

Why do grammaticalization pathways recur? An experimental approach

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THE LEXICAL DETERMINISM HYPOTHESIS

- Bybee et al. (1994): across many different languages from different language families and different geographical areas, similar lexical meanings give rise to the same implicatures and grammaticalization pathways

“[...] we find that the meaning present in a source construction bears a definable relation to the grammatical meanings that arise later and that these earlier meanings prefigure the grammatical meaning” (Bybee et. al 1994: 12)

EXAMPLES OF LEXICAL DETERMINISM

- Progressive forms frequently develop from lexical elements with locative meanings (Bybee et al. 1994: 127-133)
- Modals with deontic obligation meanings frequently evolve from auxiliaries with the meanings 'be', 'become', 'have' (Bybee et al. 1994: 183)
- Recent past markers frequently evolve from lexical elements with the meaning 'finish' (Bybee et al. 1994: 69-74)

'FINISH' PERFECTS ACROSS THE WORLD

nāng hwō-i pwō

Palaung (Mon-Khmer)

Lady finish birth

'The lady has given birth' (Milne 1921, Bybee et al. 1994)

mi lukim pinis

Tok Pisin (PNG)

I look finish

'I have looked'

IX-1p FINISH ASK

American Sign Language

'I have asked the/a question'

'FINISH' PERFECTS ACROSS THE WORLD

- Dahl & Velupillai (2013) in WALS: 21 languages with 'finish'/'already' perfects



'FINISH' PERFECTS ACROSS THE WORLD

<i>¡Es</i>	<i>horrible</i>	<i>lo</i>	<i>que</i>	Spanish
be.PRS.3SG	horrible	that	what	
<i>acab-a</i>	<i>de</i>	<i>ocurr-ir!</i>		
finish-PRS.3SG	of	happen-INF		
'It's horrible what just happened!'				



OUR QUESTIONS

1. Why do verbs with the meaning 'finish' get verbs as complements?
2. Are there implicatures leading to a recent past reading for verbs such as 'finish' present in languages such as English, as well?



OUR ANSWERS IN BRIEF

- (Some) verbs acquire verbal complements as the result of a process in which previously inferred meanings become overtly expressed
- We call this process **overtification**



OVERTIFICATION AND INFORMATIVITY

1. At early stages, uninformative, default inferred meanings are left implicit: *John finished dinner* => ‘John finished eating dinner’.
2. Speaker-intended meanings are (usually) made overt when they are informative, i.e., are unexpected or deviate from a default or stereotype: *John finished instagramming dinner*.
3. Speakers start making uninformative (stereotypical, expected) finished events overt (e.g., *John finished eating dinner*) in order to exploit the presupposition that the finished event is informative.

STEREOTYPICAL INFERENCE

- Result from the interaction of the FINISH verb and the inherent semantics (qualia structure) of the complement (Pustejovsky 1991).
- **Quale** - the type of relationship between the concept expressed by the word and a concept evoked by that word
- For example, *dinner* evokes the concept 'eating' (telic quale)

FIRST CASE STUDY

- Rosemeyer & Grossman (2017): A study of FINISH constructions in a corpus of Spanish historiographical texts (13th to 18th c.)

DATA

- Extraction of all *acabar* ‘finish’ tokens from the GRADIA corpus of Spanish historical texts (<http://gradiadiacronia.wixsite.com/gradia>)
- Only historiographical texts (1270-1799), $n=1885$



'FINISH' CONSTRUCTIONS IN OLD SPANISH

- a. *El cura acabó.* [-overt, ±transitive inf.]
'The priest finished.'
- b. *El cura acabó de hablar* [+overt, –transitive inf.]
'The priest finished speaking.'
- c. *El cura acabó la misa* [-overt, +transitive inf.]
'The priest finished [saying] mass.'
- d. *El cura acabó de decir la misa* [+overt, +transitive inf.]
'The priest finished saying mass'

TRANSITIVE 'FINISH' IN 13TH-14TH C. TEXTS

–overt, +transitive (inferred) infinitive:

e	acab-ó	la	torre	dal=faro	que
and	finish-PST.PFV.3SG	DET.DEF.F.SG	tower	of.the=light.house	that
<i>començ-a-ra</i>		<i>hercules</i>			
begin-THEME-PST.IPFV.SBJ.3SG		Hercules			

'And he finished [building] the tower of the light house than Hercules had begun [building]' (EDE, 13th c.)

