StaPs-Konferenz, March 26 2022

Interaction of lexical and grammatical categories (transitivity, voice, actionality, aspect)

Mostly based on Malchukov 2019

Interaction of Verbal Categories in a Typological Perspective (jst.go.jp)

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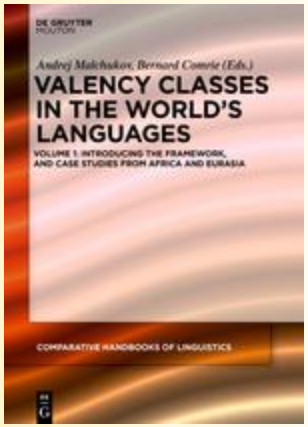
Introduction

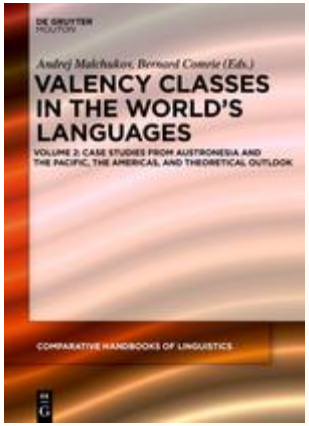
- Based on my earlier work, discussion of interaction of grammatical categories
- Precursurs to this approach
  - Markedness studies in linguistic typology (Greenberg 1966; Croft 1990)
  - Local markedness (Tiersma 1982) and markedness hierarchies
  - Typological studies on interaction of grammatical categories (Aikhenvald & Dixon 1998)
  - Work by V.S. Xrakovsky on syntagmatic interaction of grammatical categories and 'dominant' and 'recessive' categories
- Will be illustrated here for interaction of lexical and grammatical categories in two domains
  - Voice, valency and transitivity
    - (based on the results of the Leipzig Valency Classes Project)
  - Tense/aspect and actionality
    - joint project with V.S. Xrakovskij and his colleagues in St.Petersburg (Xrakovskij & Malchukov eds. 2020; English translation in LINCOM in 2021)

Leipzig Valency Classes Project (2010-2015)

- Systematic cross-linguistic investigation of valency patterns in 30 languages, based on the Leipzig Valency Questionnaire
- http://www.eva.mpg.de/lingua/valency/files/database_manual.php

- publication of the volume "Valency Classes: a comparative Handbook" (Malchukov & Comrie, eds. 2015; 2 vols), which including general chapters, as well as chapters on 30 individual languages





- publication of the database (ValPaL, Hartmann, Haspelmath & Taylor eds. 2013) with contributions on individual languages based on the Database Questionnaire http://www.valpal.info/

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Goals of the Leipzig Valency Project

- How universal are valency classes
  - Typological relevance of language-particular studies, such as (Levin 1993) on English, is not clear (i.e., not clear which aspects of the classification are universal and which are language particular)
- Universality of valency classes
  - As identified by coding frames
  - By alternations (unmarked or verb-marked)
- How to capture cross-linguistic variation in valency classes in terms of hierarchies/semantic maps
- 80 verb list as a toy lexicon: which verbs cluster together in terms of coding and alternations across languages

