



e-ΣΕΜΙΝΑΡΙΑ
ΤΟΜΕΑΣ ΓΛΩΣΣΟΛΟΓΙΑΣ
ΤΜΗΜΑ ΦΙΛΟΛΟΓΙΑ
ΣΕΚΠΑ

June 02, 2021

A glimpse into quantitative typology:
a cross-linguistic study of the psych-alternation

Elisabeth Verhoeven,
joint work with Julian A. Rott and Paola Fritz-Huechante
Humboldt-Universität zu Berlin
elisabeth.verhoeven@cms.hu-berlin.de

Introduction

within languages

We know from the **causative alternation** that three basic options for the derivation of transitive/intransitive verbs appear **within languages**, e.g., German:

<i>sinken</i> 'sink'	→	<i>senken</i> 'dip, lower, drop'	(transitivization)
<i>öffnen</i> 'open'	→	<i>sich öffnen</i> 'open'	(detransitivization)
<i>zerbrechen</i> 'break'	↔	<i>zerbrechen</i> 'break'	(underspecification)

- | | | | |
|-----|---|---|--|
| (1) | Die Steuern sinken.
,Taxes are falling.' | → | Die Regierung senkt die Steuern.
,The government lowers taxes.' |
| (2) | Die Lehrerin öffnet die Tür.
,The teacher opens the door.' | → | Die Tür öffnet sich.
,The door opens.' |
| (3) | Die Vase zerbrach.
,The vase broke.' | ↔ | Das Kind zerbrach die Vase.
,The child broke the vase.' |

Introduction

within languages

We know from the **causative alternation** that three basic options for the derivation of transitive/intransitive verbs appear **within languages**, e.g., German:

<i>sinken</i> 'sink'	→	<i>senken</i> 'dip, lower, drop'	(transitivization)
<i>öffnen</i> 'open'	→	<i>sich öffnen</i> 'open'	(detransitivization)
<i>zerbrechen</i> 'break'	↔	<i>zerbrechen</i> 'break'	(underspecification)

(1) [X verb_{intr}] → [Y [X verb_{tr}]]

(2) [Y [X verb_{tr}]] → [X verb_{intr}]

(3) [X verb_{intr}] ↔ [Y [X verb_{tr}]]

Introduction

within languages

We know from the **causative alternation** that three basic options for the derivation of transitive/intransitive verbs appear **within languages**, e.g., German:

<i>sinken</i> 'sink'	→	<i>senken</i> 'dip, lower, drop'	(transitivization)
<i>öffnen</i> 'open'	→	<i>sich öffnen</i> 'open'	(detransitivization)
<i>zerbrechen</i> 'break'	↔	<i>zerbrechen</i> 'break'	(underspecification)

between languages

languages display global preferences in the verbal lexicon for transitive, intransitive or underspecified roots

(Nichols et al. 2004, cf. Haspelmath et al. 2014)

Introduction

psych alternation

test case for language-specific vs. universal tendencies in alternation directionality

- Strong propensity to form alternations:
 - the psych domain is uniquely characterized by alternating pairs that map their arguments onto opposing syntactic functions (cf. *fear* ~ *frighten*; problems for argument linking theories) (e.g. Baker 1988; Belletti & Rizzi 1988; Pesetsky 1995; Landau 2010; Alexiadou & Anagnostopoulou 2020)
- High cross-linguistic heterogeneity in terms of semantic and structural encoding (e.g. Bouchard 1995, Matisoff 1986, Kutcher 2009)

the psych-domain is characterized by

- Special argument mapping properties
 - conceptually prominent (=animate) arg. (=experiencer) is mapped onto the lower syntactic function in one of the alternants
- Special situational and aspectual properties
 - psych verbs typically describe **states** which are largely intangible while still strongly impacting the affected entity (=experiencer)

Introduction

targets of this talk

- inspect a typologically diverse set of languages for valency orientation/directionality in the psych alternation
- test against results of Nichols et al. (2004) on global preferences in the verbal lexicon for transitive, intransitive or underspecified roots
- test selected typological and areal correlations of Nichols et al. (2004)

In a nutshell, we will show that:

- (a) beyond expected variation, most languages display a clear dominant directionality in their psych alternation;
- (b) the Indo-European languages of Europe stand out in being detransitivizing;
- (c) alignment significantly predicts directionality

(Rott, Verhoeven, Fritz-Huechante 2021)

Introduction

further questions

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?

In other studies, we have shown that:

- (a) the psych-alternation typology presented here is relevant for the semantics of the verbs, esp. wrt agentivity;
- (b) agentivity has repercussions for the syntax in terms of non-canonical subject properties, which are generally present with a subclass of transitive verbs in detransitivizing languages, but not in the transitivity languages.

(e.g. Rott, Verhoeven & Fritz-Huechante 2020; Temme & Verhoeven 2016; Verhoeven 2010, 2014; see also Alexiadou & Anagnostopoulou 2020 on the syntax of Greek non-agentive object-experiencer verbs)

Prerequisites

Prerequisites

psych domain

A **psych verb** is any verb that carries **psychological entailments** with respect to one of its arguments (the experiencer). A psychological entailment involves an individual being in a certain mental state. (Landau 2010:137)

- (4) a. Sue's remarks puzzled Peter.
- b. Peter puzzled over Sue's remarks.

three distinct ontological components are required for a psych predicate

- (a) Mental state the psychological content of the predicate
- (b) Experiencer the entity accommodating the mental state
- (c) Stimulus the entity eliciting the mental state

(see e.g. Talmy 1985, Matisoff 1986, Bouchard 1995, Arad 2002, Verhoeven 2007, Landau 2010)

Prerequisites

psych alternation

Belletti & Rizzi's 1988 class II verbs (i.e. object-experiencer verbs as in 5a, 6a) and their intransitive alternants (i.e. subject-experiencer verbs as in 5b, 6b)

- (5) a. *ta nea* *enóxlisan / stenaxórisan / thímosan (...)* *ti Maria.*
 b. *I Maria* *enoxlíthike / stenaxoríthike / thímose* *me ta nea.*
- (6) a. *Sue's remarks* *puzzled / frightened / annoyed (...)* *us.*
 b. *We* *puzzled over / were frightened by / annoyed with Sue's remarks.*

(see e.g. Rott, Verhoeven & Fritz-Huechante 2020; see also the more restricted psych causative alternation in Alexiadou & Iordăchioaia 2014)

Prerequisites

Nichols et al. 2004

investigate the lexicalization of 18 verb pairs / alternating concepts, affecting the Actor argument (i.e. adding or removing the Actor) in 80 languages

	PLAIN	INDUCED
a	laugh	make laugh, amuse, strike as funny
b	die	kill
c	sit	seat, make sit, have sit
d	eat	feed, give food
e	learn, know	teach
f	see	show
g	be/become angry	anger, make angry
h	fear, be afraid	frighten, scare
i	hide, go into hiding	hide, conceal, put into hiding

Table 1 Inventory of concepts with animate alternating argument

Prerequisites

Nichols et al. 2004

investigate the lexicalization of 18 verb pairs / alternating concepts, affecting the Actor argument (i.e. adding or removing the Actor) in 80 languages

	PLAIN	INDUCED
a	(come to) boil	(bring to) boil
b	burn; catch fire	burn; set fire
c	break	break
d	open	open
e	dry	make dry
f	be/become straight	straighten, make straight
g	hang	hang (up)
h	turn over	turn over
i	fall	drop, let fall

Table 2 Inventory of concepts with inanimate alternating argument

Prerequisites

derivational relations

between PLAIN and INDUCED alternants

- (a) Augmented PLAIN \rightarrow INDUCED
- (b) Reduced PLAIN \leftarrow INDUCED
- (c) Undirected PLAIN \leftrightarrow INDUCED

Prerequisites

derivational relations

between PLAIN and INDUCED alternants

- (a) Augmented PLAIN → INDUCED
- (b) Reduced PLAIN ← INDUCED
- (c) Undirected PLAIN ↔ INDUCED

	PLAIN		INDUCED
Turkish	$E S_{obl}$ <i>sevin-ir</i> E S happy-PRS 'E is happy about S'	→	$S E$ <i>sevin-dir-ir</i> S E happy-CAUS-PRS 'S makes E happy'

Prerequisites

derivational relations

between PLAIN and INDUCED alternants

- (a) Augmented PLAIN → INDUCED
- (b) **Reduced** **PLAIN** ← **INDUCED**
- (c) Undirected PLAIN ↔ INDUCED

PLAIN

Greek *E enđiafér-ete* *ja S*
E interest-3.SG.PASS for S
'E is interested in S'

Spanish *E se alegr-a* *con/por/de S*
E REFL delight-3.SG.PRS with/of S
'E gets happy about S'

INDUCED

S enđiafér-i *E*
S interest-3.SG.ACT E
'S interests E'