+overt, +transitive informative infinitive:

aquel	anno	acab-o	de	cercar	toda	la	uilla
DET.DEF.M.SG	year	finish-PST.PFV.3SG	of	surround	all	DET.DEF.F.SG	city
<i>de Roma</i>	<i>de</i>	<i>muro-s</i>	<i>muy</i>	<i>fuerte-s</i>			
of Rome	of	wall-PL	very	strong-PL			

'That year he finished surrounding the entire city of Rome with very strong walls' (EDE, 13th c.)

UNINFORMATIVE 'FINISH'

–overt, +transitive uninformative infinitive:

Quando	Moisés	acab-ó	la	tienda	de	fazer
when	Moses	finish-PST.PFV.3SG	DET.DEF.F.SG	tent	of	make
e	la	alç-ó [...]		ofrec-ie-ron [...]	muchas	ofrendas
and	it	raise-PST.PFV.3SG		offer-theme-PST.PFV.3PL	many	sacrifices

'When Moses had finished building the tent and raised it [...], they [...] offered many sacrifices (GE, 13th c.)

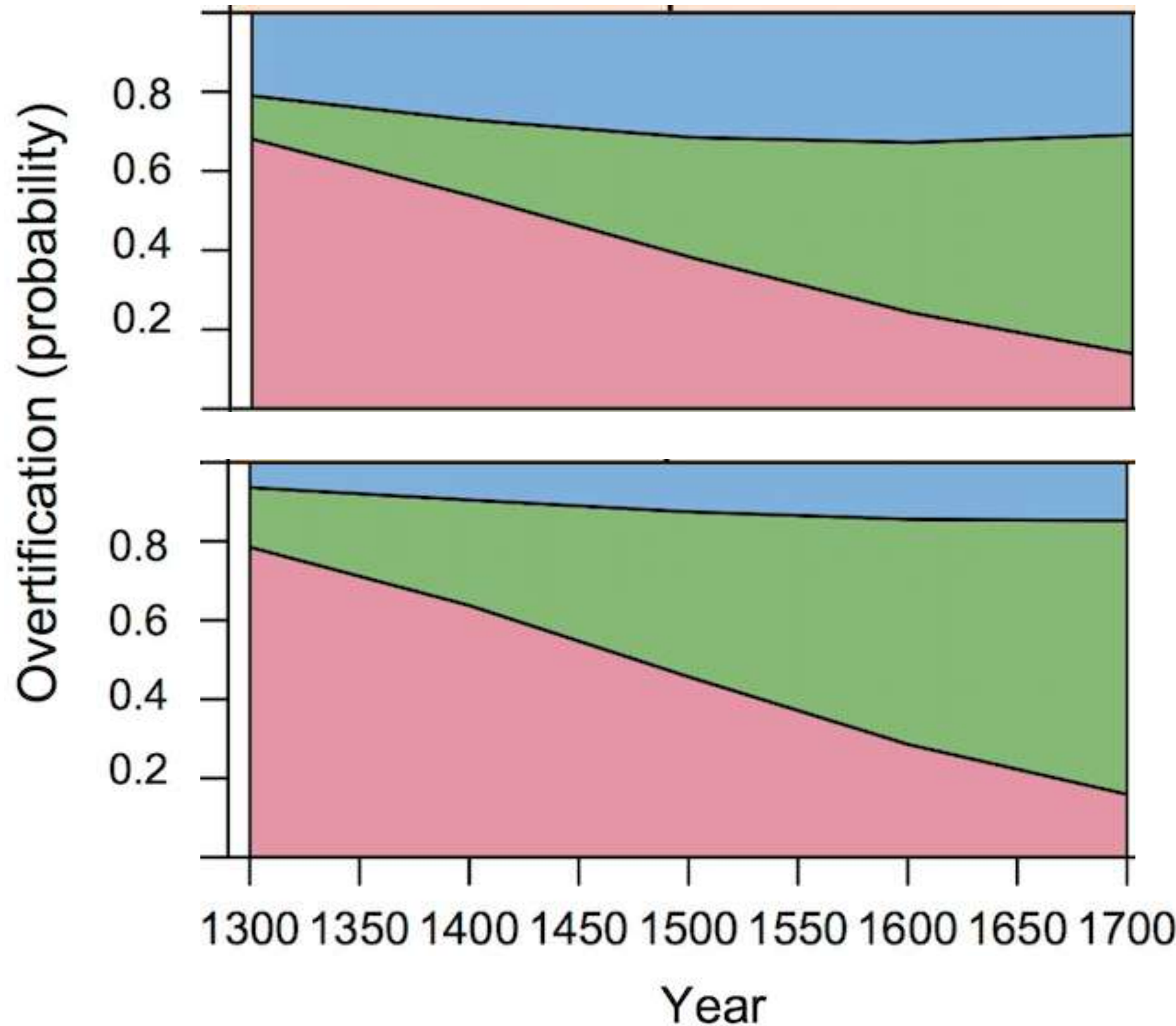
E	desque	les	acab-ó	de	dezir	estas
and	after	them	finish-PST.PFV.3SG	of	say	DET.DEF.F.PL
razones		demand-ó=les		muy	afincadamientre	
words		ask-PST.PFV.3SG=them		very	humbly	