Valency

Meanings

Form | Meanings | Examples | Alternations | Languages

Back | Verbs | References | Coding frames | People

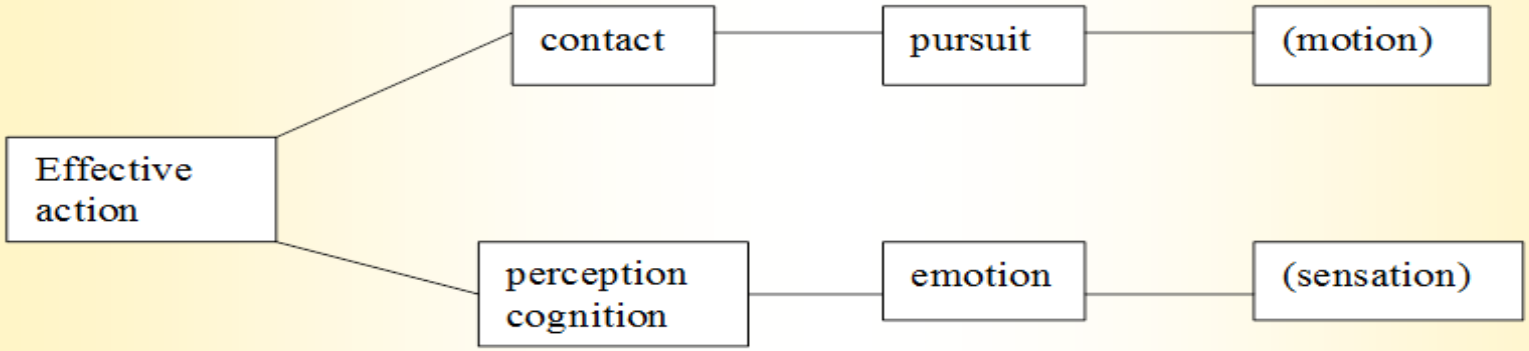
	Meaning label	#	Role frame	Typical context
go	EAT	1	A eats P	The boy ate the fruit.
go	HUG	2	A hugs P	The mother hugged her little boy.
go	LOOK AT	3	A looks at P	The boy looked at the girl.
go	SEE	4	E sees M	The man saw the bear.
go	SMELL	5	E smells M	The bear smelled the boy.
go	FEAR	6	E fears M	The man feared the bear.
go	FRIGHTEN	7	A frightens P	The bear frightened the man.
go	LIKE	8	E likes M	The boy liked his new toy.
go	KNOW	9	A knows P	The girl knew the boy.
go	THINK	10	A thinks about X	The girl thought about her grandmother
go	SEARCH FOR	11	A searches for X	The men searched for the women.
go	WASH	12	A washes P	The mother washed the baby.
go	DRESS	13	A dresses P	The mother dressed her daughter
go	SHAVE	14	A shaves (his beard/hair)	The man shaved his beard/cut his hair
go	HELP	15	A helps X	I helped the boys.
go	FOLLOW	16	A follows X	The boys followed the girls.
go	MEET	17	A meets X	The men met the boys.
go	TALK	18	A talks (to X) (about Y)	The girl talked to the boy about her dog.
go	ASK FOR	19	A asks (X) for Y	The boy asked his parents for money.
go	SHOUT AT	20	A shouts at X	The woman shouted at the children.
go	TELL	21	A tells (X) Y	The girl told the boy a funny story.
go	SAY	22	A says "..."(to X)	They said "no" to me.
go	NAME	23	A name X (a) Y	The parents called the baby Anna.
go	BUILD	24	A builds P (out of X)	The men built a house out of wood.
go	BREAK	25	A breaks P (with I)	The boy broke the window with a stone.
go	KILL	26	A kills P (with I)	The man killed his enemy with a club.
go	BEAT	27	A beats P (with I)	The boy beat the snake with a stick.
go	HIT	28	A hits P (with I)	The boy hit the snake with a stick.
go	TOUCH	29	A touches P (with I)	The boy touched the snake with a stick.
go	CUT	30	A cuts P (with I)	The woman cut the bread with a sharp

Variation in coding frames: Transitivity hierarchies

- **Tsunoda's (1981) transitivity Hierarchy**

Effective action>> Perception >> Pursuit >>Knowledge >>Feeling >> Relation

- **Malchukov's (2005) semantic map for two-argument events**
  - The Transitive-Motion route (decrease in affectedness)
  - The Transitive - Psych-verbs route additionally decrease in agentivity

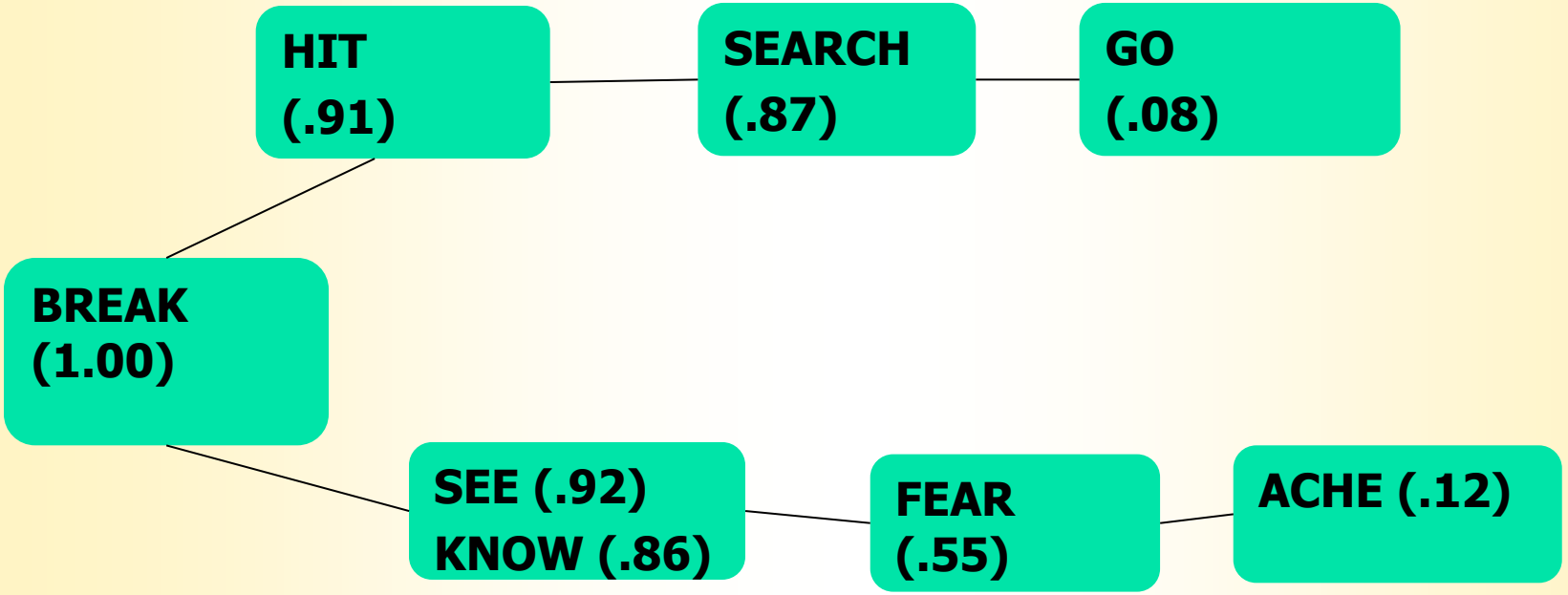


Transitivity prominence in ValPal database (Haspelmath 2015)