S alegr-a *E*
S delight-3.SG.PRS E
'S makes E happy'

Prerequisites

derivational relations

between PLAIN and INDUCED alternants

- (a) Augmented PLAIN → INDUCED
- (b) Reduced PLAIN ← INDUCED
- (c) **Undirected** **PLAIN** ↔ **INDUCED**

PLAIN

INDUCED

English *E worries about S*

↔

S worries E ambitransitives

Prerequisites

derivational relations

between PLAIN and INDUCED alternants

- (a) Augmented PLAIN → INDUCED
- (b) Reduced PLAIN ← INDUCED
- (c) **Undirected** **PLAIN** ↔ **INDUCED**

PLAIN

Hungarian *megrém-ül* E S-tól
frighten-INCH(3.SG) E S-ABL
'E gets frightened by S'

Basque E S-rekin *izutu* *da*
E S-COM frightened be:3.SG
'E gets frightened by S'

INDUCED

megrém-ít-i S E double derivation
frighten-CAUS-3.SG S E
'S frightens E'

S E *izutu* *du* auxiliary change
S E frightened have:3.SG
'S frightens E'

Methodology

Methodology

elicitation method

Scenario-based elicitation of alternating verb pairs

5 basic emotions (e.g. Boucher & Brandt 1981, Johnson-Laird & Oatley 1989, Ekman 1994, Turner 2007)

Emotion	Universal antecedent event	English examples
HAPPINESS	Sub-goals being achieved	delight, please, amuse, interest, enjoy
SADNESS	Failure of major plan or loss of active goal	sadden, mourn, depress, bore
ANGER	Active plan obstructed	annoy, anger, hate, frustrate
FEAR	Self-preservation goal threatened	fear, frighten, worry, scare, dread
DISGUST	Gustatory goal violated	disgust, nauseate, offend, appall

Table 3 Basic emotion modes and universal antecedent events

Methodology

elicitation method

Scenario-based elicitation of alternating verb pairs

5 basic emotions ((e.g. Boucher & Brandt 1981, Johnson-Laird & Oatley 1989, Ekman 1994, Turner 2007)

×

2 stimulus animacy = 10 scenarios

- (7)
- a. SADNESS, inanimate stimulus:
A girl loses her favorite toy and is unable to find it again.

 - b. FEAR, animate stimulus:
A woman encounters a robber.

Methodology

elicitation method

Scenario-based elicitation of alternating verb pairs

Further more specific questions per scenario were asked: temporal structure; degree of emotion intensity; etc. (cf. Rott & Verhoeven 2019)

e.g. for (7b) FEAR, animate stimulus: *A woman encounters a robber.*

1. [NOW] Which words could be used to describe how the robber makes the woman feel?
2. [SHORT LATENCY] Which words could be used to describe the way the robber made the woman feel by suddenly appearing in front of her?
3. [HIGH DEGREE] Which words could be used to best describe the way the woman feels about the robber when he pulls a gun on her and threatens to kill her?
4. [ELSE] Which other words could be used to describe how the robber makes the woman feel?

Methodology

elicitation method

Scenario-based elicitation of alternating verb pairs

- Scenarios presented orally in pseudo-randomized order across multiple sessions with one speaker
- Data collected:
 - Citation form
 - Naturalistic usage in simple declaratives
 - Inverting the structure (test for existence of an alternation)
 - Approximate post-hoc English translations
 - Distributive restrictions
 - Transparent interlexical relations

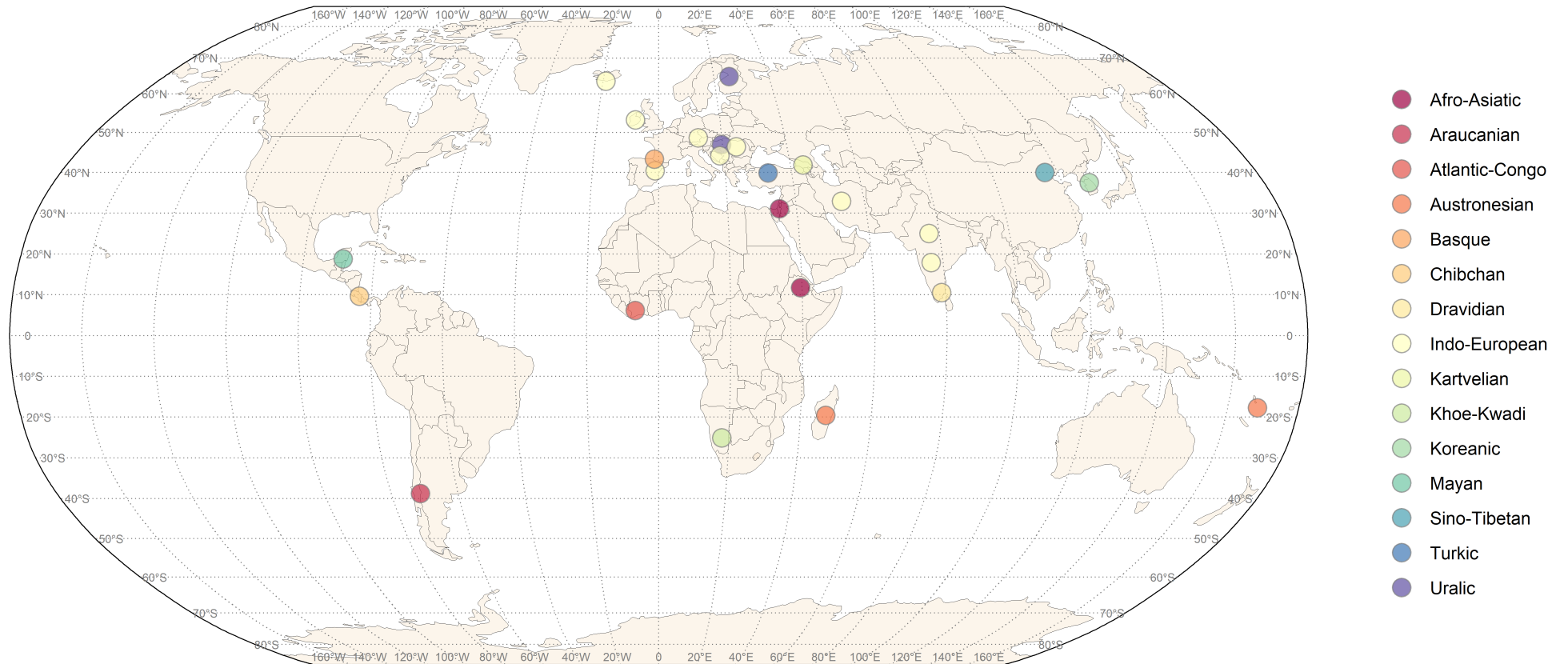
Methodology

sample structure

- 26 languages, covering 5 macro-areas (Africa, America, Asia, Europe, Oceania) and belonging to 15 different languages families, as follows:

Methodology

sample structure



Methodology

sample structure

- 26 languages, covering 5 macro-areas (Africa, America, Asia, Europe, Oceania)
- Elicited pairs of alternating predicates counted as tuples of two forms fulfilling the following criteria:
 - (i) instantiation a systematic morphosyntactic alternation between semantically equivalent experiencer-oriented and stimulus-oriented counterparts;
 - (ii) at least one form exhibits a pattern which aligns with canonical transitives;
 - (iii) experiencer and stimulus have argument status in both alternants (see Rott et al. 2020).
- Pairs which met these criteria are labeled ‘faithful’ in Table 4.

Methodology

sample structure

Language	ISO-Code	Macro-area	Family	Pairs (faithful/total)
Amharic	amh	Africa	Afro-Asiatic	9 (11)
Bété	bet	Africa	Niger-Congo	0 (20)
Nama (Khoekhoe)	naq	Africa	Khoe-Kwadi	15 (23)
Cabécar	cjp	America	Chibchan	23 (23)
Mapudungun	arn	America	Araucanian	30 (35)
Yucatec Maya	yua	America	Mayan	26 (28)
Georgian	kat	Asia	Kartvelian	20 (35)
Hebrew	heb	Asia	Afro-Asiatic	17 (17)
Hindi	hin	Asia	Indo-European	18 (18)
Korean	kor	Asia	Korean	57 (116)
Mandarin Chinese	zho	Asia	Sino-Tibetan	93 (97)
Marathi	mar	Asia	Indo-European	12 (12)
Persian	fas	Asia	Indo-European	57 (64)

Table 4.1 Overall Sample Structure

Methodology

sample structure

Language	ISO-Code	Macro-area	Family	Pairs (faithful/total)
Tamil	tam	Asia	Dravidian	19 (27)
Basque	eus	Europe	Basque	19 (22)
Finnish	fin	Europe	Uralic	60 (60)
German	deu	Europe	Indo-European	77 (78)
Hungarian	hun	Europe	Uralic	47 (47)
Icelandic	isl	Europe	Indo-European	33 (48)
Irish	gle	Europe	Indo-European	52 (52)
Romanian	ron	Europe	Indo-European	50 (50)
Serbian	srp	Europe	Indo-European	76 (80)
Spanish	spa	Europe	Indo-European	118 (119)
Turkish	tur	Europe	Altaic	64 (81)
Malagasy	mlg	Oceania	Austronesian	21 (21)
South Efate (Nafsan)	erk	Oceania	Austronesian	8 (22)
Total				1020 (1206)

Table 4.2 Overall Sample Structure

Results

Results

alternation types in the sample

Question: Do the well-known cross-linguistic differences in alternation directionality hold between verbs or between languages?