'And when he had finished speaking these words, he asked them very humbly...' (GE, 13th c.)

TEMPORAL SUBORDINATION AND INFORMATIVITY

- Making the uninformative event explicit is a violation of the Gricean maxime of relevance or quantity
- Implicature: finishing the event was especially relevant, often a precondition, for the following event
- Particularly strong inference with artifact DOs and in temporal subordinate clauses that implicate sequentiality

ARTIFACT COMPLEMENTS



Temporal subordination
Contexts („AFTER“),
only artifact objects

Main clauses and other
types of subordination, only
artifact objects



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“EXPERIMENTING ON THE PAST”

- The lexical determinism hypothesis would predict that in principle, the grammaticalization process documented for Spanish could also take place in languages such as English:

After they had finished building the bridge, they crossed the bridge.

- Can we find evidence for the same implicatures with uninformative ‘finish’ constructions in English?

EXPERIMENT DESIGN

- Non-cumulative self-paced reading moving-window paradigm
- Two conditions: immediacy (im) and informativity (in)

Mary needed a cake for her daughter's birthday.

[As soon as / A while after]_{im} she had finished [buying / baking]_{in} the cake, she heard a shout.

Her aunt Jackie came running towards her.

HYPOTHESES

1. Reading times of both the gerunds and the objects are lower for cases with informative gerunds than for cases with uninformative gerunds
2. Reading times for cases with uninformative gerunds are lower in immediacy (“as soon as”) than in non-immediacy contexts (“a while after”) (=interaction effect between immediacy and informativity)

IMPLEMENTATION

- Implementation as a web experiment on IBEX FARM (<http://spellout.net/ibexfarm/>)
- Latin Square Design
- Dissemination among native English speakers (friends and friends of friends)
- 24 participants read 8 target dialogues and 16 filler dialogues
- Participants' attention was ensured by comprehension questions after each dialogue
- Participants reported that they were unaware of the nature of the experiment