Tab. 4: ValPaL verb meanings ranked by transitivity-prominence.
(= percentage of transitively encoded verbs among all counterpart verbs)

BREAK	**1.00**	**LIKE**	**.78**
TEAR	1.00	TELL	.78
SHOW	1.00	FOLLOW	.74
BEAT	1.00	**LOOK AT**	**.73**
CUT	1.00	MEET	.70
TAKE	1.00	FEAR	.53
KILL	1.00	THINK	.52
HIT	**1.00**	CLIMB	.49
FRIGHTEN	.98	SHOUT AT	.45
GIVE	.98	LEAVE	.42
THROW	.98	SAY	.41
TIE	.98	TALK	.40
PUT	.98	SING	.38
FILL	.98	FEEL PAIN	.12
HIDE	.97	BLINK	.11
LOAD	.96	PLAY	.10
PEEL	.96	RUN	.05
ASK FOR	.95	SIT	.05

Transitivity hierarchies (Haspelmath 2015)

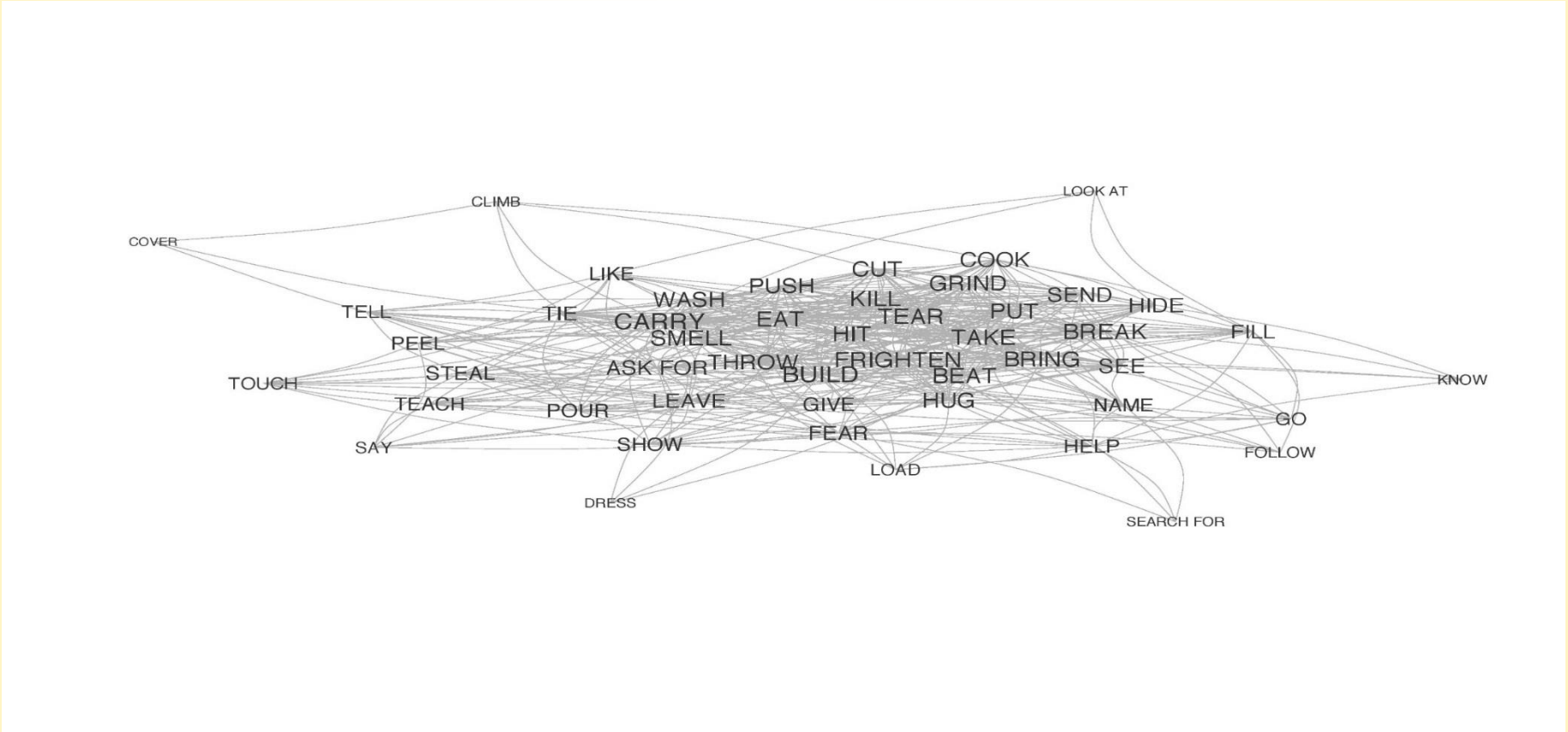


- Semantic map with percentages of the transitive pattern appended (percentages from ValPaL reported in Haspelmath 2015)
- Motion and Sensation predicates show a clear intransitive preference, but the former can be ambitransitive in some languages

