



Cross-linguistic investigation of argument structure:
experimental and observational research
DeMiNeS Summer School
August 28-30, 2019

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Lecture I.

Theoretical prerequisites and empirical results

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Lecture II.

Introduction to empirical design

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Roadmap

- schedule

outline of the contents to be covered by the units of this lecture, which focus on several data-gathering methods for cross-linguistic research

- theoretical background

core questions of the current research on argument structure, with emphasis on the syntax of canonical/agentive vs. experiencer verbs.

source of cross-linguistic differences and methodological challenges for comparative studies

- empirical evidence

several methodological approaches focussing on cross-linguistic acceptability studies and corpus data

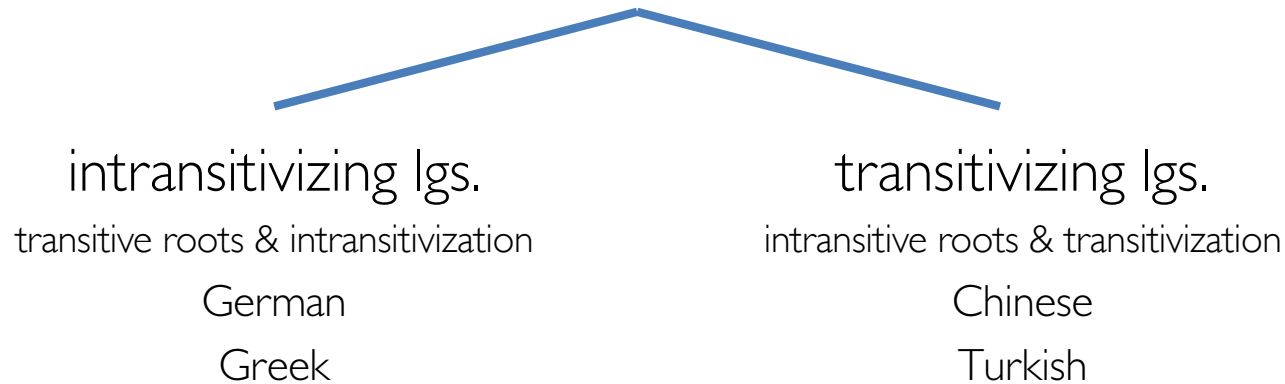
Cross-linguistic investigation of argument structure

Overview of the lecture units

Lecture I:

Theoretical prerequisites and empirical results

- introduction to **psych verb grammar**
- **typological considerations**: object experiencer verbs



- **Cross-linguistic acceptability study**: (non-)AGENTIVITY as determinant of psych verb grammar
- **Cross-linguistic corpus study**: choice of WORD ORDER with EO psych verbs

Lecture 2:

Introduction to empirical design

Empirical design for

an experimental study on the licensing of object preposing with psych verbs

- Hypotheses
- Factorial design
- Relevant sources of variation
- Outcomes of a factorial design

Cross-linguistic investigation of argument structure

Theoretical background

thematic roles and syntactic functions

(I)	agent	patient
	[nominative	[_{VP} -nominative V]]

Several differences between subjects and non-subjects are cross-linguistically attested (even if they are not universally generalizable):

- **binding**
Subjects bind non-subjects: subjects vs. non-subjects
- **valency-change operations**
Objects can be promoted to subjects through passivization: objects vs. non-objects
- **conditions on extraction**
Out of governed constituents can be extracted: objects vs. adjuncts/subjects.
- **conditions on resumption**
In some languages, topicalized non-subjects must be resumed by weak pronouns (clitic doubling/clitic left dislocation) (the array of arguments depends on language).
- **linearization properties**

thematic roles and syntactic functions

(I) agent patient
 [nominative [_{VP} -nominative V]]

- binding
- valency-change operations
- conditions on extraction
- conditions on resumption
- linearization properties

Crucially, some areas of the verbal lexicon behave **exceptionally** with respect to these properties. This exceptionality is informative for our assumptions about the nature of the syntactic properties at issue as well as about the mapping of thematic roles to syntactic functions.

thematic roles and syntactic functions

(2) Mary *hit* John.

agent

patient

[nominative [_{VP} -nominative V]]

Object experiencer verbs with a [–agentive] stimulus behave like unaccusative verbs, i.e., they have a lower nominative argument: (cf. [Belletti & Rizzi 1988](#), [Landau 2010](#), etc.)

(3) Mary *annoys* John.

experiencer

stimulus

[_{VP} -nominative [nominative V]]

exceptional binding properties

Canonical tr. verbs: subjects bind objects (forward binding).

Experiencer-object verbs show exceptional behaviour.

(4) a. Canonical verbs

Peter und Paul schlagen sich gegenseitig.

Peter and Paul hit REFL each.other

b. Experiencer-object verbs

*Peter und Paul wundern/interessieren sich gegenseitig.

Peter and Paul astonish/concern REFL each.other

exceptional binding properties

Canonical tr. verbs: objects cannot bind into subjects (weak crossover effect).
Experiencer-object verbs show exceptional behaviour ([backward binding](#)).

- (5) a. Canonical verbs
*His_i doctor visited every patient_i;
- b. Experiencer-object verbs
His_i health worries every patient_i;
([Reinhart 2002](#))

Binding data reported for English, Italian, German ([Belletti & Rizzi 1988](#), [Pesetsky 1995](#), [Platzack 2009](#), [Kiss 2012](#))

exceptional properties in passivization

Canonical tr. verbs: objects can be promoted to subjects through passivization.

Experiencer-object verbs show exceptional behaviour. (see Belletti & Rizzi 1988, Landau 2010, Verhoeven 2010, etc.)

(6) a. Canonical verb

Der Lehrer lobt den Schüler.

the(NOM) teacher praises the(ACC) pupil

Der Schüler **wird** von dem Lehrer **gelobt**.

the(NOM) pupil is by the(DAT) teacher praised

b. Experiencer-object verb

Der Lehrer wundert den Schüler.

the(NOM) teacher astonsihes the(ACC) pupil

*Der Schüler **wird** von dem Lehrer **gewundert**.

the(NOM) pupil is by the(DAT) teacher wondered

exceptional linearization properties

Canonical tr. verbs: OVS order is contextually restricted in German (it must be licensed by topicalization/focussing). Experiencer-object verbs differ: the OVS order may appear out of the blue. (Lenerz 1977b, Primus 1995, 2004, Bayer 2004)

(7) a. Canonical verb

Der Lehrer lobt den Schüler. (SVO: c-unrestricted)

the(NOM) teacher praises the(ACC) pupil

Den Schüler lobt der Lehrer. (OVS: c-restricted)

the(ACC) pupil praises the(NOM) teacher

b. Experiencer-object verb

Der Lehrer interessiert den Schüler. (SVO: c-unrestricted)

the(NOM) teacher interests the(ACC) pupil

Den Schüler interessiert der Lehrer. (OVS: c-unrestricted)

the(ACC) pupil interests the(ACC) teacher

verb classes or thematic properties?

A relevant insight of the related research is that at least a subset of the exceptional properties of experiencer-object verbs is not just lexically determined by the **verbal head**, but depends on the **thematic properties** of the stimulus argument. (e.g. Arad 1998, Verhoeven 2009, Landau 2010)

The crucial property is the **agentivity** of the stimulus:

- **agentive stimuli** behave like **agents**
- **non-agentive stimuli** differ from **agents**

i.e., the EO constructions only show exceptional properties in the latter case.

verb classes or thematic properties?

i.e., the EO constructions only show exceptional properties in the latter case.