Beyond expected variation, most languages show a general preference for one of the morphological correspondences:

- pred. reduced: Spanish, Romanian, Serbian, German, Icelandic
- pred. augmented: Mandarin Chinese, Nafsan, Korean, Tamil, Khoekhoegowab, Malagasy
- pred. undirected: Irish, Hebrew, Basque, Persian, Hindi
- More mixed (but with predominance of undirected or augmented): Hungarian, Marathi, Cabécar, Georgian, Yucatec Maya, Amharic, Turkish, Mapudungun, Finnish

Cross-linguistic differences

between verbs or between languages?

Inventory of basic psych lexicalizations (see Table 4): n = 1020 alternating predicates

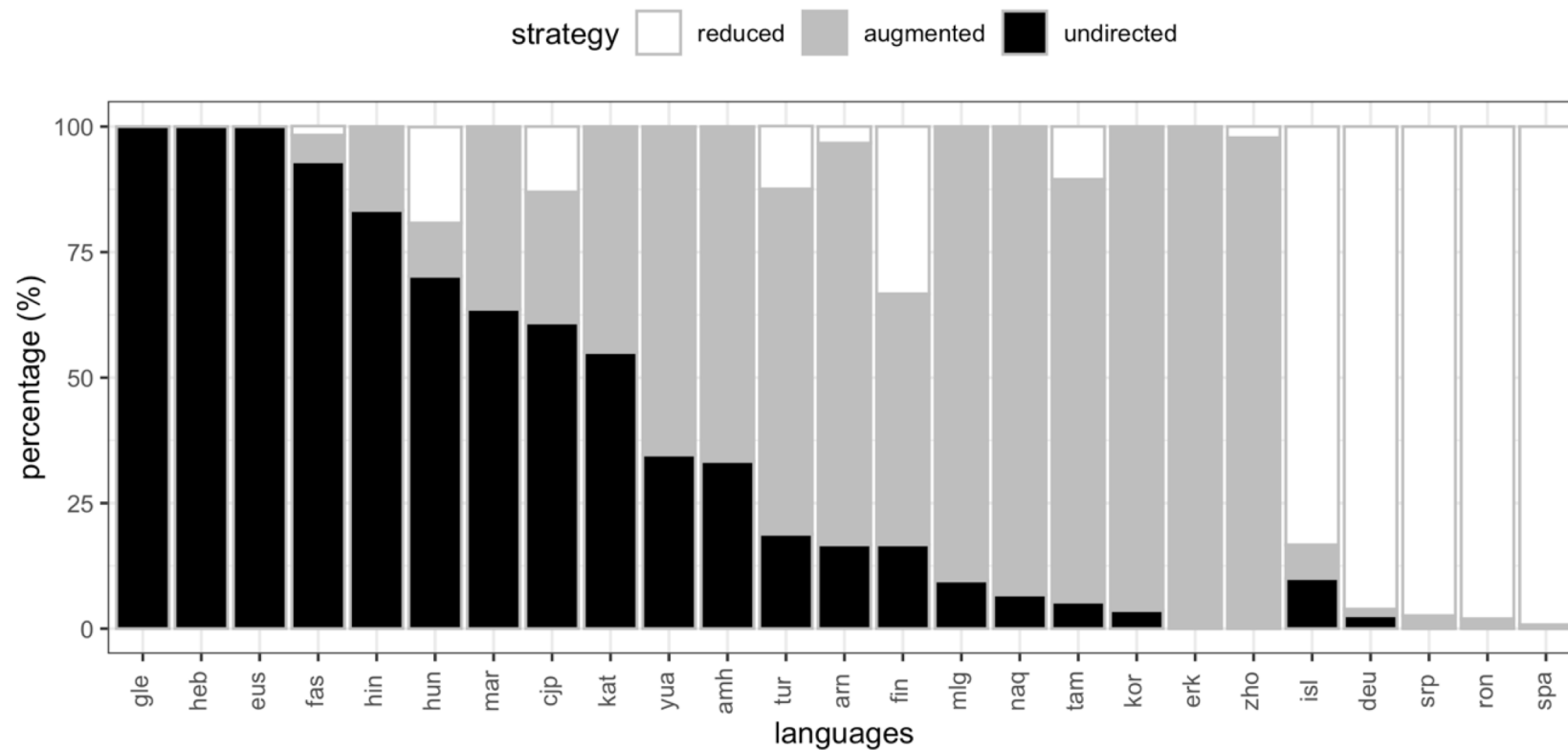


Fig. 1 Directionality of alternation in the languages of the sample (Rott, Verhoeven, Fritz Huechante 2021)

Cross-linguistic differences

between verbs or between languages?

- predominantly reduced: Spanish, Romanian, Serbian, German, Icelandic = detransitivizing lang.

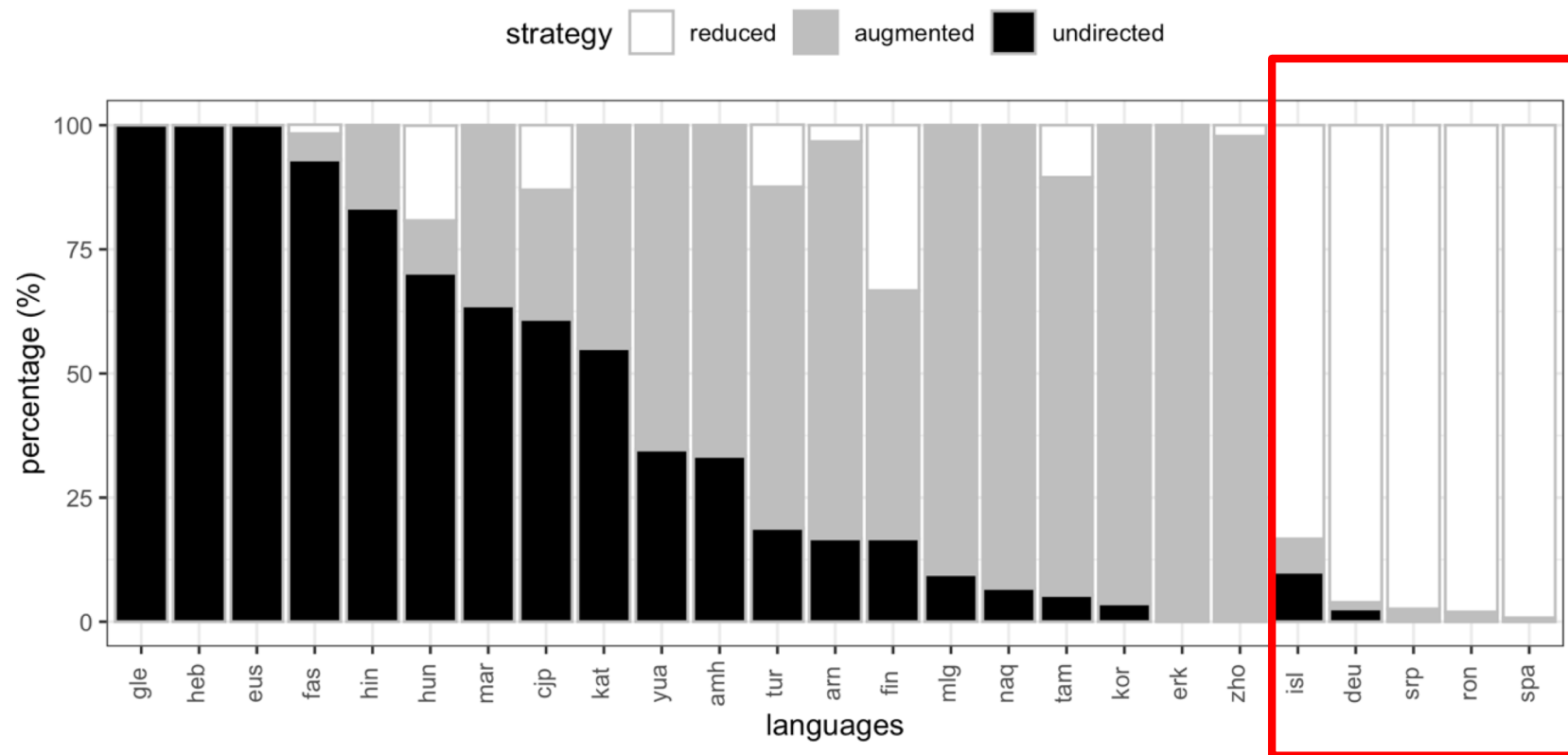


Fig. 1 Directionality of alternation in the languages of the sample (Rott, Verhoeven, Fritz Huechante 2021)

Cross-linguistic differences

between verbs or between languages?