Coding patterns: NeighbourNet plots

- The two–dimensional Transitivity hierarchy can be conceived as a semantic map (see Malchukov 2005), as imposes contiguity restrictions (w.r.t. availability of transitive/intransitive coding)
- Semantic maps – a spatial arrangement of linguistic categories based on functional similarities and predicting – on iconicity assumptions – typological propensity for similar encoding/formal similarities;
  - On semantic maps see Michael Cysouw, Martin Haspelmath & Andrej Malchukov (eds.), Semantic maps: theory and applications. Linguistic Discovery, vol. 8, issue (1), 2010.
  - **https://journals.dartmouth.edu/cgi-bin/WebObjects/Journals.woa/1/xmlpage/1/issue/34**
- Semantic maps/hierarchies can also be implemented through clustering techniques used for computational generation of semantic maps
  - See Blasi (2015) for clustering verbs with respect to transitivity, and Hartmann, Haspelmath & Cysouw (2014) for clustering of micro-roles beyond the transitive/intransitive distinction

Coding patterns: clustering frames (Blasi 2015)



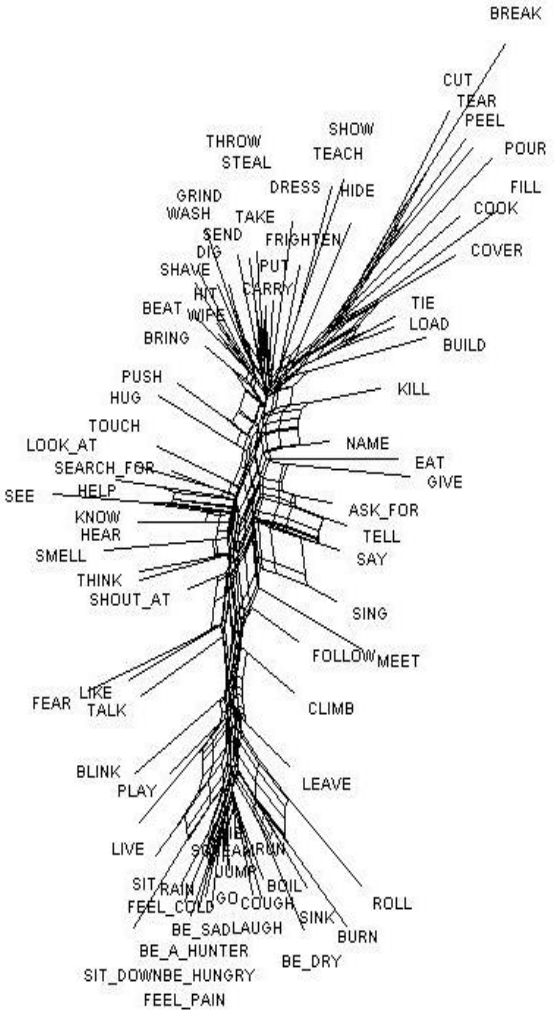
- The graph (from Blasi 2015) above shows clustering of certain verbs (from the ValPaL sample with respect to transitivity coding
- This graph was constructed by displaying links between pairs of verbs at least 90% similar – tha is, verbs that have the same pattern for 90% or more of the languages in which they both occu (Blasi 2015)

Valency classes by alternations

- The same approach can be applied to capturing preferences in alternations
  - In the literature this question has been only addressed with respect to the inchoative-causative alternation (Nedjalkov, Haspelmath, Comrie, Nichols and others)
- Alternation Hierarchies (Wichmann 2015)
- Statistical analysis of the data in ValPal
  - Through NeighbourNets (visualizing) clustering of verbs sharing certain behavior (here: availability of alternations) across languages
  - Guttmann Scales: a unidimensional representation of alternations reflecting the number of matching behavior of verbs with respect to certain general alternations (Subject-demoting, etc)
- Illustrated below for a few alternations (Subject-demoting/deleting, Object-demoting/deleting), other alternations follow separate hierarchies

Hierarchies for alternations: SubjectDem/Del

- Similar hierarchies can be established for alternations, including voice alternations (Wichmann 2015)