(8) a. Experiencer-object verb: agentive reading

Der Lehrer ärgert den Schüler (absichtlich).
the(NOM) teacher annoys the(ACC) pupil (on purpose)

Der Schüler **wird** von dem Lehrer (absichtlich) **geärgert**.
the(NOM) pupil is by the(DAT) teacher (on purpose) annoyed

b. Experiencer-object verb: non-agentive reading

Die Note ärgert den Schüler (*absichtlich).
the(NOM) mark annoys the(ACC) pupil (on purpose)

*Der Schüler **wird** von der Note **geärgert**.
the(NOM) pupil is by the(DAT) mark annoyed

cross-linguistic variation: binding

The exceptional properties do not hold for experiencer-object verbs in any language. See the following contrasts:

(9) a. German EO verb and forward binding

*Peter und Paul	wundern/interessieren	sich	gegenseitig.
Peter and Paul	astonish/concern	REFL	each.other

b. Chinese EO verb and forward binding

Lǎoshī hé xuéshēng	(wúyìjiān)	xiānghù	jīnù-le.
Teacher and student	unconsciously	each.other	enrage-PFV

(Verhoeven 2010:112f.)

cross-linguistic variation: passivization

The exceptional properties do not hold for experiencer-object verbs in any language. See the following contrasts:

(10) a. German EO verbs and passivization

*Der Schüler **wird** von dem Lehrer **gewundert**.
the(NOM) pupil becomes by the(DAT) teacher wondered

b. Turkish EO verbs and passivization

Yaya (polis tarafından) üz-dür-ül-dü.
Pedestrian policeman by sadden-CAUS-PASS-PFV

(Verhoeven 2008:88)

Root of cross-linguistic differences

- Background

Exceptional EO properties appear within a subset of the verbal lexicon, i.e. with Experiencer-Object verbs that do not allow for agentive readings (e.g., *concern, interest, etc.*).

- Hypothesis

Languages that do not display exceptional properties (e.g., Turkish and Chinese in the previous examples) do not possess such verbs.

- Role of morphology

This may be influenced by the morphological decomposition of verb stems, in particular by the presence of causativizing morphology.

Cross-linguistic differences

	intransitive		transitive
transitivizing	Turkish	x y <i>sevin-di</i> 'x is happy about y'	→ y x <i>sevin-dir-di</i> 'y makes x happy' (causativization)
	Yucatec	<i>chi'chnak ti'</i> y x 'x is annoyed about y'	→ <i>chi'chnak-kuns-</i> x y 'y annoys x' (causativization)
intransitivizing	Greek	x <i>enđiafere</i> te ja y 'x is interested in y' (mediopassive)	← y <i>enđiaféri</i> x 'y interests x'
	German	x <i>ärgert sich</i> über y 'x is annoyed by y' (reflexive)	← y <i>ärgert</i> x 'y annoys x'
underspecified	Hungarian	<i>megrém-ül</i> x y-tól 'y gets frightened by x'	· - - - <i>megrém-ít</i> y x 'y frightens x'
	English	x <i>worries</i> about y	· - - - y <i>worries</i> x

Cross-linguistic differences

between verbs or between languages?

Inventory of basic lexicalizations: 17 - 119 alternating verb pairs from the basic psych domains

Beyond the available **variation**, most languages have a **dominant strategy** in the verbal inventory.

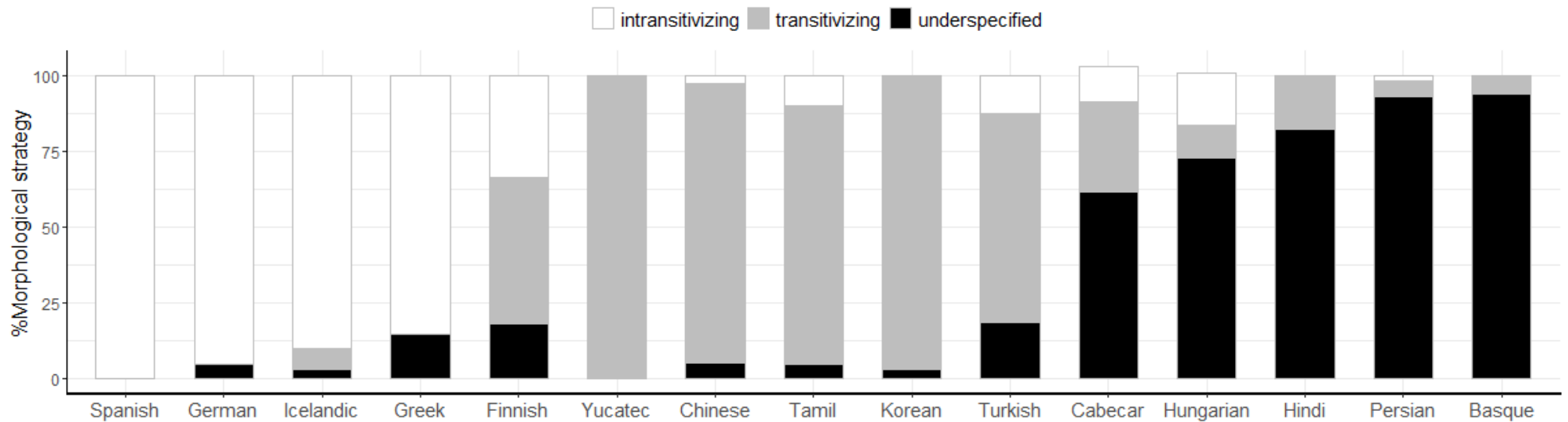


Fig. 1 Morphological process in the formation of EO/ES verbs (Rott, Verhoeven, Fritz Huechante 2018)

Cross-linguistic differences

Morphological typology

```
graph TD; A[Morphological typology] --> B[intransitivizing lgs.]; A --> C[transitivizing lgs.]; A --> D[underspecified]; B --- B_desc[transitive roots & intransitivization]; C --- C_desc[intransitive roots & transitivization]; D --- D_desc[no asymmetry]; B --- B_langs[German, Greek, Icelandic, Spanish]; C --- C_langs[Turkish, Yucatec Maya, Tamil, Chinese, Korean]; D --- D_langs[Basque, Hungarian, Cabécar, Persian, Hindi];
```

intransitivizing lgs.

transitive roots & intransitivization

German
Greek
Icelandic
Spanish

transitivizing lgs.

intransitive roots & transitivization

Turkish
Yucatec Maya
Tamil
Chinese
Korean

underspecified

no asymmetry

Basque
Hungarian
Cabécar
Persian
Hindi

Cross-linguistic differences

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intransitivizing lgs.

transitive roots & intransitivization

German

Greek

Icelandic

Spanish

transitivizing lgs.

intransitive roots & transitivization

Turkish

Yucatec Maya

Tamil

Chinese

Korean

underspecified

no asymmetry

Basque

Hungarian

Cabécar

Persian

Hindi

Research question

Do the cross-linguistic differences in verbal morphology have correlates in the semantics/syntax of the verbs? Or is morphological variation just a random factor for the creation of verbal inventories?