- predominantly reduced: Spanish, Romanian, Serbian, German, Icelandic = detransitivizing lang.

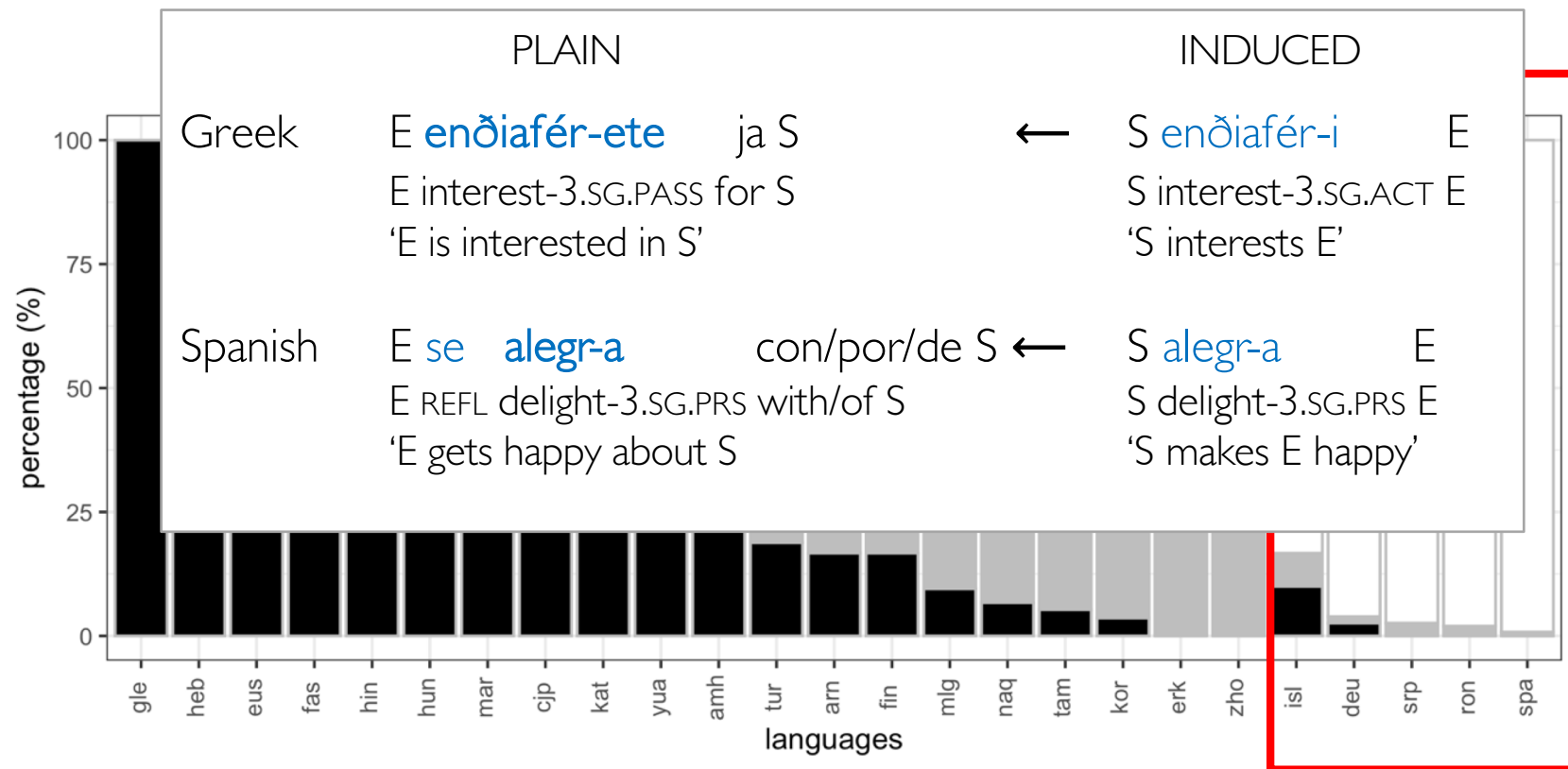


Fig. 1 Directionality of alternation in the languages of the sample (Rott, Verhoeven, Fritz Huechante 2021)

Cross-linguistic differences

between verbs or between languages?

- pred. augmented: Mandarin Chinese, Nafsan, Korean, Tamil, Khoekhoegowab, Malagasy = transitivity languages

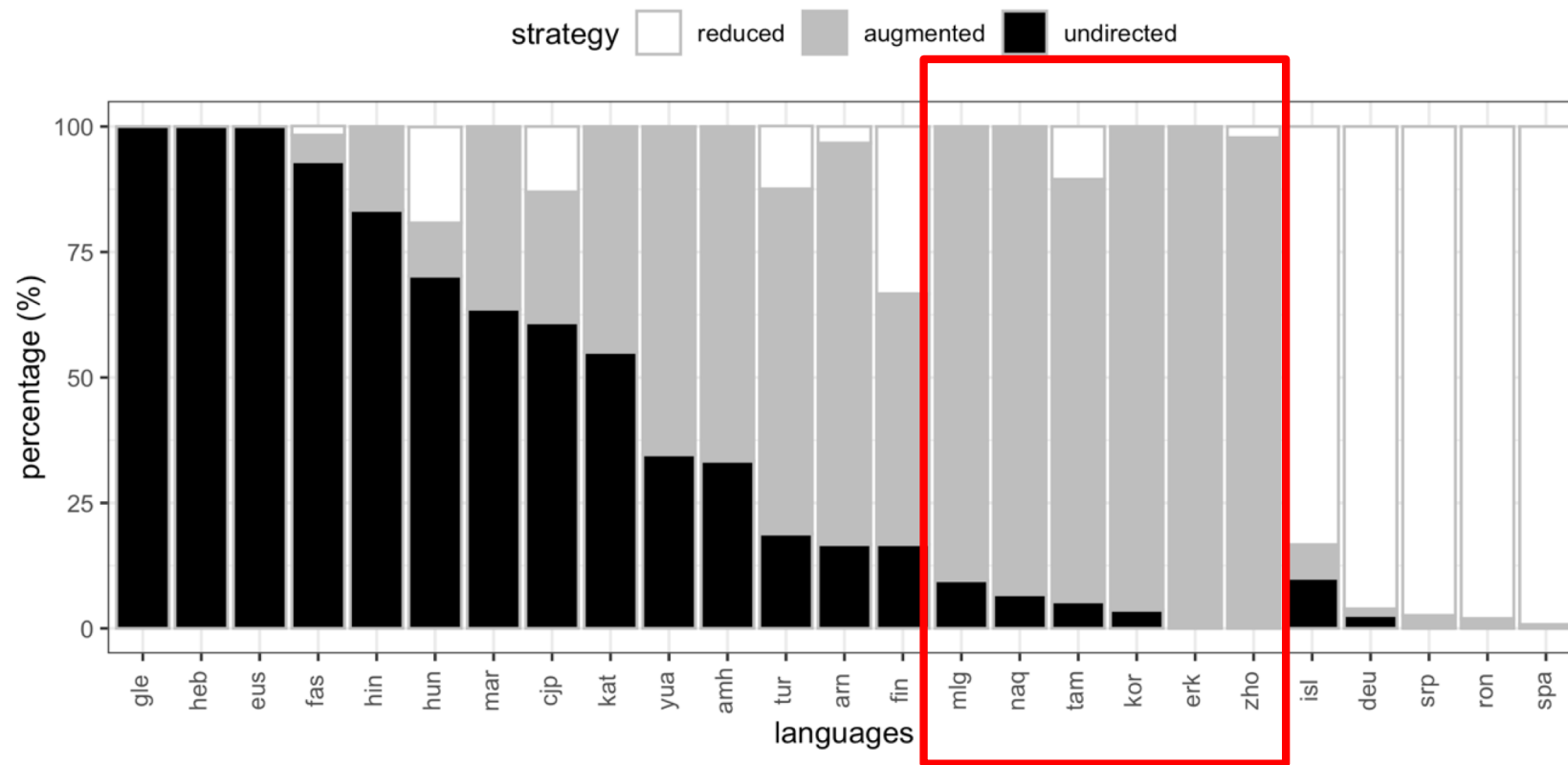


Fig. 1 Directionality of alternation in the languages of the sample (Rott, Verhoeven, Fritz Huechante 2021)

Cross-linguistic differences

between verbs or between languages?