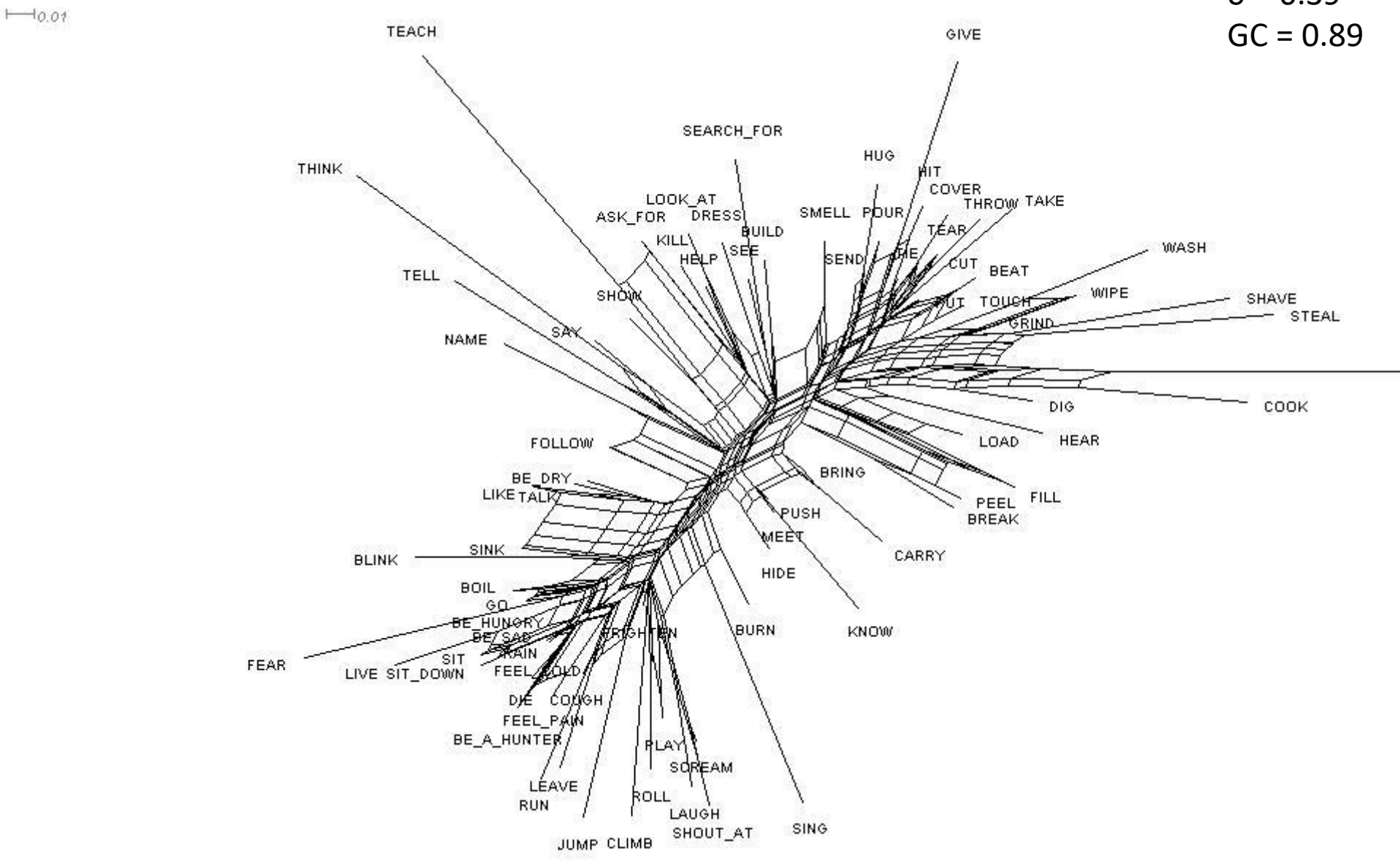
Here a NeighbourNet plot for Subject demoting/deleting alternations (passives and the like) (Wichmann 2015)

Hierarchies for alternations: SubjectDem/Del

- **Hierarchy** (Guttmann–Scale) for Subject-demoting/deleting (Wichmann 2015)
- CUT > BREAK, TEAR, POUR > FILL > PEEL > COVER, BUILD > COOK, TAKE > HIDE, LOAD > SHOW > TIE > WASH, KILL, SHAVE, SEND > THROW > GRIND, BEAT, TEACH > CARRY, PUT > DRESS, FRIGHTEN, WIPE > STEAL, GIVE > HIT, HUG > EAT > BRING > LOOK AT, PUSH, TELL > DIG, ASK FOR > SEE, NAME, THINK > SMELL > HELP, SAY, TOUCH, SING > BLINK > SEARCH FOR, BURN > KNOW > HEAR, SHOUT AT, CLIMB, LIVE > LIKE > MEET, FEAR, ROLL, TALK > FOLLOW, SIT > SIT DOWN > LEAVE, PLAY > RUN, COUGH, SINK, JUMP, FEEL COLD > BE DRY, LAUGH, BE HUNGRY > FEEL PAIN > DIE, BOIL > GO > BE SAD > SCREAM > RAIN, BE A HUNTER.
- **Interpretation**
- Semantic transitives (the Effective Action verbs of Tsunoda 1985) tend to occur towards the top of hierarchy, followed by two argument verbs, which do not conform to the transitivity prototype and monovalent verbs cluster at the bottom of the hierarchy
- The hierarchy shows also the effect of the verb's actionality, since accomplishments rank on balance higher than activities on the hierarchy

Object-demoting/deleting (Wichmann 2015)