Line of argumentation:

- (a) languages differ with respect to the root expressions of **psych verbs**
- (b) this typology is relevant for the semantics of the root: **agentivity**
- (c) agentivity has repercussions for the syntax: **non-canonical subject properties**

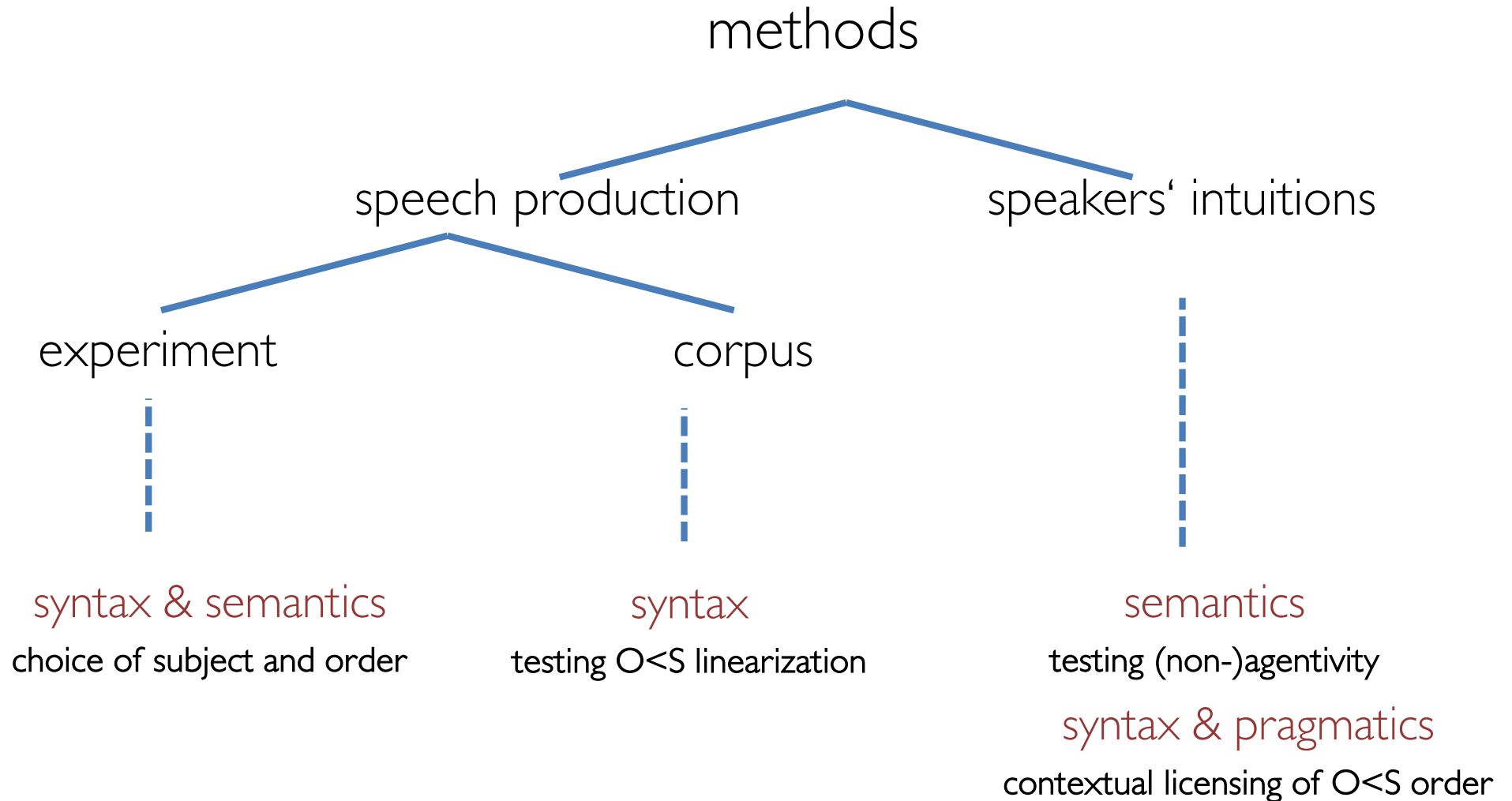
Methodological challenges

The relevant phenomena (contextual licensing of word order, binding properties, possibilities of extraction, passive formation) involve **variation**. Solid empirical methods are required in order to get precise and replicable results.

- experimental acceptability, (e.g. Haupt et al. 2008);
- neurocognitive studies of language comprehension (e.g. Bornkessel 2002, Bornkessel et al. 2005);
- corpus (e.g. Bader & Häussler 2010)

Aim: to develop empirical methods for establishing precise comparable data for the study of cross-linguistic differences.

Methods



Cross-linguistic investigation of argument structure

Empirical results

Semantics

Agentivity

Several diagnostics:

- embedding under control verbs
 - compatibility with intentional adverbs
 - imperative formation
- etc.

reveal that EO verbs vary:

- some EO verbs are compatible with an agentive reading
- other EO verbs are not compatible with an agentive reading

Roeper 1987; Klein & Kutscher 2002; Verhoeven 2010a; Grafmiller 2013, etc.

Agentivity

Illustration (German) Cf. Verhoeven 2017

Embedding under control verbs:

X entschied, Y zu V

‚X decided to VY‘

Compatibility with intentional adverb:

X V Y absichtlich

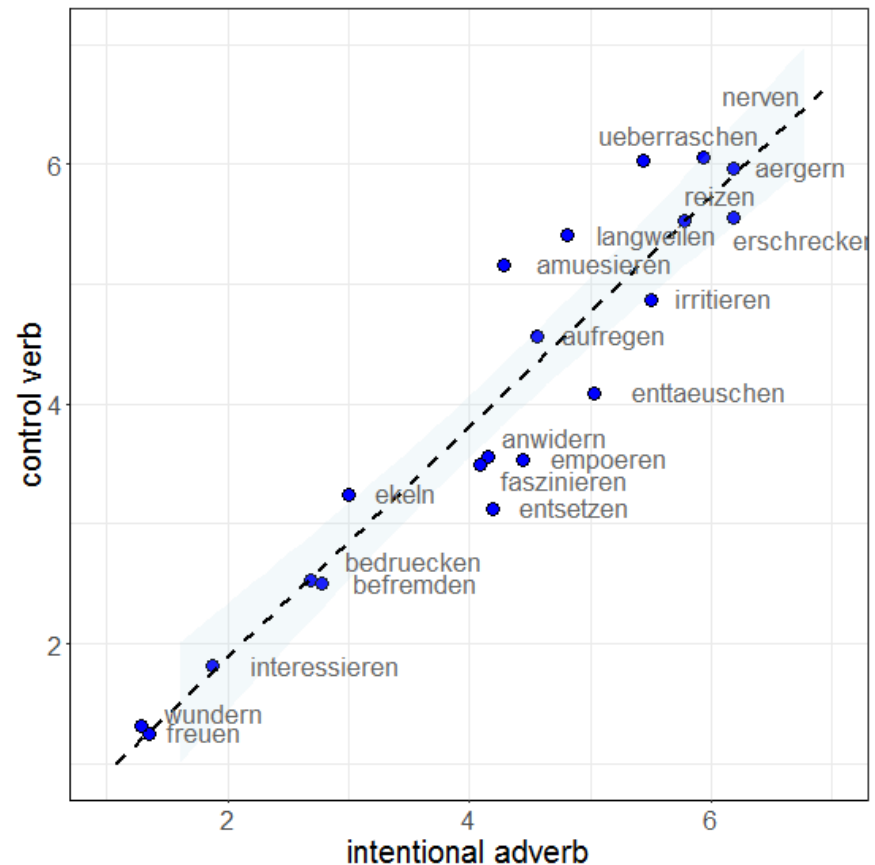
‚X V Y on purpose‘

Result

- tests are **correlated**: i.e., a part of the variation in the individual tests is due to a property of the lexical semantics
- the result involves **gradience**

Fig. 2 Agentivity tests with German EO verbs

scalar acceptability: 1 = non-acceptable; 7 = acceptable
n of speakers: 32, 20 female, age range 17-52



Agentivity

Recall

Type A: transitive roots & intransitivization (German, Greek, Spanish, Icelandic)

Type B: intransitive roots & transitivization (Turkish, Yucatec Maya, Korean, Tamil, Chinese)

Question

The distinction between **–agentive** and **±agentive verbs** is reported for intransitivizing languages (e.g., German). Is it **generalizable** across languages?