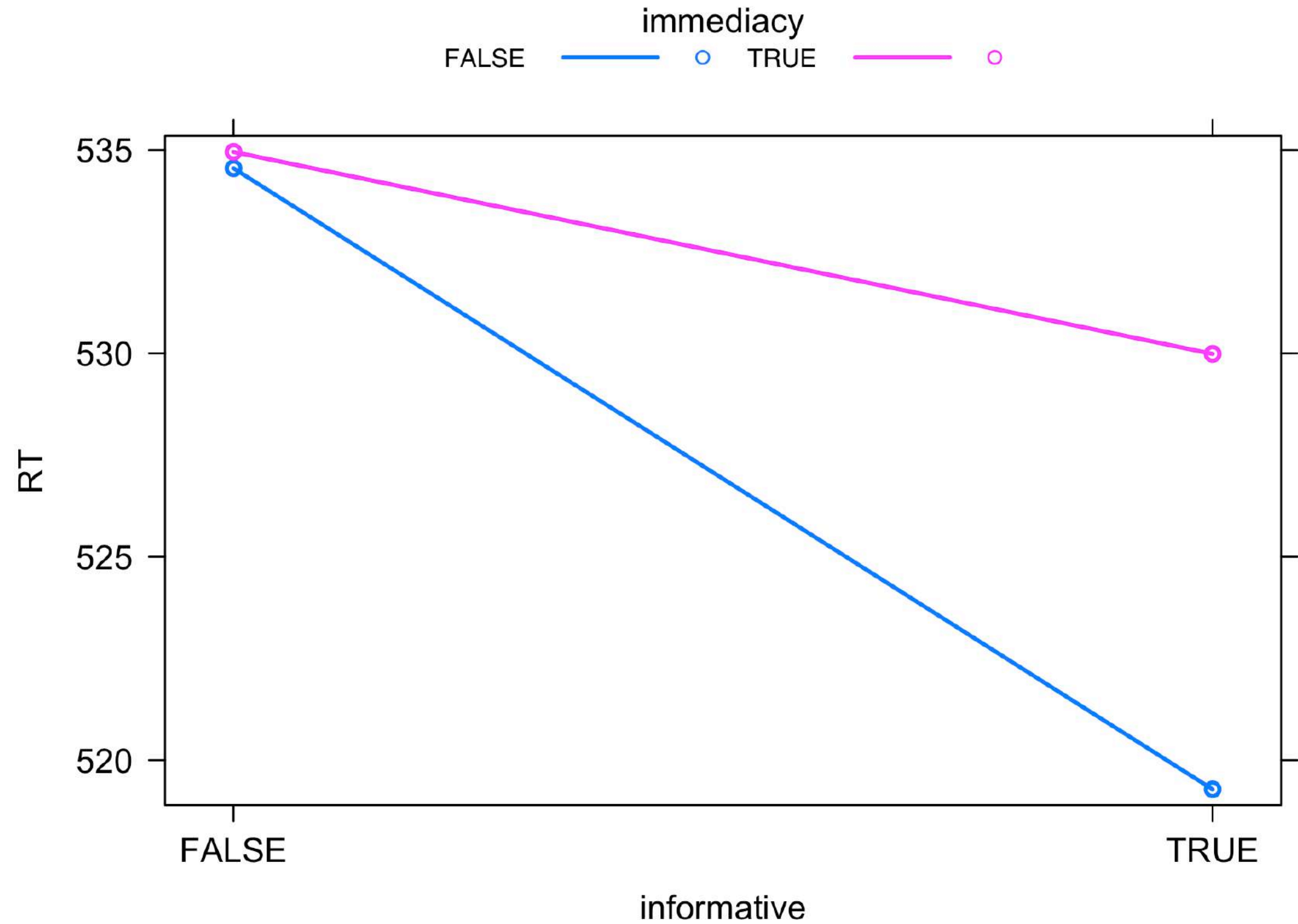


ANALYSIS

- Analysis using mixed-effects linear regression models
- Dependent variable: Reading time
- Predictor variables: Informativity, immediacy, sex and age, interaction between informativity and immediacy
- Random effects: Participant ID, test item (=dialogue)