δ = 0.39
GC = 0.89



Hierarchy for Object-demoting/deleting

- **Hierarchy (Guttmann–Scale)** (Wichmann 2015)
- EAT, SHAVE, GIVE, THINK, STEAL > WASH, CUT, TAKE, COVER, WIPE, SEE, SEARCH FOR, HIT, THROW, HEAR > COOK, KNOW, ASK FOR, TELL > BEAT, TEAR > POUR > FILL, CLIMB, HUG, LOOK AT, HELP, NAME > BREAK, KILL, TOUCH, LOAD, TEACH, SMELL > FEAR, DRESS (1) > SHOW, SEND, CARRY, TIE, PUT > SING, GRIND, DIG > FOLLOW, SAY, BUILD, PEEL > JUMP, LIKE, SHOUT AT, LEAVE, LIVE, PLAY, MEET, TALK, HIDE > BLINK, LAUGH, ROLL, BURN, FRIGHTEN, RUN, BE DRY, PUSH, BRING > COUGH, SIT, GO, SCREAM, FEEL PAIN, SINK, BE A HUNTER, BOIL, SIT DOWN, DIE, BE SAD, FEEL COLD, BE HUNGRY, RAIN
- **Interpretation**
- **Starts from "natural antipassives" (with an inherent or cognate object), extends to bivalent "manner-verbs" (Levin 2015), then to bivalent result-verbs, with monovalent verbs at another pole**

Alternation Hierarchies: conclusions

- This approach **captures interaction of lexical (transitivity)and grammatical (voice) categories in the domain of valency**
- The profiles for alternation hierarchies is different but **all hierarchies show certain functionally motivated preferences**, and have certain verb classes as a natural domain of application
  - For the Object-demoting/deleting hierarchy, one starts with events with natural antipassives like EAT, which are grammaticalized first
- In other languages it can be extended to other verb types, including canonical transitives, and possibly intransitives
- Importantly, when a certain voice alternations are extended beyond the domain (verb type) of its (most) natural application, it can be reinterpreted leading to a phenomenon of **voice ambivalence**
  - **Thus the reflexive marker can be reinterpreted as anticausative with verbs like BREAK (cf. Russian *slomatj-sja*), and as antipassive with verbs like EAT (cf. Russian *naestj-sja* 'have a fill')**

Ambivalent alternations

- Voice forms (or broader, a valency-changing markers) are often **"ambivalent"**, i.e. perform different functions when applied to different valency classes of verbs.
- Some relevant observations in the typological literature concerning polysemy of individual valency categories (see, e.g., Shibatani 1985 on passives), still the general picture is lacking.
- There is a recent dissertation on voice syncretism (Bahrt 2021)
- Yet ambivalency of voice markers is commonplace (Malchukov 2015; 2016; Bahrt 2021):
  - Causatives may be used as passives when applied to transitives (V.P. Nedjalkov 1964 and subsequent work)
  - Applicatives may be used as antipassives when applied to transitives

Passive-causative ambivalence

- **Manchu, where the same marker -bu- can be used both in the passive an causative function (Nedjalkov 1991, 1992).**
  - **with intransitives in the causative function**
  - **with transitives causative may be also used as a passive:**

(1) Manchu (Nedjalkov 1991: 5)

a. Bata-be va-bu-ha
enemy-ACC kill-CAUS-PST
'(He) made (somebody) kill the enemy.'

b. Bata-de va-bu-ha
enemy-DAT kill-PASS-PST
'(He) was killed by the enemy.'

- **The polysemy of the voice category performing both valency-increasing a valency decreasing function is puzzling, but can be accounted for if we assume that the common denominator of both processes is A-demotion (A-defocusing as a central function of passives in Shibatani 1985).**

Causative-applicative ambivalence

- Eskimo (Central Alaskan Yupik; Miyaoka 2015) features a peculiar category of adversative, which performs both a causative (A-adding) and applicative (O-adding) functions.
- Thus, the adversative category has the function of the adversative causative when derived from intransitives (see (2a)), but of adversative applicative when derived from transitives (see 2b)).

(2) Eskimo (Central Alaskan Yupik; Miyaoka 2015)

a. *Kic-i-aqa* *kicaq.*
sink-E_{ADV}-IND.1SG.3SG anchor.ABS.SG
'I had the anchor sunk (me negatively affected)'

b. *Ner-i-anga* *neqe-m* *neqca-mnek*.
eat-E_{ADV}-IND.3SG.1SG fish-REL.SG bait-ABM.1SG.SG
'The fish ate my bait *(on me)*.'

- Again an unusual polysemy/ambivalence, but note that both causatives and applicatives have a common denominator: valency increase

Applicative-antipassive ambivalence

- Also this polysemy is attested in Eskimo, where the applicative is used as a Benefactive applicative (in (3a)) but also as an antipassive (in (3b)).

(3) Eskimo (Central Alaskan Yupik; Miyaoka 2015)

a. Nalaq-ut-aanga *irnia-ma* *sass'a-mek*.
find-APPL-IND.3SG.1SG child-REL.1SG.SG watch-ABM.SG
'My child found *a* watch *for me*.'