Method Cf. Verhoeven 2010a

- selection of **four potentially non-agentive verbs** through elicitation, based on an inventory of 60 experiential concepts.
- control conditions: **agentive** (canonical transitive verbs) and **non-agentive** (dative-experiencer verbs).
- Acceptability judgments on different agentivity tests with a repeated-observations design (16 speakers per language).

Agentivity

Background

Volitional involvement is a prerequisite for agenthood

Dowty 1991, Lehmann 1991, Van Valin & Wilkins 1996,

Van Valin & LaPolla 1997, Primus 1999

Conditions

canonical

Das Mädchen **schubst** den Jungen absichtlich.

The girl is **jostling** the boy intentionally.

exp-object

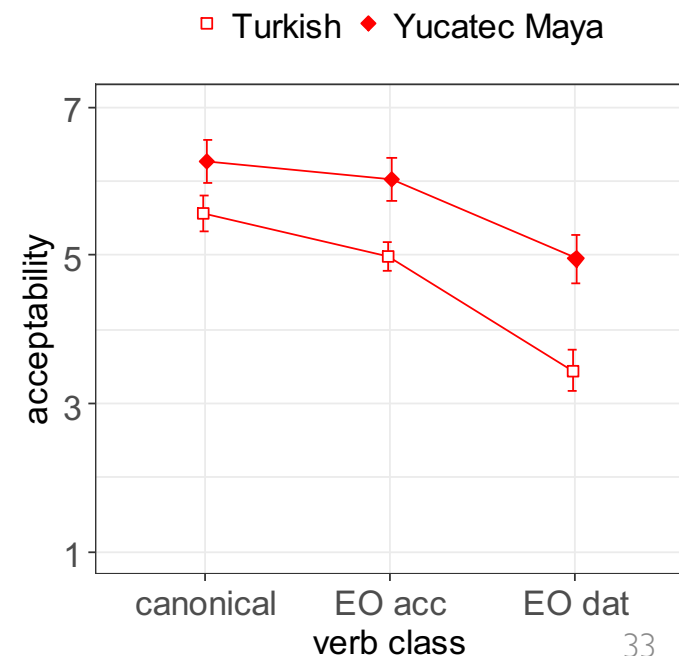
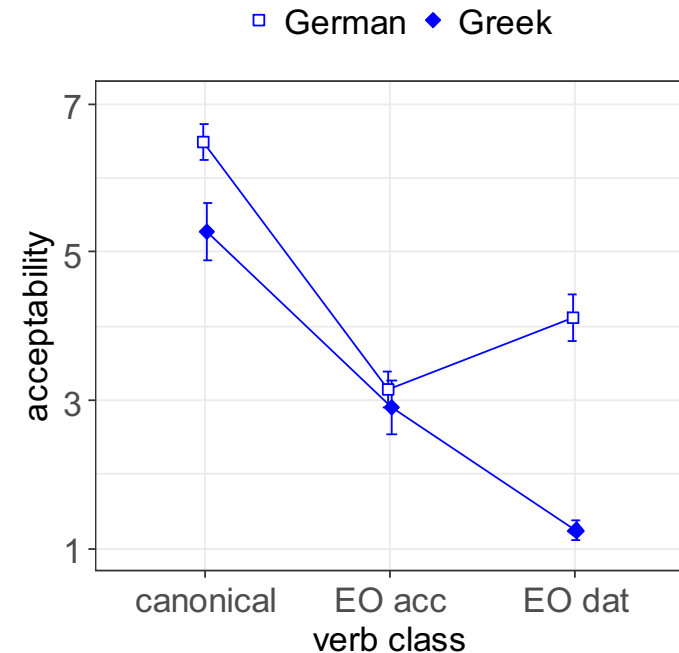
Das Mädchen **interessiert** den Jungen absichtlich.

The girl **concerns** the boy intentionally.

exp-subject

Der Junge **gefällt** dem Mädchen absichtlich.

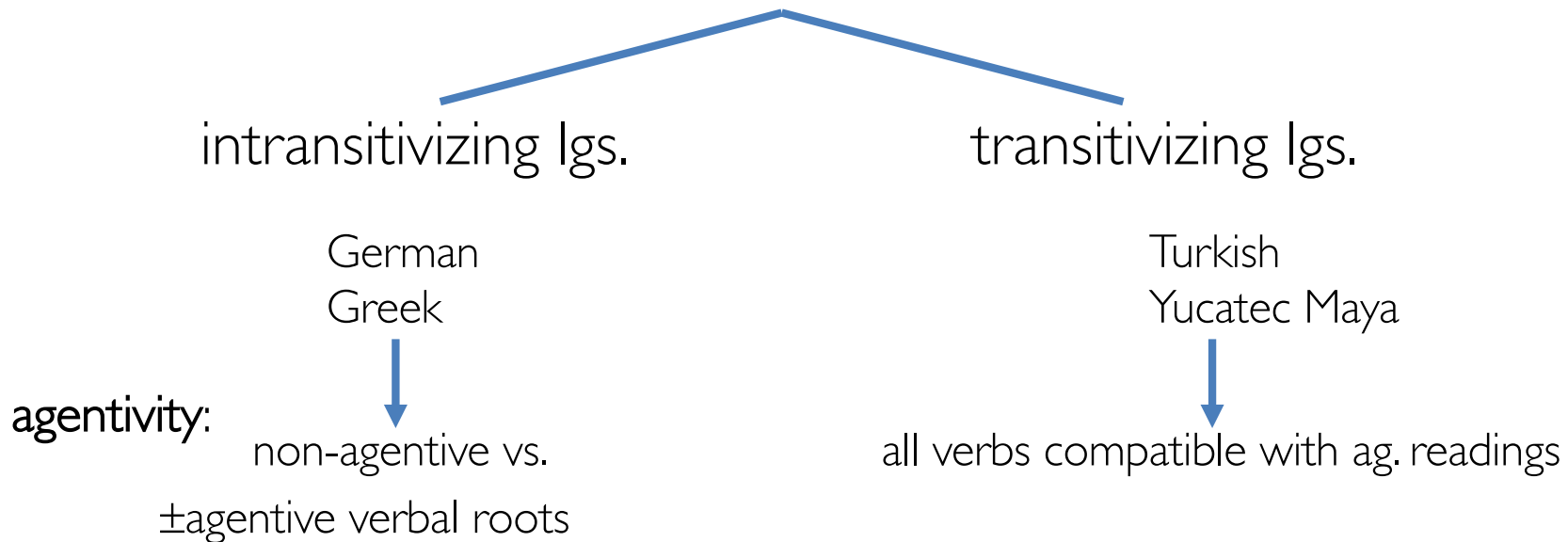
The boy **pleases** to the girl intentionally.