- pred. augmented: Mandarin Chinese, Nafsan, Korean, Tamil, Khoekhoegowab, Malagasy = transitivity languages

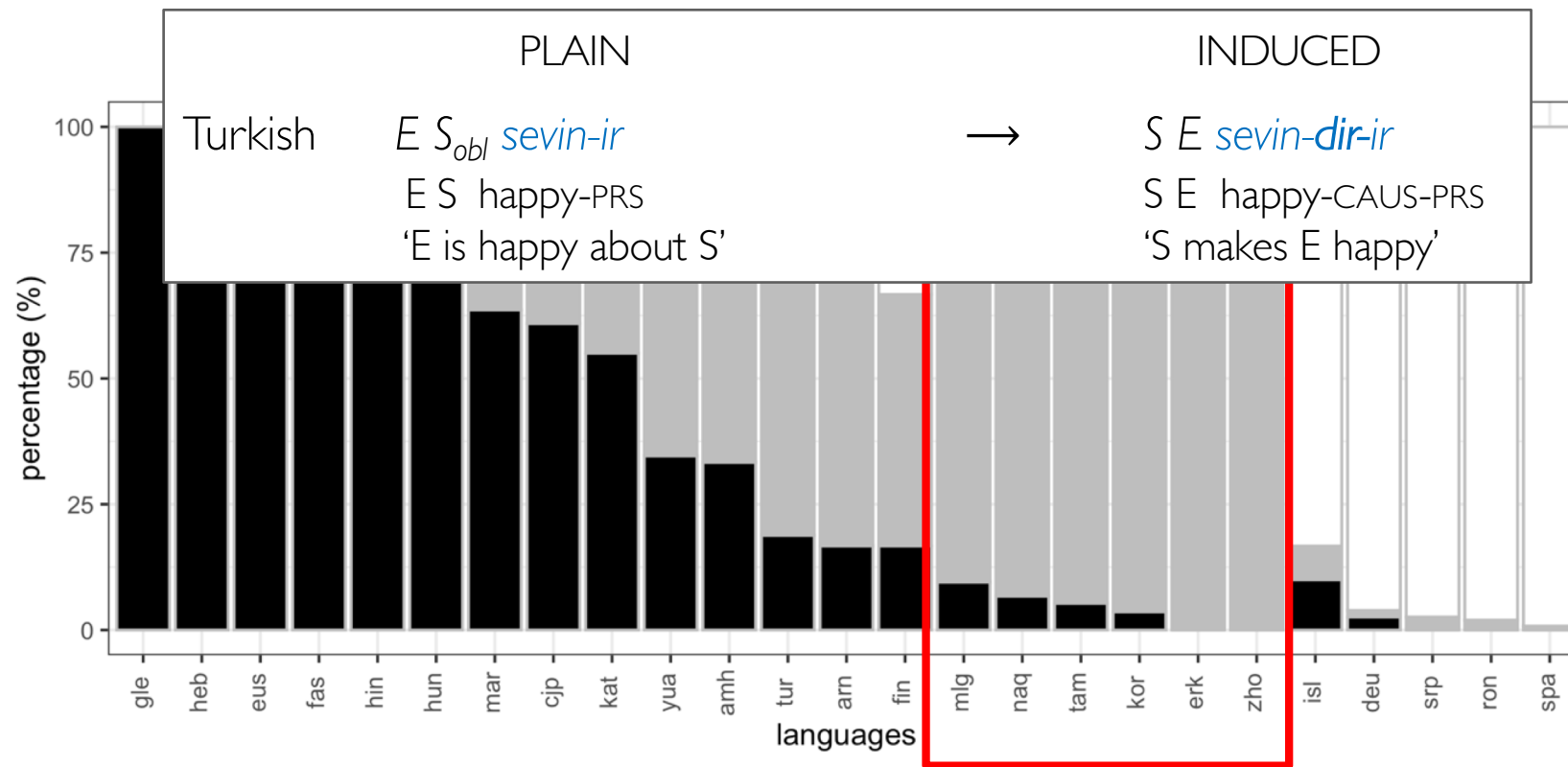


Fig. 1 Directionality of alternation in the languages of the sample (Rott, Verhoeven, Fritz Huechante 2021)

Cross-linguistic differences

between verbs or between languages?

- pred. undirected: Irish, Hebrew, Basque, Persian, Hindi = underspecified languages

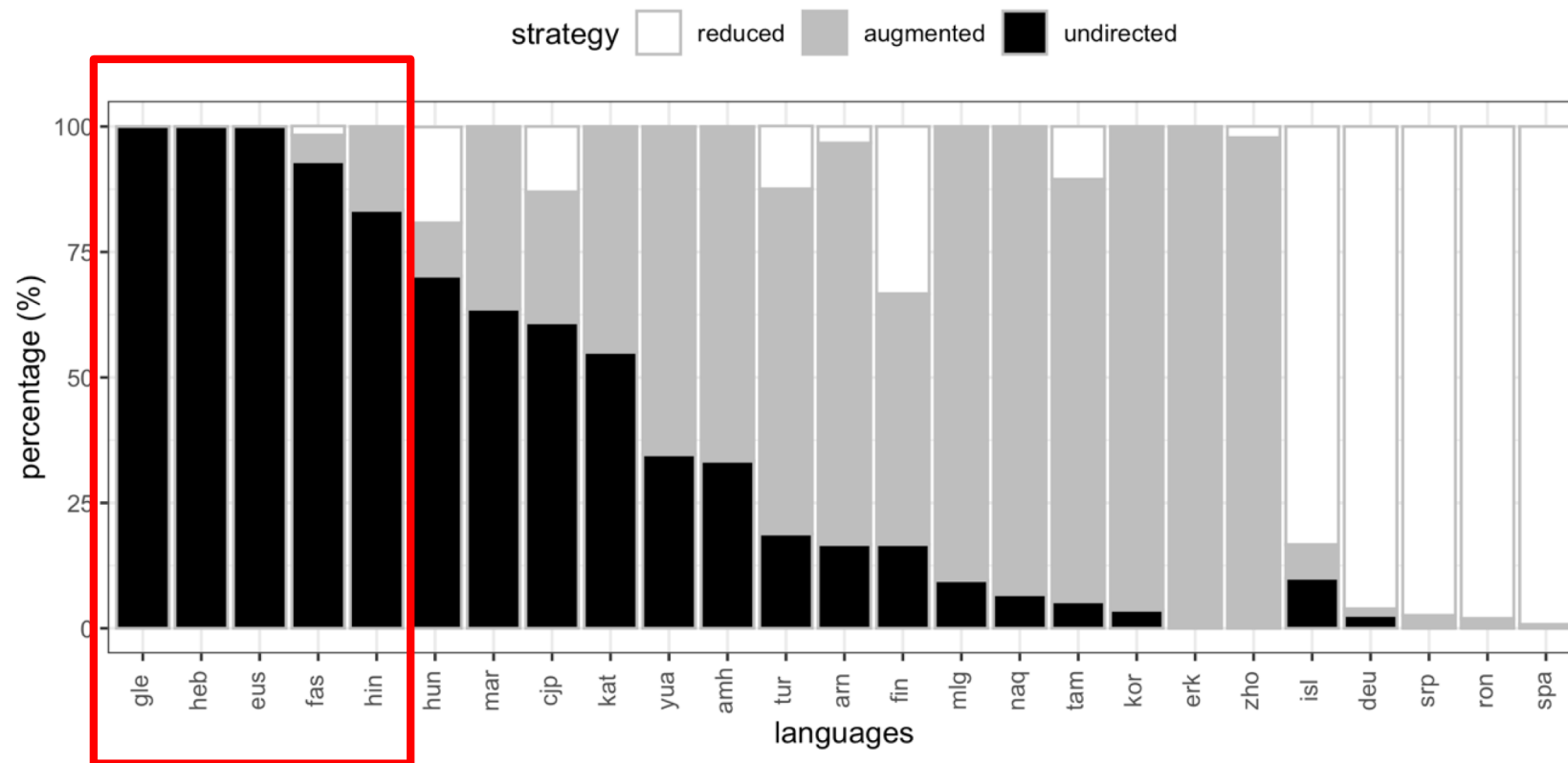


Fig. 1 Directionality of alternation in the languages of the sample (Rott, Verhoeven, Fritz Huechante 2021)

Cross-linguistic differences

between verbs or between languages?