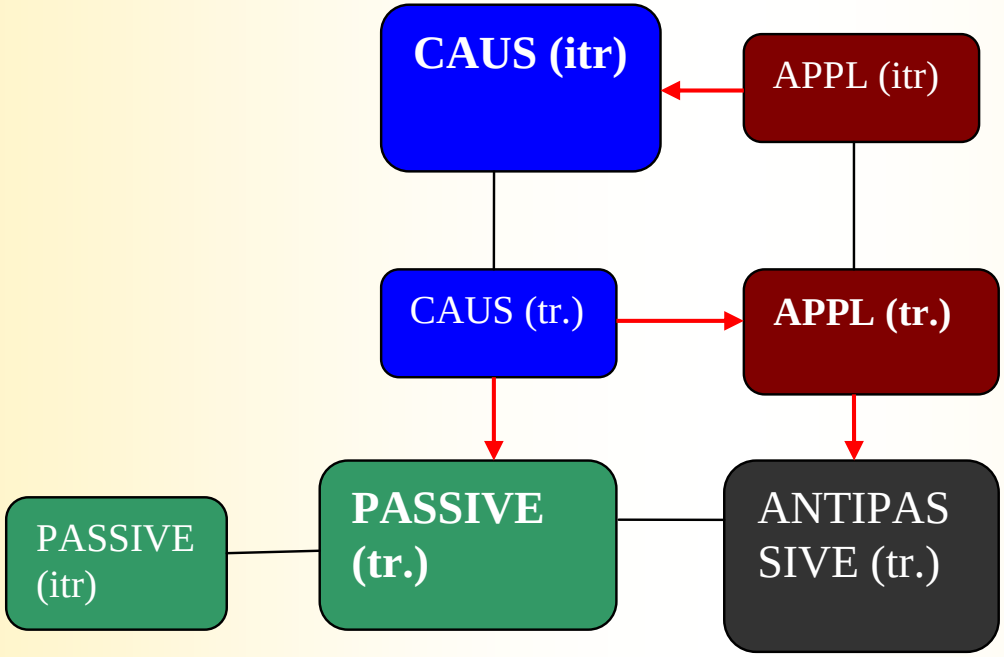
- b. Nalaq-ut-uq sass'a-mek.
find-APAS-IND.3SG watch-ABM.SG
'He found the watch.'

- This ambivalence has seemingly opposite effects (valency-increasing or decreasing), but can be accounted by the fact that both applicatives of transitives and antipassives share the same function of P-demotion.

Ambivalent voice markers: a semantic map

- Polyfunctionality on the part of „ambivalent" markers can be captured by a semantic map (Malchukov 2015), based on shared (syntactic) features:
  - Causative-passive polysemy: share the property of A-demotion:
    - holds only for causatives of transitives (A demoted to an Oblique)
  - Applicatives-antipassives: share the property of P-demotion
    - holds only for applicatives of transitives
  - Causative-Applicative polysemy:
    - for transitives: both demote a term to an oblique
    - for intransitives: both are transitivizers
  - Passive-antipassive polysemy: both are detransitivizer
- Thre map shows related categories (sharing syntactic features) adjacently(as usual on semantic maps)
- In addition it shows **directionalities**: direction of meaning shifts
- In addition the map reflects the dimension of (local) markedness (preferential use with certain verb types) indicated by the cell size.

Semantic map for polyfunctional voice markers



Directions of shift indicated; preferential uses indicated by the cell size

Conclusions: Semantic map for voice

- The map above, was called ‚transition network' (in Malchukov 2015), as it shows some unusual features:
- It is based on shared syntactic rather than semantic components
- **More importantly, it tries to capture both the iconicity of linguistic signs (the underlying semantic map representation) and (local) markedness.**
  - Iconicity restricts possible transitions in a network (through categories sharing certain features),
  - while local markedness determines the **direction** of a transition..
- **More generally, it represents more or less natural combinations of lexical (transitivity) and grammatical (voice) features in the domain of valency**
- **Less natural (infelicitous) combinations can be reinterpreted, leading to voice ambivalence**
- **In the second part of the talk we discuss interaction of lexical and grammatical features in in the domain of aspect – typological preferences in combination of lexical aspect (actionality) with the grammatical aspect**

Actionality and aspect: Preliminaries

- Several different approaches to universality of actional classification (Vendler 1967; Smith 1991, 1997; Sasse 2000; Johanson 2002; Tatevosov 2005);
- Some approaches assume that actional distinctions/ Vendlerian classes (Achievements, Accomplishments, Activities, States) are universal
- Some other approaches acknowledge typological variation
  - Among the latter approaches, most approaches locate the locus of variation in the lexicon (special classes of inchoative stative verbs present in some languages; cf. Turkish *otur-* ‚sit; sit down' (Johanson 1971; 2002))
  - An alternative approach advocated here (inspired by pioneering work by Viktor Xrakovskij on category interaction) locates the variation in interaction of actionality with aspect

Viktor S. Xrakovskij (head of St-Petersburg Typology Group)

Xrakovskij & Malchukov ed. 2020

Actionality classes: Preliminaries

- Before I turn to the issue of aspect-actionality interaction, I will
  - Introduce (and briefly exemplify) the general approach to category interaction as espoused in St-Petersburg Typology Group (see Xrakovskij & Malchukov 2016, 2020; see also Xrakovskij 1990, 1996; Malchukov 2009, 2011)
  - Illustrate how this approach works for a related domain of aspect interacting with tense
  - Show how the same approach extends to the study of aspect and actionality

Typology of category interaction

Syntagmatic dependencies between grammatical categories: some typological work

- Markedness studies: The number of the cross-cutting inflectional distinctions of the unmarked gram is larger as compared to the marked one (Greenberg 1966/Croft 1990)
- Examples of "distributional markedness":
  - Cf. in Koryak (Mel'čuk 1998: 26) case forms are distinguished only in the unmarked (singular) number, while numbers are distinguished in the unmarked (absolutive) case.
- Local markedness (Tiersma 1982; Croft 1990)
  - Certain category values produce more natural (less marked) combinations
- Aikhenvald&Dixon 1998: The choice within one category can influence/restrict the choice within another category:
  - E.g. in negative forms fewer TAM distinctions as compared to the positive.