Agentivity cross-linguistically

similar results obtained in imperative test and stativity tests; Verhoeven 2010a

Morphological typology

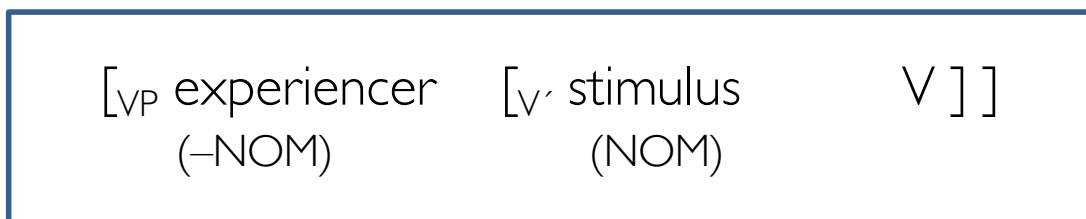


Intuition

Transitive roots of type-A languages are flexible to develop various sem. properties, while verbal stems in type-B languages bear a morphological expression of CAUSE.

Syntax

Non-canonical EO-properties



(a) advantage for -NOM \prec NOM in linearization;
single obs., (e.g. Fanselow 2000, 2003, Haider & Rosengreen 2003, Bayer 2004, Landau 2010)
experimental acceptability, (e.g. Haupt et. al. 2008);
neurocognitive studies of language comprehension (e.g. Bornkessel 2002, Bornkessel et al. 2005);
corpus (Bader & Häussler 2010, Verhoeven 2015)

(b) reflexes of the c-command relation $[_{VP}$ experiencer $[_{V'}$ stimulus ...
Backward binding in English, Italian, etc. (e.g. Belletti & Rizzi 1988, Pesetsky 1995);
German (Platzack 2009, Kiss 2012)
experimental study on variable binding (Temme & Verhoeven 2017)
Forward binding in Italian, etc. (e.g. Belletti & Rizzi 1988, Landau 2010); difference between non-
canonical (German) and canonical psych verbs (Chinese) (e.g. Verhoeven 2010b)

Binding properties

Backward binding: German

Sein_i Gesundheitszustand beunruhigt jeden Patienten_i.

His_i health worries every patient_i.

*Sein_i Arzt besucht jeden Patienten_i.

*His_i doctor visited every patient_i.

(cf. Reinhart 2002, experimental evidence
Temme & Verhoeven 2017)

Binding properties

Forward binding: German vs. Turkish/Chinese

Tur Arkadaş-lar küçük hediyelerle birbirlerinin sevin-dir-di-ler.
friend-PL small presents-PL-with each.other-3.PL.POSS-ACC happy-CAUS-PFV-PL
Friends made each other happy with small presents. (G. Yilmaz)

Chi lǎoshī hé xuéshēng (wúyìjiān) xiānghù jīnù-le.
teacher and student (unconsciously) each.other enrage-PFV
Teacher and student enraged each other (unconsciously).

Ger **Lehrer und Schüler wunderten/interessierten sich gegenseitig.*
Teacher and student amazed/intrigued each other.

Linearization properties

Illustration in the following: preferences in a parallel corpus study

Further related studies:

Speech production (O<S linearization and subject choice)

German/Greek: independent verb-class effect in the choice of active vs. non-active voice

Turkish/Chinese: the experiencer-first effect is reducible to animate-first.

(Verhoeven 2014)

Forced-choice study ((non-)contextual licensing of O<S, accusative vs. dative verbs)

German/Hungarian: verb-class effect in the licensing of O<S (psych verbs vs. can. causatives)

Korean: no experiencer-first effects with causative EO verbs

(Temme & Verhoeven 2016)

Corpora

German	<i>W-öffentlich of COSMAS database, IDS, 2.291.520.000 word forms;</i>
Greek	<i>Hellenic National Corpus (HNC), ILSP, 47.000.000 word forms;</i>
Turkish	<i>TS Corpus, Taner Sezer, Mersin University, 491.000.000 word forms;</i>

extracted	10 verbs for every verb class (two verb classes: EO vs. canonical tr.) 250 tokens per verb (randomized) total 5000 sentences per language
valid	declarative main clauses (active verbs, with two arguments: sbj, obj, either lex. or pron.)

Verb classes

EXPERIENCER-OBJECT PSYCH VERBS

interessieren 'concern', faszinieren 'fascinate', beeindrucken 'impress', erschrecken 'frighten', wundern 'amaze', enttäuschen 'disappoint', etc.

CANONICAL TRANSITIVE VERBS

beeinträchtigen 'impair', behindern 'hinder', schützen 'protect', heilen 'heal', retten 'rescue', vergiften 'poison', infizieren 'infect', ruinieren 'ruin', etc.

Diese Geschichte fasziniert/beeinträchtigt den amerikanischen Wähler.

This story fascinates/impairs the American voter.

Den amerikanischen Wähler fasziniert/beeinträchtigt diese Geschichte.

The American voter is fascinated/impaired by this story.

Referentiality

ANNOTATING THE REFERENTIALITY OF THE ARGUMENTS

Referentiality scale

zero > personal pronoun > definite NP > bare NP > indefinite NP

German

person > definite|proper|possessed > indefinite

Greek

zero > person > definite|proper|demonstrative > indefinite

Turkish

zero > person > proper|dem.|acc. > bare > indefinite

➤ Disharmonic configuration: ACTOR (= ag, stim) $\leftarrow_{\text{referentiality}}$ UNDERGOER (= exp, pat)

Referentiality

Disharmonic configuration (actor $<_{\text{referentiality}}$ undergoer)

(1) German: actor=indefinite, undergoer=definite

Den Regisseur interessiert von nun an eine Frage.
the director.ACC interests from now on one question.NOM
'From now on the director is interested in one question.' (SOZ06/AUG.00423)

(2) Greek: actor=definite, undergoer=personal pronoun

Πάντως με εξέπληξε ο Μπάγεβιτς, ...
anyway me.ACC surprised the.NOM PN
'Anyway, I was surprised by Bajević, ...'

Referentiality

Other configuration (actor NOT $<_{\text{referentiality}}$ undergoer)

(3) Greek: actor=definite, undergoer=definite

<i>to</i>	<i>PASOK</i>	<i>đen</i>	<i>to</i>
DEF:ACC.SG.N	PASOK:ACC.SG.N	NEG	3.SG.ACC.N

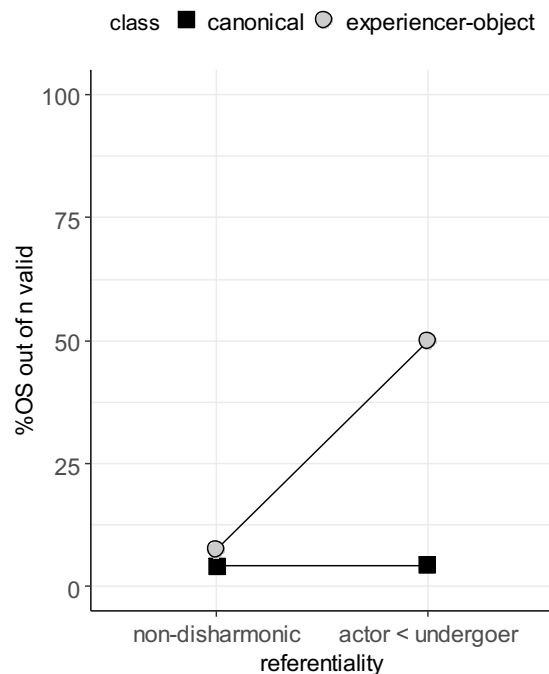
<i>tromázun</i>	<i>i</i>	<i>rukétes</i>
frighten:PRS:3.SG	DEF:NOM.PL.F	rocket:NOM.PL.F

