuit	*66%*
fuit cantatus	*34%*
Christian	**17.830**
cantatus fuit	*57%*
fuit cantatus	*43%*
Literary	**1.557**
cantatus fuit	*72%*
fuit cantatus	*28%*
Technical	**7.549**
cantatus fuit	*60%*
fuit cantatus	*40%*
Epigraphic	**55**
cantatus fuit	*60%*
fuit cantatus	*40%*
Grand Total	**27.189**

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RESULTS PHASE 1 – 'NEW' PERFECTUM FORMS

6. Probability of head-initial word order in different time stages and in different text types

	BCE 240-90	BCE 90 - CE 14	CE 14 - 200	CE 200 - 600	CE 600 - 850 etc.	Grand Total
Colloquial	**51**	**5**	**5**	**108**	**28**	**197**
cantatus fuit	*80%*	*100%*	*80%*	*53%*	*79%*	*65%*
fuit cantatus	*20%*	*0%*	*20%*	*47%*	*21%*	*35%*
Christian			**39**	**16.023**	**1.768**	**17.830**
cantatus fuit			*95%*	*56%*	*63%*	*57%*
fuit cantatus			*5%*	*44%*	*37%*	*43%*
Literary	**3**	**456**	**462**	**358**	**278**	**1.557**
cantatus fuit	*33%*	*75%*	*73%*	*73%*	*63%*	*72%*
fuit cantatus	*67%*	*25%*	*27%*	*27%*	*37%*	*28%*
Technical	**5**	**153**	**439**	**6.319**	**627**	**7.543**
cantatus fuit	*80%*	*69%*	*72%*	*59%*	*57%*	*60%*
fuit cantatus	*20%*	*31%*	*28%*	*41%*	*43%*	*40%*
Epigraphic		**3**	**15**	**19**		**37**
cantatus fuit		*67%*	*87%*	*32%*		*57%*
fuit cantatus		*33%*	*13%*	*68%*		*43%*
Grand Total	**59**	**617**	**960**	**22.827**	**2.701**	**27.164**

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RESULTS PHASE 2

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RESULTS PHASE 2 – 'OLD' PERFECTUM FORMS

1. Probability of head-initial word order with monosyllabic vs. polysyllabic auxiliaries and participles of 2, 3 or 4+ syllables.

monosyllabic aux.	**364**
cantatus est	*86%*
est cantatus	*14%*
polysyllabic aux.	**101**
cantatus est	*80%*
est cantatus	*20%*
Grand Total	**465**

	part. syllables			
	2	**3**	**4+**	**Grand Total**
monosyllabic aux.	**100**	**179**	**85**	**364**
cantatus est	*89%*	*89%*	*75%*	*86%*
est cantatus	*11%*	*11%*	*25%*	*14%*
polysyllabic aux.	**41**	**38**	**22**	**101**
cantatus est	*80%*	*76%*	*86%*	*80%*
est cantatus	*20%*	*24%*	*14%*	*20%*
Grand Total	**141**	**217**	**107**	**465**

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RESULTS PHASE 2 – 'OLD' PERFECTUM FORMS

2. Probability of head-initial word order with monosyllabic vs. polysyllabic auxiliaries and 'in pausa' position

monosyllabic aux.	**364**
cantatus est	*86%*
est cantatus	*14%*
polysyllabic aux.	**101**
cantatus est	*80%*
est cantatus	*20%*
Grand Total	**465**

	in pausa		
	FALSE	**TRUE**	**Grand Total**
monosyllabic aux.	**123**	**240**	**363**
cantatus est	*89%*	*85%*	*86%*
est cantatus	*11%*	*15%*	*14%*
polysyllabic aux.	**29**	**72**	**101**
cantatus est	*86%*	*78%*	*80%*
est cantatus	*14%*	*22%*	*20%*
Grand Total	**152**	**312**	**464**

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RESULTS PHASE 2 – 'OLD' PERFECTUM FORMS

3. Probability of head-initial word order with clause type

subordinate clause	**247**
cantatus est	*87%*
est cantatus	*13%*
main clause	**208**
cantatus est	*83%*
est cantatus	*17%*
Grand Total	**455**

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RESULTS PHASE 2 – 'OLD' PERFECTUM FORMS