- pred. undirected: Irish, Hebrew, Basque, Persian, Hindi = underspecified languages

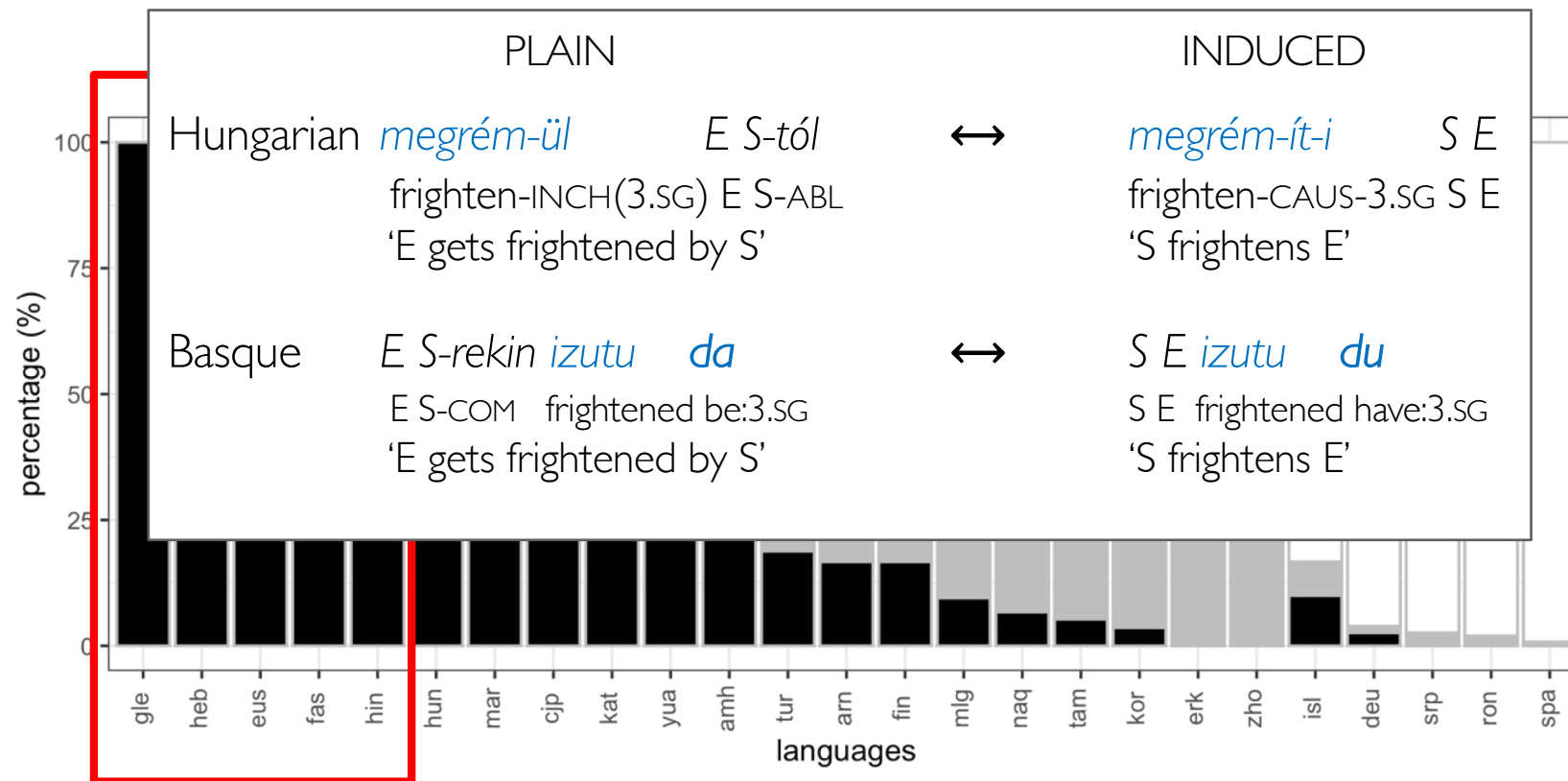


Fig. 1 Directionality of alternation in the languages of the sample (Rott, Verhoeven, Fritz Huechante 2021)

Cross-linguistic differences

between verbs or between languages?

- More mixed (but with predominance of undirected or augmented): Hungarian, Marathi, Cabécar, Georgian, Yucatec Maya, Amharic, Turkish, Mapudungun, Finnish

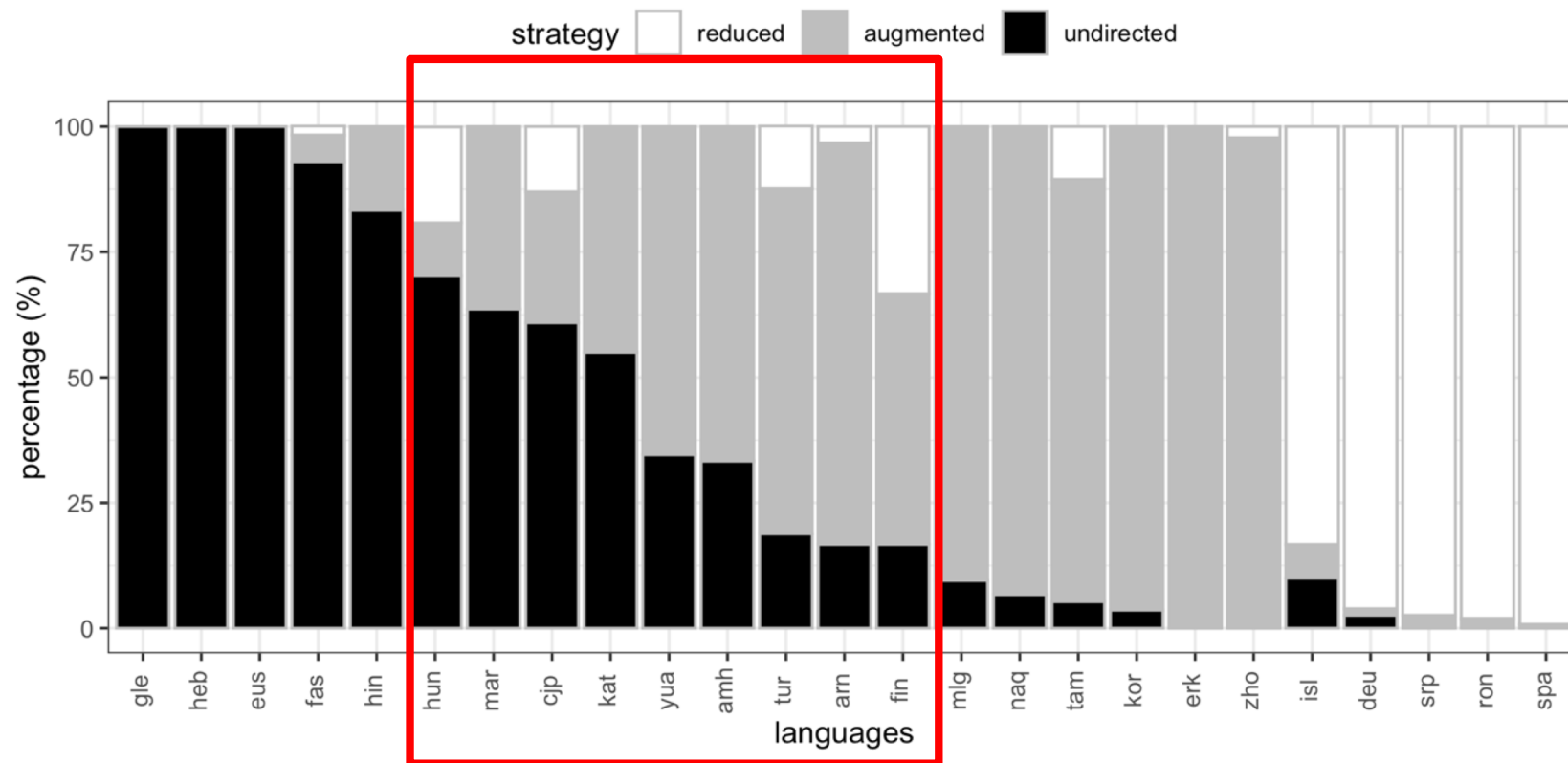


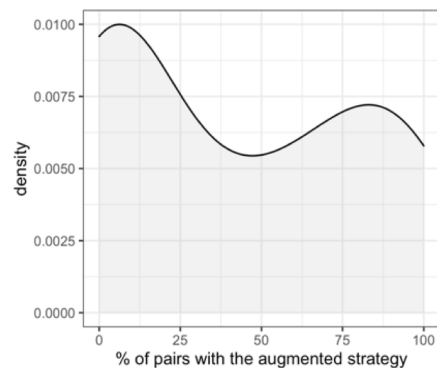
Fig. 1 Directionality of alternation in the languages of the sample (Rott, Verhoeven, Fritz Huechante 2021)

Results

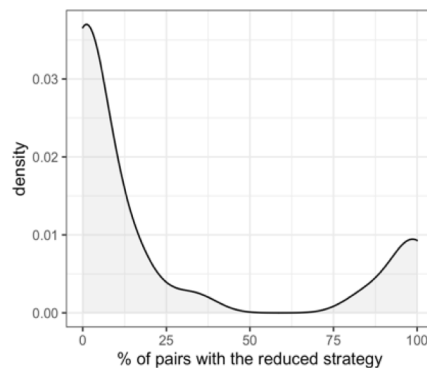
alternation types in the sample

observation: the choice of pattern in individual languages is not normally distributed; data reveals a bimodal distribution in all strategies