<i>tis</i>	<i>17</i>	<i>Noémvri ...</i>
DEF:GEN.SG.F	17	november:GEN.SG.F

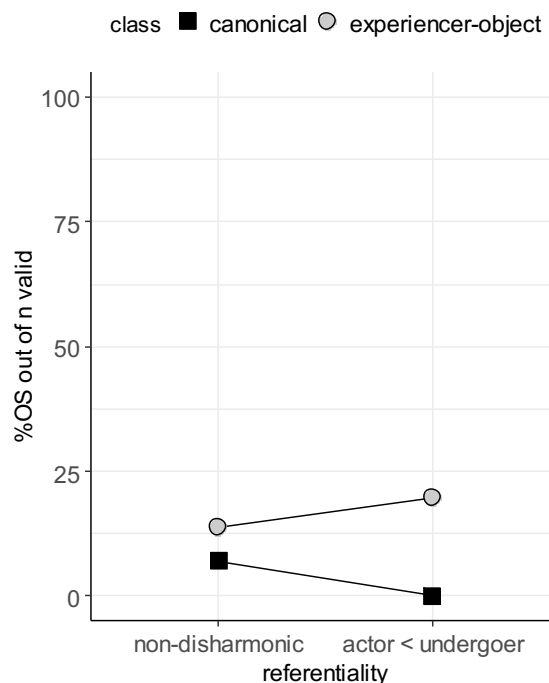
'PASOK is not frightened by the rockets of the 17. November ...'

OS order: EO vs. canonical verbs

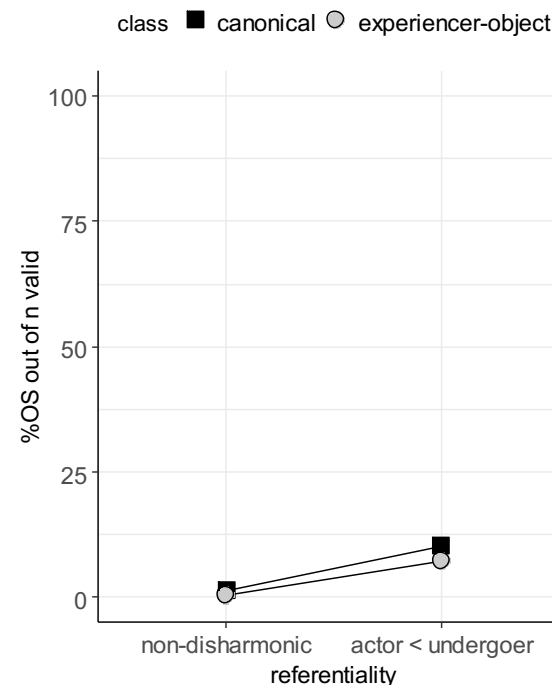
Greek
(n = 873)



German
(n = 744)

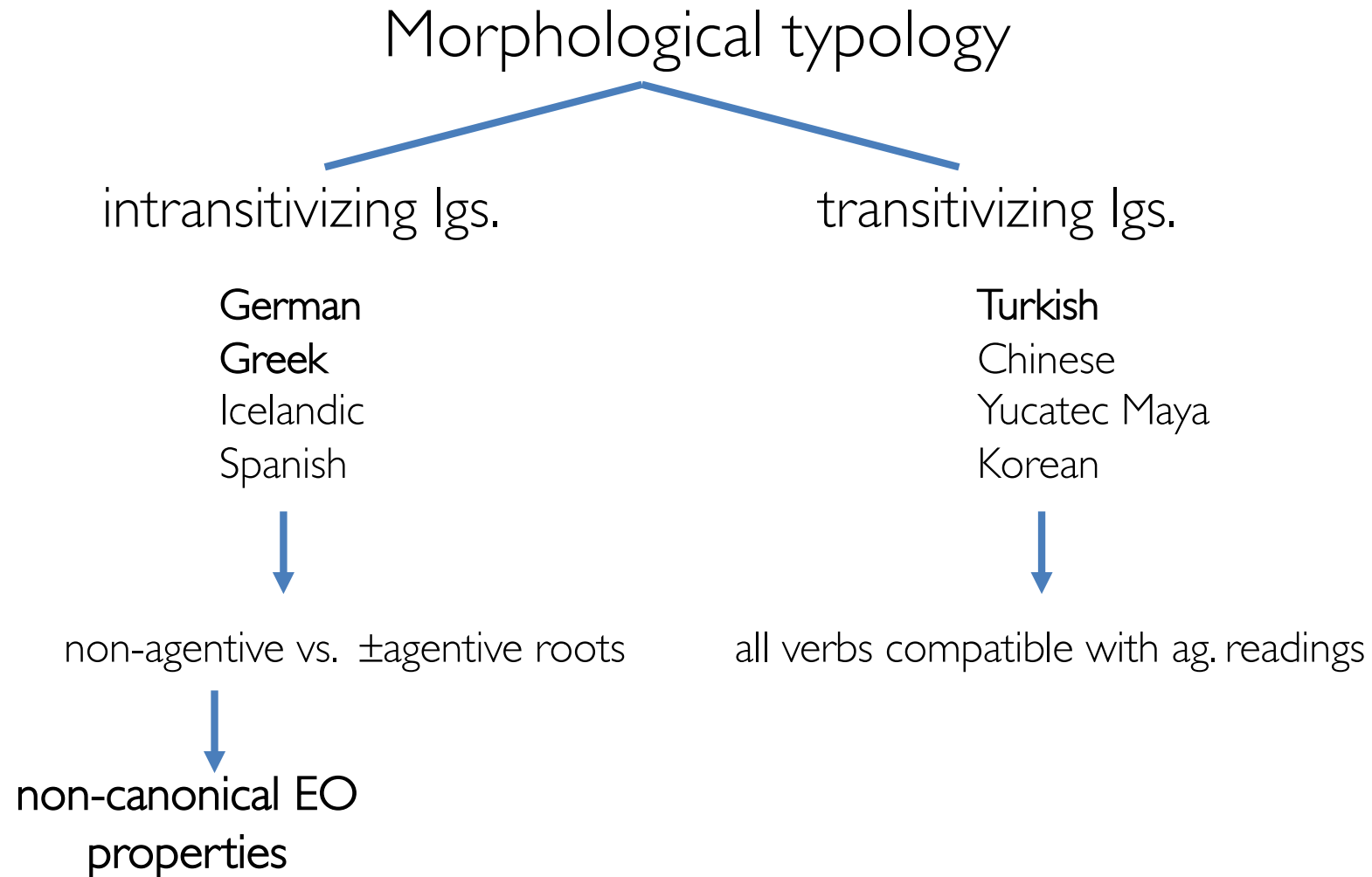


Turkish
(n=676)



In general, our studies in languages with non-canonical EO verbs show that the experiencer-first effects appear if additional factors (=asymmetries in animacy or in referentiality) license experiencer fronting. In this case, there is a verb-class effect, i.e., EO verbs do not behave identical to canonical verbs.

Non-canonical EO-properties



The role of gradience

The role of gradience

- The data presented so far (intuitions of agentivity, corpus frequencies) involve **gradience**.
- This leads to the question of the role of gradience for our understanding of grammar.
- Linguistic theories assume the existence of **discrete features** (see e.g. Kallmeyer & Richter 2014)
- Research on agentivity assumes a **binary distinction**: is there evidence that we need more levels? I.e., would we get better predictions about the relevant syntactic phenomena by a richer representation of lexical semantics?

Gradience in Agentivity?

Where does the gradience in this data come from?