GERUNDS

informative*immediacy effect plot

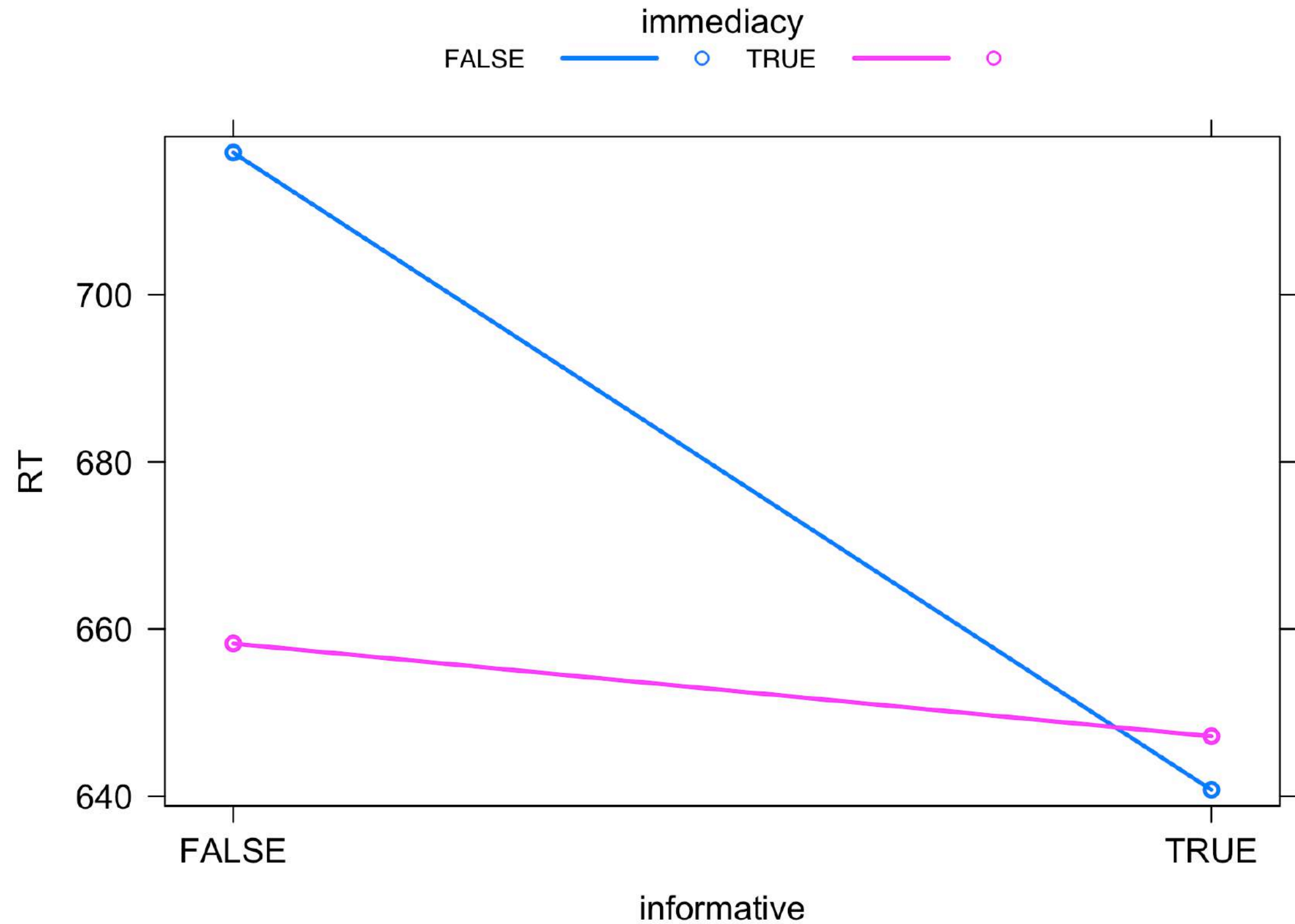


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OBJECTS

informative*immediacy effect plot



DISCUSSION

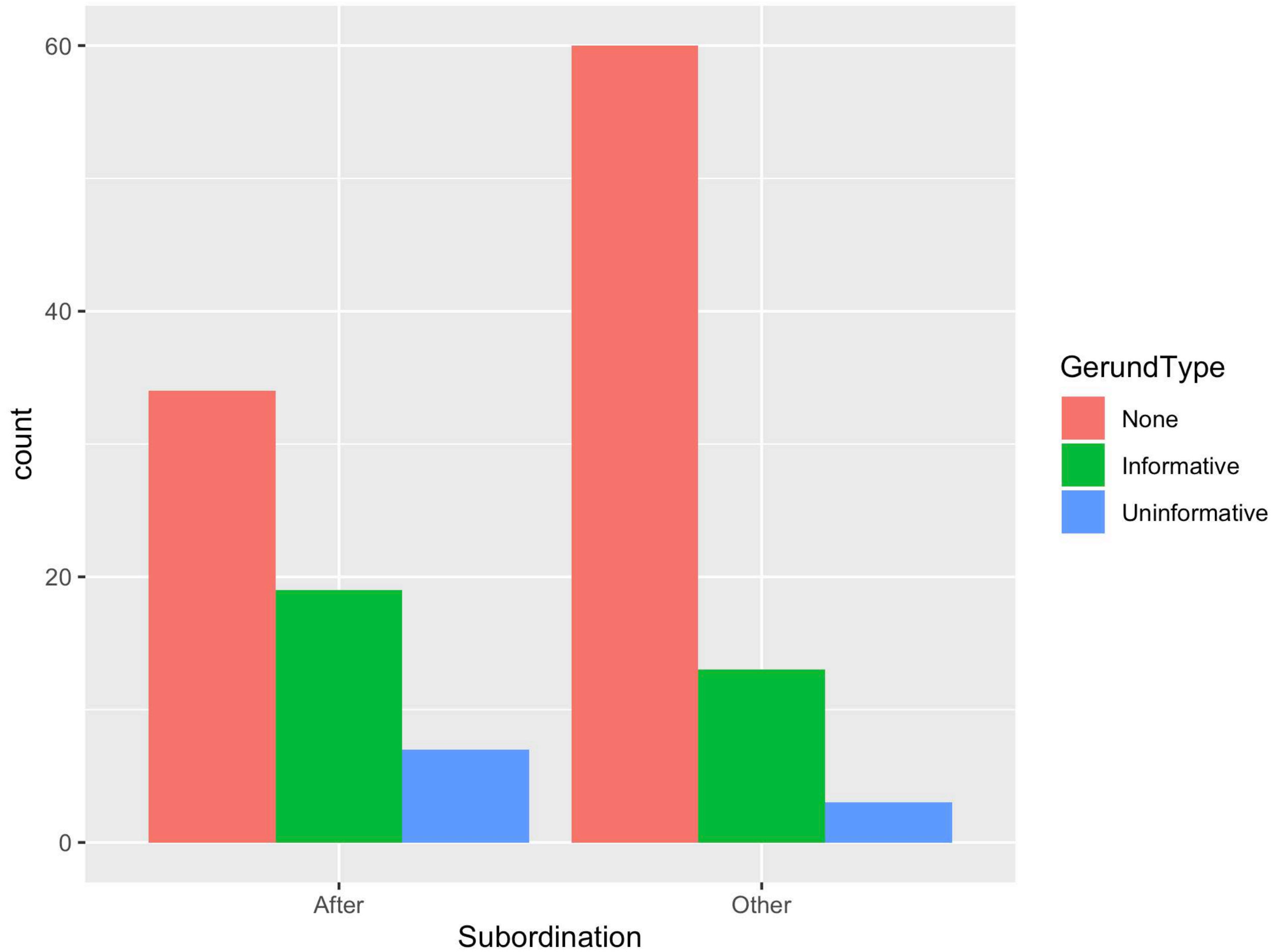
- No statistically significant evidence for Hypotheses 1-2, although
 1. In general, informative gerunds and objects following informative gerunds are read faster than uninformative gerunds and object following uninformative gerunds (H1)
 2. The informativity – immediacy interaction affects RTs of gerunds and objects differently:
 - Informative gerunds are more expected in non-immediacy contexts than in immediacy contexts
 - Objects following uninformative gerunds are more expected in immediacy than in non-immediacy contexts (H2)

SOME CORPUS DATA

- Extraction of all $n=513$ tokens of “(she/he) had finished” from the COCA corpus of American English (Davies 2020)
- Reduction to the relevant variational envelope (transitives in which the object refers to an artifact) --> $n=136$ tokens



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WHEN DO GRAMMATICALIZATION PATHWAYS RECUR?

- It seems that PdE speakers do not make the same inferences that Old Spanish speakers did when confronted with ‘finish’ constructions with uninformative verbal complements
- Or at least they do so to a much lesser extent (consider the small effect sizes in the regression model)
- The results from the corpus study suggest that in English, the mere presence of a gerund is a better predictor for immediacy than the informativity of the gerund



WHEN DO GRAMMATICALIZATION PATHWAYS RECUR?

- Is this evidence against the **uniformitarian principle**, i.e. that “knowledge of processes that operated in the past can be inferred by observing ongoing processes in the present” (Christy 1983: ix, cited in Labov 1994: 21)?