(a) augmented



(b) reduced



(c) undirected

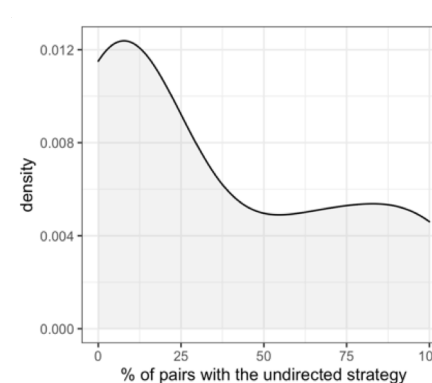


Fig. 2 Density of languages depending on the percentage of each strategy in psych inventory

'dip test' (Hartigan and Hartigan 1985) reveals strong (but not significant) bimodality (augmented: 0.08, reduced: 0.08, undirected: 0.06)

Results

areal distribution

Results

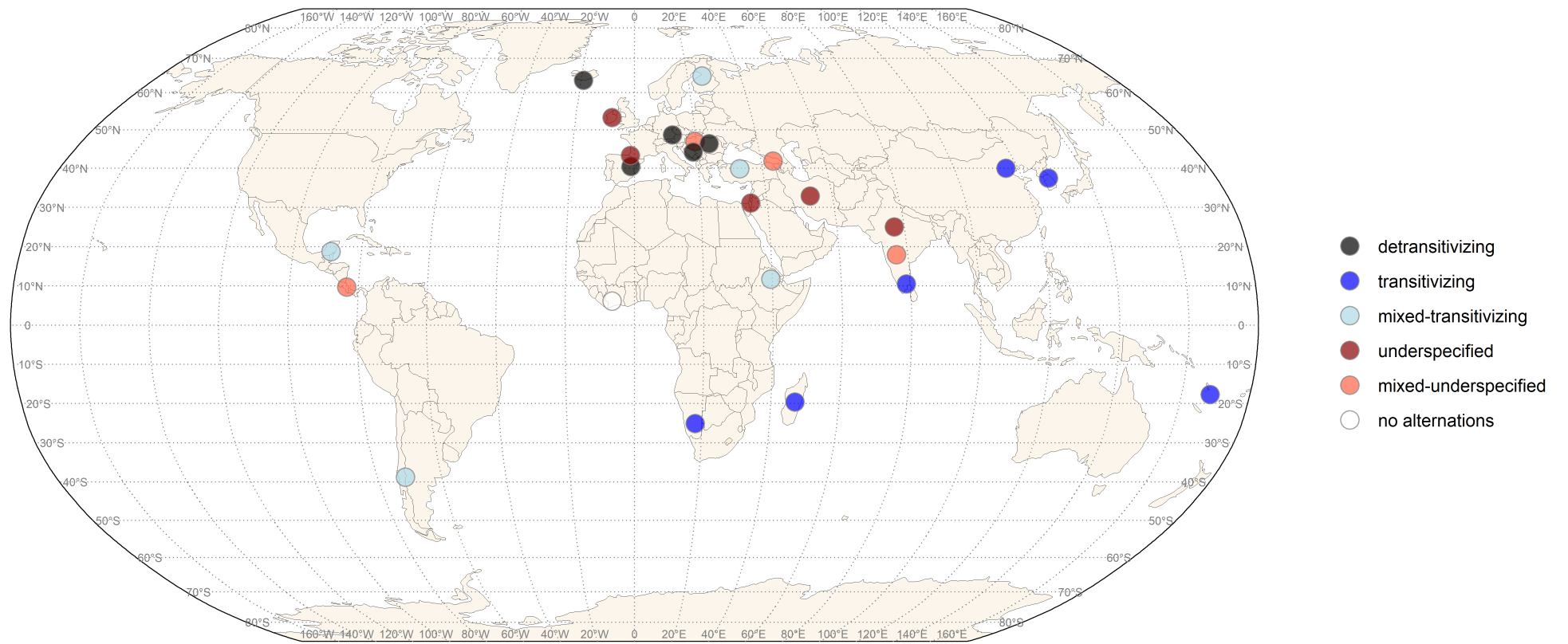
areal distribution

Question: Is there an areal (or phylogenetic) impact of alternation directionality?

Observations: **detransitivizing languages** are all located in the European macro-area and belong to the Indo-European phylum
transitivizing und underspecified languages cannot be related to any specific macro-area

Results

areal distribution



Results

areal distribution

Question: Is there an areal (or phylogenetic) impact of alternation directionality?

Observations: **detransitivizing languages** are all located in the European macro-area and belong to the Indo-European phylum
transitivizing und underspecified languages cannot be related to any specific macro-area

- This dichotomy is congruent with Nichols et al. 2004 for their general set of verbs.
- The presence of **reduction** in ‘animate’ verbs is **negatively correlated** with (morphological, productive) **causatives** (Nichols et al. 2004).
 - ~ scarcity of augmented and undirected pairs in the detransitivizing set of languages; both typically involve a causative derivation

Results

correlations with alignment

Results

correlations with alignment

Question: Do the cross-linguistic differences in alternation directionality correlate with morphological alignment?

two major alignment types *accusative* and *ergative*, based on morphological case alignment in (i) nouns and (ii) pronouns (Comrie 2013) and alignment in (iii) verbal agreement (Siewierska 2013):

- *accusative* is assigned as overall type if accusative alignment is dominant, i.e. either present in at least two of the three parameters or the only non-neutral value;
- *ergative* is assigned if ergative morphology is present in at least one of the three parameters

ergative languages: Basque, Cabécar, Georgian, Hindi, Marathi, Yucatec Maya

acc. languages: Amharic, Finnish, German, Hebrew, Hungarian, Icelandic, Irish, Khoekhoegowab, Korean, Malagasy, Nafsan, Persian, Romanian, Serbian, Spanish, Tamil, Turkish

neutral languages: Mandarin Chinese, Mapudungun

Results

correlations with alignment

Question: Do the cross-linguistic differences in alternation directionality correlate with morphological alignment?

Correlations between alternation directionality and alignment reported in Nichols et al. 2004 are descriptively visible in our data set:

- *reduced type* → (predicts) *accusative*;
- {*reduced & augmented*} = *directed types* ~> (favor) *accusative*;
- *ergative* ~> (favors) *non-directed types*.

We tested the impact of alignment (ergative vs. non-ergative) on the choice of strategy in a generalized linear mixed-effects model:

Results

correlations with alignment

Question: Do the cross-linguistic differences in alternation directionality correlate with morphological alignment?

- **significant impact** of alignment on the occurrence of **reduced** and **undirected pairs** in the examined inventory but **not in augmented pairs**

strategy	coefficients	estimate	SE	z-value	p (<)
reduced	INTERCEPT	-2.74	1.67	-1.64	.05
	ALIGNMENT (ERG)	-5.93	2.77	-2.14	.05
augmented	INTERCEPT	-1.15	0.83	-1.39	–
	ALIGNMENT (ERG)	-0.28	1.66	-0.17	–
undirected	INTERCEPT	-2.19	0.75	-2.91	.01
	ALIGNMENT (ERG)	3.46	1.51	2.29	.05

Table 4 Mixed-effects model: impact of alignment on the frequency of directionality strategies

Discussion

correlations with alignment

Question: Do the cross-linguistic differences in alternation directionality correlate with morphological alignment?

absence of a significant result of morphological alignment in **augmented pairs**

- augmentation is the most natural alternation given the functional makeup of the experiential domain: (a) prominence of the experiencer; (b) stativity of the situation:
- structurally most directly rendered with intransitive ES predicates encoding the PLAIN alternant (e.g. Turk. *sevin* ‘be happy’) and the INDUCED alternant to be formally (more) marked (e.g. Turk. *sevin-dir* ‘make happy’);
- ‘animate verbs’ in Nichols et al. cross-linguistically favor the basic lexicalization of the PLAIN alternant (e.g. *laugh*), while the INDUCED alternant tends to be derived (e.g. *make laugh*)
 - no association between alignment type and augmentation to be expected

Discussion

correlations with alignment

Question: Do the cross-linguistic differences in alternation directionality correlate with morphological alignment?

reduced pairs are significantly less frequent in ergative lang. than in non-ergative lang.