4. Probability of head-initial word order with clause type and function

	perfect	present	resultative	Grand Total
subordinate clause	**167**	**14**	**55**	**236**
cantatus est	*89%*	*50%*	*87%*	*86%*
est cantatus	*11%*	*50%*	*13%*	*14%*
main clause	**159**	**11**	**31**	**201**
cantatus est	*87%*	*73%*	*74%*	*84%*
est cantatus	*13%*	*27%*	*26%*	*16%*
Grand Total	**326**	**25**	**86**	**437**

(3) unde convenit, ut duas epistolas uno tenore conscriptas exinde fieri vel adfirmare deberent, ut una in foro publico in ipsa civitate **sit adficta**, alia vero ipse secum pro cautela et tempora futura apud se retineat (...) (*Formularies of Tours,* p. 151, 8th-9th c.)
"Whence it was agreed that two letters written in the same tone had to be composed and attached, so that one **is nailed** to the public forum in the town itself, and so that he keeps the other one with him as a precaution and for future times (...)

RESULTS PHASE 2 – 'OLD' PERFECTUM FORMS

5. Probability of head-initial word order with function and time stage

	BCE 240-90	BCE 90 - CE 14	CE 14 - 200	CE 200 - 600	CE 600 - 850 etc.	Grand Total
perfect	**38**	**28**	**85**	**53**	**130**	**334**
cantatus est	*84%*	*82%*	*94%*	*89%*	*84%*	*87%*
est cantatus	*16%*	*18%*	*6%*	*11%*	*16%*	*13%*
present	**4**	**2**	**5**	**3**	**9**	**23**
cantatus est	*100%*	*50%*	*100%*	*67%*	*11%*	*57%*
est cantatus	*0%*	*50%*	*0%*	*33%*	*89%*	*43%*
resultative	**11**	**13**	**22**	**9**	**29**	**84**
cantatus est	*82%*	*77%*	*73%*	*89%*	*90%*	*82%*
est cantatus	*18%*	*23%*	*27%*	*11%*	*10%*	*18%*
Grand Total	**53**	**43**	**112**	**65**	**168**	**441**

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RESULTS PHASE 2 – 'OLD' PERFECTUM FORMS

7. Probability of head-initial word order with function and text type

	Colloquial	Christian	Literary	Technical	Grand Total
perfect	**65**	**49**	**147**	**75**	**336**
cantatus est	*91%*	*94%*	*85%*	*84%*	*87%*
est cantatus	*9%*	*6%*	*15%*	*16%*	*13%*
present	**5**	**2**	**5**	**13**	**25**
cantatus est	*100%*	*100%*	*20%*	*54%*	*60%*
est cantatus	*0%*	*0%*	*80%*	*46%*	*40%*
resultative	**11**	**13**	**22**	**9**	**29**
cantatus est	*79%*	*80%*	*94%*	*79%*	*83%*
est cantatus	*21%*	*20%*	*6%*	*21%*	*17%*
Grand Total	**99**	**56**	**170**	**122**	**447**

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RESULTS PHASE 2 – 'OLD' PERFECTUM FORMS

8. Probability of head-initial word order with function and signs of case confusion

(4) quae dimensio a compluribus axis **est appellata**. Huius autem cacumina quibus maxime sphaera nititur poli appellantur. (*On astronomy,* 1st c. BCE)
"This dimension **is called** 'the axis' by many. Its tops, however, by which the spheres are supported, are called 'poles'."

	case confusion		
	FALSE	TRUE	Grand Total
perfect	**209**	**127**	**336**
cantatus est	*87%*	*87%*	*87%*
est cantatus	*13%*	*13%*	*13%*
present	**17**	**8**	**25**
cantatus est	*82%*	*13%*	*60%*
est cantatus	*18%*	*88%*	*40%*
resultative	**62**	**24**	**86**
cantatus est	*79%*	*92%*	*83%*
est cantatus	*21%*	*8%*	*17%*
Grand Total	**79**	**32**	**447**

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CONCLUDING REMARKS

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CONCLUDING REMARKS

- Close-reading approach: complementary to quantative approach
  - prosodic influences on head-initiality not convincing
  - influence of subordination hints at degree of perceived ‘explicitness’ of a construction
  - influence of semantic function increases over time
    NB: analysis of more occurrences with present-like functions involves practical difficulties
  - influence of ‘case loss’ on preference of ‘old’ perfect over present is difficult to measure, but correlation with Romance word order is interesting

- To do:
  - Enlarge the representative sample to make statistical testing more feasible
  - Reduce noise in the database
  - Fine-tune large-scale annotation after this first exploratory case study
  - Operationalize and apply the annotation of diaphasic and diatopic variation

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