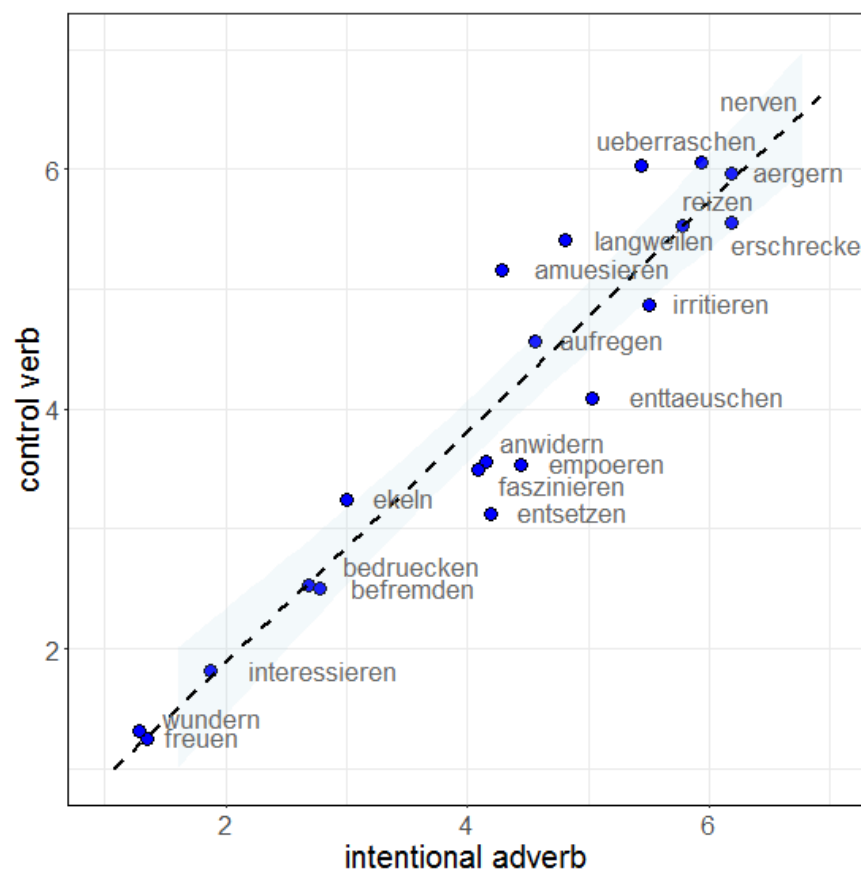
Agentivity is not scalar. A verb either allows for an agentive reading or not.

The scalar judgments reflect the possibility to imagine a context in which the verb is used as agentive. If this is true, the gradience should correlate with the likelihood of such contexts in speech production.

Cf. Verhoeven 2017

Fig. 2 Agentivity tests with German EO verbs

scalar acceptability: 1 = non-acceptable; 7 = acceptable
n of speakers: 32, 20 female, age range 17-52



Some examples

German: variation in acceptability of agentive reading

* *Die Polizistin entschloss sich, Sarah zu freuen.*

The police woman decided to please Sarah.

?? *Der Taxifahrer beschloss, Silke zu entsetzen.*

The taxidriver decided to appall Silke.

? *Anna beschloss, den Pastor zu enttäuschen.*

Anna decided to disappoint pastor.

Hannes beschloss, die Lehrerin zu ärgern.

Hannes decided to annoy the teacher.

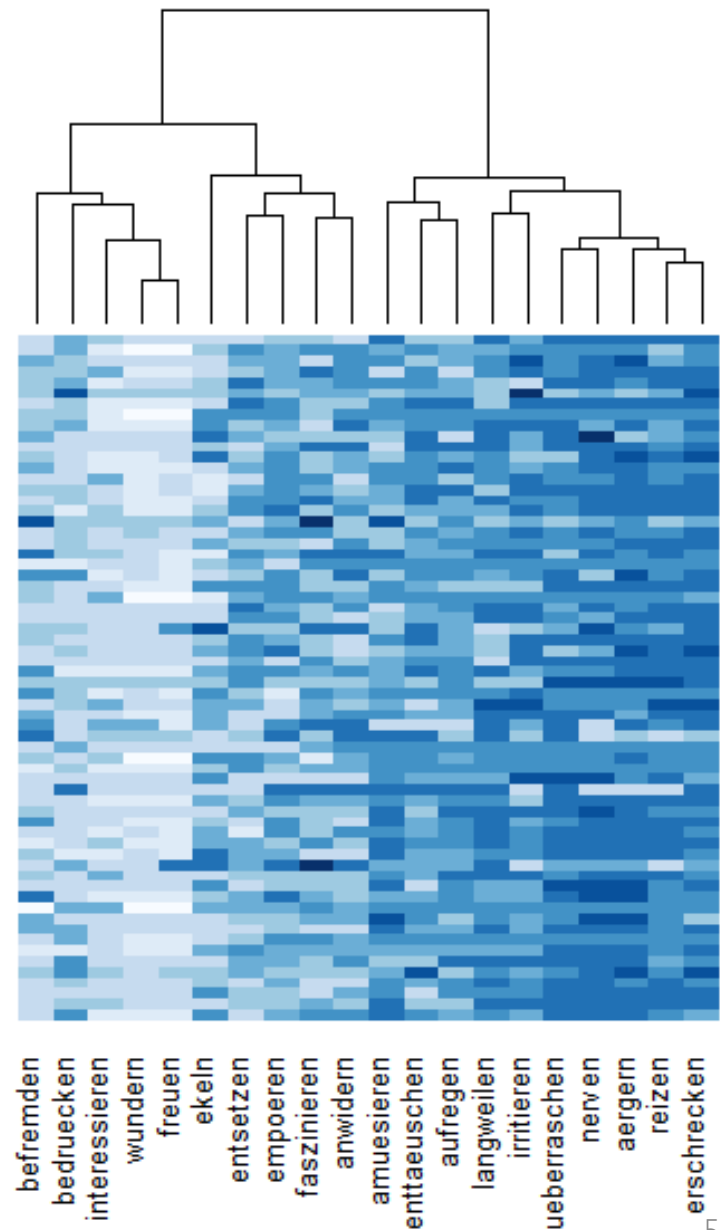
Clustering

Beyond gradience, can we identify verb (sub)classes, that cluster?

Cluster analysis, based on the distances between verbs by the obtained judgments in the two tests.