- the ergative is associated with causer/agenthood (Woolford 1997, Legate 2012), which runs against the prototypical semantics of a psych situation and would equip the stimulus with agent/causer properties in the basic lexicalization;
- Cf. detransitivizing languages (cf. Spanish, Romanian, Serbian, German, Icelandic from our sample) where the (basic) transitive structures show non-canonical psych-specific semantic properties, among them stativity and non-agentivity (e.g. Belletti & Rizzi 1988, Dowty 1991, Pesetsky 1995, Landau 2010, Verhoeven 2015 among many others).
 - **negative association between ergativity and reduction to be expected**

Discussion

correlations with alignment

Question: Do the cross-linguistic differences in alternation directionality correlate with morphological alignment?

significant association of ergative alignment with the **undirected alternation type**

- also observed in Nichols et al 2004; explanation based on the *indeterminate* subtype (e.g. ambitransitives)
- all ergative languages of our sample display the *neutral* subtype, i.e. they display underspecified roots and **overt derivation of both alternants** (double derivation, auxiliary change)

Discussion

correlations with alignment

Auxiliary/light verb change in Basque, Hindi, Marathi

(8) Basque (Isolate, Europe): auxiliary change

a.

PLAIN

Gizon-a (ipuin-a-rekin)

man-DEF.ABS (fairy.tale-DEF-COM)

'The man is delighted (with the fairy tale).'

poztu

delighted

da.

be.3SG

b.

INDUCED

Ipui-a-k

gizon-a

fairy.tale-DEF-ERG

man-DEF.ABS

'The fairy tale delights the man.'

poztu

delighted

du.

have.3SG

Discussion

correlations with alignment

Auxiliary/light verb change in Basque, Hindi, Marathi

(9) Marathi (Indo-European, Asia): light verb change

a. PLAIN

<i>T-yā</i>	<i>māṅs-ā-lā</i>	<i>kiḍ-yā-ñ-c-ī</i>	<i>kiḷas</i>	<i>ā-l-ī.</i>
DEM-OBL	man-OBL-DAT	maggot-OBL-PL-GEN-F	disgust	come-PST-F

‘The man got disgusted with the maggots.’

b. INDUCED

<i>Kiḍ-yā-n-nī</i>	<i>t-yā</i>	<i>māṅs-ā-lā</i>	<i>kiḷas</i>	<i>āṅ-l-ī.</i>
maggot-OBL-PL-ERG	DEM-OBL	man-OBL-DAT	disgust	bring-PST-F

‘The maggots disgusted the man.’

Discussion

correlations with alignment

Double derivation in Cabécar, Georgian, Yucatec Maya

(10) Cabécar (Chibchan, America): double derivation

a.

PLAIN

aláklä suá-n-á_ jakbälä yíka

woman fear-MV-PFV thief AVERS

'The woman was afraid of the thief.'

b.

INDUCED

aláklä suá-w-á_ jakbälä te.

woman fear-CAUS-PFV theft ERG

'The thief scared the woman.'

Discussion

correlations with alignment

Question: Do the cross-linguistic differences in alternation directionality correlate with morphological alignment?

significant association of ergative alignment with the **undirected alternation type**

- in many cases the underspecified roots are **nominal in nature or origin** (nouns or adjectives), the latter being a general characteristic of the psych domain
- Hence, the association of ergative alignment and an undirected alternation might be epiphenomenal to this latter characteristic.

Summary

Summary

- Alternation directionality
 - cross-linguistic differences in psych-alternation directionality largely hold between languages (not between verbs)
- Areal patterns in alternation directionality
 - the Indo-European languages of Europe stand out in being detransitivizing in the psych-domain while transitivizing and underspecified languages do not show areal patterns
- Correlation with alignment
 - reducing strategies negatively correlate with ergativity while augmentation occurs in all alignment types;
 - the positive correlation of ergativity with undirected strategies may be epiphenomenal to the nominal makeup of the psych-domain

Literature

- Arad, Maya. 2002. Universal features and language-particular morphemes. In Artemis Alexiadou (ed.), *Theoretical Approaches to Universals*, 15-39. Amsterdam: John Benjamins.
- Alexiadou, Artemis & Gianina Iordăchioaia. 2014. The psych causative alternation. *Lingua* 148: 53-79.
- Alexiadou, Artemis & Elena Anagnostopoulou. 2020. Experiencers and Causation. In Elitzur Bar-Asher Siegal & Nora Boneh (eds.) *Perspectives on Causation*, 297-317. Springer.
- Baker, Mark. 1988. *Incorporation: a theory of grammatical function changing*. Chicago: University of Chicago Press.
- Belletti, Adriana & Luigi Rizzi. 1988. Psych-verbs and θ -theory. *Natural Language & Linguistic Theory* 6. 291-352.
- Haspelmath, M. et al. 2014. Coding causal-noncausal verb alternations: a form-frequency correspondence explanation. *Journal of Linguistics* 50.3, 587-625.
- Bouchard, Denis. 1995. *The semantics of syntax: A minimalist approach to grammar*. Chicago: University of Chicago Press.
- Comrie, Bernhard. 2013. Alignment of Case Marking of Full Noun Phrases. In Matthew S. Dryer & Martin Haspelmath (eds.), *The World Atlas of Language Structures Online*. Leipzig: Max Planck Institute for Evolutionary Anthropology.
- Cysouw, Michael. 2011. Quantitative explorations of the word-wide distribution of rare characteristics, or: the exceptionality of north-western European languages. In Horst Simon and Heike Wiese, *Expecting the Unexpected: Exceptions in Grammar*, 411-431. Berlin: De Gruyter.
- Hupka, Ralph B., Allison P. Lenton & Keith A. Hutchinson. 1999. Universal Development of Emotion Categories in Natural Language. *Journal of Personality and Social Psychology* 77(2). 247-278.
- Johnson-Laird, Philip & Keith Oatley. 1989. The language of emotions: An analysis of a semantic field. *Cognition & Emotion* 3(2). 81-123.
- Kutscher, Silvia. 2009. *Kausalität und Argumentrealisierung. Zur Konstruktionsvarianz bei Psychverben am Beispiel europäischer Sprachen*. Tübingen: Niemeyer.
- Landau, I., 2010. *The Locative Syntax of Experiencers*. Cambridge, MA: MIT Press.
- Legate, Julie Anne. 2012. Types of ergativity. *Lingua* 122(3). 181-191.
- Matisoff, James. 1986. Hearts and minds in South-East Asian languages and English: an essay in the comparative lexical semantics of psycho-collocations. *Cahiers de linguistique - Asie orientale* 15(1). 5-57.

Literature

- Nichols, Johanna, David A. Peterson & Jonathan Barnes. 2004. Transitivity and intransitivity languages. *Linguistic Typology* 8. 149-211.
- Pesetsky, D., 1995. *Zero Syntax: Experiencers and Cascades*. Cambridge.
- Rappaport-Hovav, M. & B. Levin 2012. Lexicon uniformity and the causative alternation. In Everaert et al. (eds.), 150-176.
- Rott, J. & E. Verhoeven & P. Fritz-Huechante 2020. Valence orientation and psych properties: Towards a typology of the psych alternation. *Open Linguistics*, 6: 401-423. DOI: <https://doi.org/10.1515/opli-2020-0020>
- Rott, J. & E. Verhoeven 2019. Tiers for fears and other emotions: A cross-linguistic approach to psych lexis and syntax. A. Gattner, R. Hörnig, M. Störzer (eds.) *Linguistic Evidence 2018 Online Proceedings*. Tübingen: Universität Tübingen.
- Talmy, Leonard. 1985. Lexicalization patterns: Semantic structure in lexical forms. In Timothy Shopen (ed.), *Language, Typology and Syntactic Description 3: Grammatical Categories and the Lexicon*, 57-149. Cambridge: Cambridge University Press.
- Temme, A. & E. Verhoeven 2016. Verb class, case, and order: A cross-linguistic experiment on non-nominative experiencers. *Linguistics* 54.4, 769-813.
- Temme, A. & E. Verhoeven 2017. Backward binding as a psych effect: A binding illusion? *Zeitschrift für Sprachwissenschaft* 36.2.
- Verhoeven, Elisabeth. 2007. *Experiential constructions in Yucatec Maya. A typologically based analysis of a functional domain in a Mayan language*. Amsterdam/Philadelphia: Benjamins.
- Verhoeven, E. 2010. Agentivity and stativity in experiencer verbs: Implications for a typology of verb classes, *Linguistic Typology* 14, 213-251.
- Verhoeven, E. 2014. Thematic prominence and animacy asymmetries. Evidence from a cross-linguistic production study, *Lingua* 143, 129-161.



e-ΣΕΜΙΝΑΡΙΑ
ΤΟΜΕΑΣ ΓΛΩΣΣΟΛΟΓΙΑΣ
ΤΜΗΜΑ ΦΙΛΟΛΟΓΙΑ
ΣΕΚΠΑ

June 02, 2021

A glimpse into quantitative typology:
a cross-linguistic study of the psych-alternation

Elisabeth Verhoeven,
joint work with Julian A. Rott and Paola Fritz-Huechante
Humboldt-Universität zu Berlin
elisabeth.verhoeven@cms.hu-berlin.de