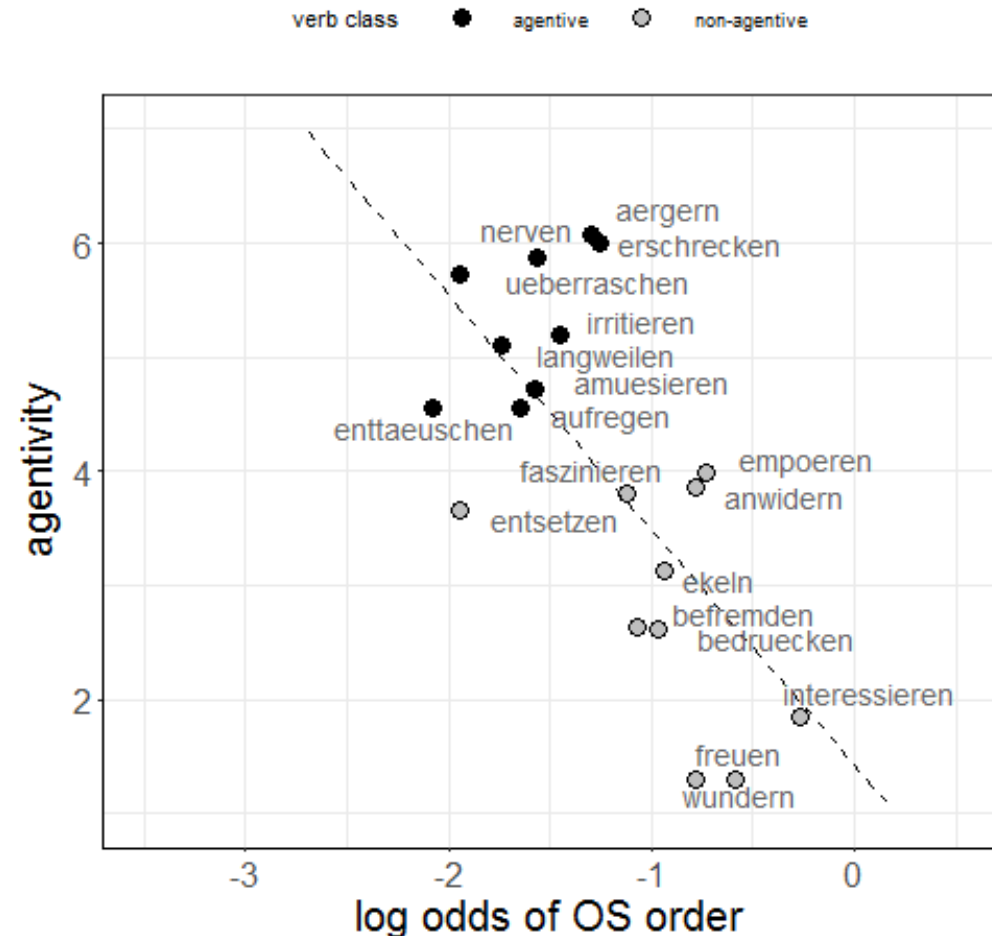
Highest clustering: 10 agentive vs. 10 non-agentive verbs.

Can we predict the frequencies of OS by means of the agentivity judgments?



Interaction with word order

Even if the agentivity tests involve gradience, do we need this gradience for understanding syntax? I.e., does the retrievability of agentive contexts predict the likelihood of OS order?

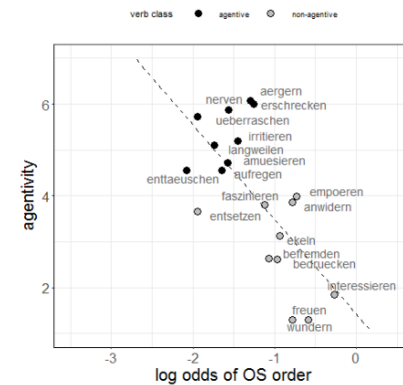
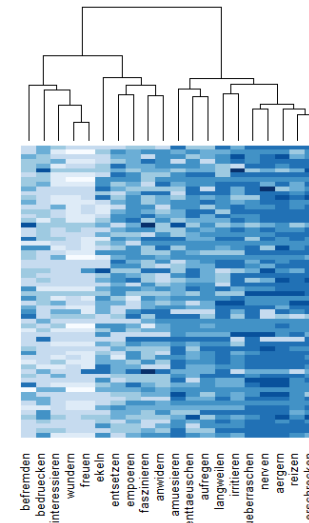


Modelling

Comparing regression models assuming different levels of the factor VERB
 (A: scale; B-G: levels of the cluster analysis)

Model		df	residual deviance	BIC
A	> > > > > > > > > > > > > > > > > > >	2	2188	2204
B		2	2187	2203
C		4	2184	2215
D		8	2182	2243
E		13	2175	2274
F		18	2161	2298
G		20	2153	2306

wundern	entsetzen	amüsieren	überraschen	nerven	erschrecken	ärger
freuen	empören	langweilen	irritieren	reizen		
interessieren	faszinieren	amüsieren	aufregen			
bedrücken	anwidern	enttäuschen				
befremden	enttäuschen	aufregen				
ekeln	entsetzen	amüsieren				
	empören	langweilen				
	faszinieren	amüsieren				
	anwidern	enttäuschen				
	enttäuschen	aufregen				
	amüsieren	langweilen				
	irritieren	überraschen				
	überraschen	nerven				
	nerven	reizen				
	reizen	erschrecken				
	erschrecken	ärger				
	ärger					



Cf. Verhoeven 2017

Summary

Summary

- Morphological structure matters

Languages with root EO verbs differ from languages with derived EO verbs, in that the former are more likely than the latter to have subsets of non-agentive verbs.

- Repercussions for syntax

Non-canonical subject properties appear with non-agentive uses of EO verbs. Such phenomena appear in languages with non-canonical EO verbs. In languages where EO verbs are derived by transitivity devices, these verbs usually behave like canonical verbs.

- Gradience

Data involving repeated observations involve gradience. A part of this gradience may be relevant for linguistic modelling of the observed phenomena - however, it should not be taken for granted that every instance of gradience in the data does so (it is rather an empirical question, in which cases gradience is relevant).

Appendix

Morphological directionality

Language	Bases total	%ES	%EO	%Double
Icelandic	30	6.67	90	3.34
Spanish	119	0	100	0
Korean	59	96.61	0	3.39
Chinese	75	92	2.67	5.34
Tamil	20	85	10	5
Turkish	64	68.75	12.5	18.75
Cabécar	26	29.92	11.54	61.54
Hungarian	46	10.87	17.39	72.74
Hindi	17	17.65	0	82.35
Persian	57	5.26	1.75	92.98
Basque	17	5.89	0	94.11
Finnish	60	48.34	33.34	18.34

Table 1 Base orientation of psych verbs (n=590 pairs, cf. Rott et al. 2018)

ES = experiencer subject; EO = experiencer object; Double = double derivation

Turkish

Causativization

Tur Kadın hırsız-dan ürk-er.
woman.NOM robber-ABL be.scared-PRES

‚The woman is scared by the robber.‘

Hırsız kadın-ı ürk-üt-ür.
robber.NOM woman-ACC be.scared-CAUS-PRES

‚The robber scares the woman.‘

Underspecification: Auxiliary change (Nichols et al. 2004)

Tur Delikanlı masal-dan keyif al-ır.
boy.NOM fairy.tale-ABL pleasure get-PRES

‚The young man gets pleasure from the fairy tale.‘

Masal delikanlı-ya keyif ver-ir.
fairy.tale.NOM boy-DAT pleasure give-PRES

‚The fairy tale gives pleasure to the young man..‘

Cf. Rott et al 2018

Basque

Underspecification: auxiliary change (Nichols et al. 2004)

Eus Anaia zahar-a-k mutil-a amorra-tu du.
brother old-DET-ERG boy-DEF.ABS anger-VBLZ HAVE.3SG
,The old brother got the boy angry.'

Eus Mutil-a anaia zahar-a-rekin amorra-tu da.
boy-DEF.ABS brother old-DEF-COM anger-VBLZ BE.3SG
,The boy got angry with the old brother.'

Cf. Rott et al 2018

Elicitation method

Five basic emotion modes (Johnson-Laird & Oatley 1989, Ekman 1994, Turner 2007)

HAPPINESS	sub-goals being achieved	<i>delight, like, enjoy, please, charm etc.</i>
SADNESS	failure of major plan or loss of active goal	<i>sadden, mourn, afflict, depress, etc.</i>
ANGER	active plan obstructed	<i>annoy, anger, hate, irritate, bother, etc.</i>
FEAR	self preservation goal threatened	<i>fear, frighten, worry, terrify, startle, etc.</i>
DISGUST	gustatory goal violated	<i>disgust, nauseate, gross out, repel, etc.</i>

- presentation of simple scenarios,
- further semantic subcomponents: intensity, duration etc. of feeling; animacy of stimulus

Cf. Rott & Verhoeven 2019

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