Types of infelicitous combinations

- Xrakovskij 1996: The interpretation of one grammeme (the "recessive" grammeme) may depend on another one (the "dominant" grammeme);
  - For example, interpretation of aspects may differ in imperative as compared to indicative (hence imperative is "dominant" with respect to aspect and other verbal categories; Xrakovskij 1996
- Malchukov (2011): functionally **infelicitous combinations** are either blocked or reintepreted
  - For example, in Romance languages the distinction between perfective and imperfective (aorist/imperfect) is restricted to past tense and is not found in the present; in Slavic languages the combination of perfective and present is reinterpreted (see below)

Resolution of infelicitous combinations

- Malchukov (2011) on resolution of infelicitous combinations
  - 1) Blocking: the infelicitous combination is not available at all, due to the mutual restrictions of the categories in question; (symbolically X * Y);
  - 2) Asymmetric meaning shift: the infelicitous combination is available, but involves a change of meaning of one of the grammemes (the "recessive" grammeme in terms of Xrakovsky 1996); (X $\supset$ Y)
  - 3) Symmetric meaning shift: the infelicitous combination is available, but involves a change of meaning of both grammemes; (X $\cap$ Y).

Infelicitous combinations: meaning shift in tense-aspect interaction

- The best known examples of infelicitous combinations in the domain of tense/aspect interaction: **present perfectives**
  - present perfectives (see Malchukov 2009, de Wit 2017 on "present Perfective Paradox").
- **Blocking**: in Romance languages the distinction between perfective and imperfective (aorist/imperfect) is restricted to past tense and is not found in the present
- **Reinterpretation** of present perfectives in Slavic languages (Breu 1994; cf. Comrie 1976)
  - In East Slavic (e.g. Russian) tense grammeme is recessive (PFV ⊃ PRES): this combination is usually interpreted as future:

(4) Russian

delaet	→	*s-delaet*
do.PRES.3SG		PFVR-do.PRES.3SG
'does'		'will do'

Present perfectives

- In South Slavic (e.g. Bulgarian; Breu 1994) the default meaning of the perfective present is present narrative or habitual rather than future.
- (5) Bulgarian (Comrie 1976: 69):

  Spegljednet *se,* *pousmixnet,* *devojki…*

  glance.PFV.PRES.3PL REFL smile.PFV.PRES.3PL girls

  'The girls (**used to) look** at one another, smile at one another…'

Thus (Malchukov 2009; cf. Breu 1994)

- **In Bulgarian perfective aspect is recessive (PRES ⊃ PFV), insofar as perfective is reinterpreted as iterative**
- **In Russian Present tense is recessive: shifts to future (PFV ⊃ PRES) in the contexct of perfective forms.**

Factors underlying grammeme combinability (Malchukov 2011)

- 1) Semantic compatibility
  - *Semantically infelicitous combinations avoided, or if available, reinterpreted*
- 2) Markedness
  - An unmarked grammeme shows less restrictions on combinability as compared to the marked one (Croft's distributional markedness)
- 3) Relevance:
  - Aspectual distinctions favor Past tense, since they are most relevant for realized actions (cf. Comrie 1976).
- 4) Economy effects:
  - Overt expression of a semantically redundant grammeme is avoided.
    - Imperatives normally lack not only past but also future forms

Infelicitous combinations and markedness: markedness hierarchies

- Different factors (motivations) can be integrated into one model through the notions of "local markedness" and markedness hierarchies.
  - Patterns of local markedness (Tiersma 1982) are better viewed as markedness hierarchies, reflecting the relative naturalness of certain grammeme combinations (Croft 1990: 150).
- On this view an infelicitous combination is regarded as the most marked combination of values on the markedness hierarchy.

Markedness hierarchies: Tense hierarchy for aspect

- **Tense Hierarchy for the (perfective) aspect** (Malchukov 2011)

Past > Future > Present

Perfective

- **Past outranks Future due to relevance; both outrank Present due to semantic compatibility.**
- **Examples from European languages (cf. Comrie 1976)**
  - In Romance languages the aspectual opposition (aorist/imperfect) obtains only in the past,
  - in Greek it is found in past and future, but not in the present.
  - In Slavic languages it is extended to the present as well but the present perfective combination is reinterpreted

Actionality/aspect interaction

- **Turning to actional classes.**
- As in other cases certain values of actionality and aspect are more natural/harmonic than others
  - cf. Sasse (2002: 206-7): perfective aspect has achievements as a natural domain of application, while imperfective forms have states and activities as a natural domain of application.
  - NB: extension beyond the naturaldomain of application can lead to reinterpretation

- The following **Actionality Hierarchy** (from Xrakovskij & Malchukov 2016, 2020), can be used to predict/constrain appearence of aspectual operators with different actional classes (Vendlerian classes)

Actionality Hierarchy (Xrakovskij & Malchukov 2016)

Figure 2. Actionality markedness scale for aspect

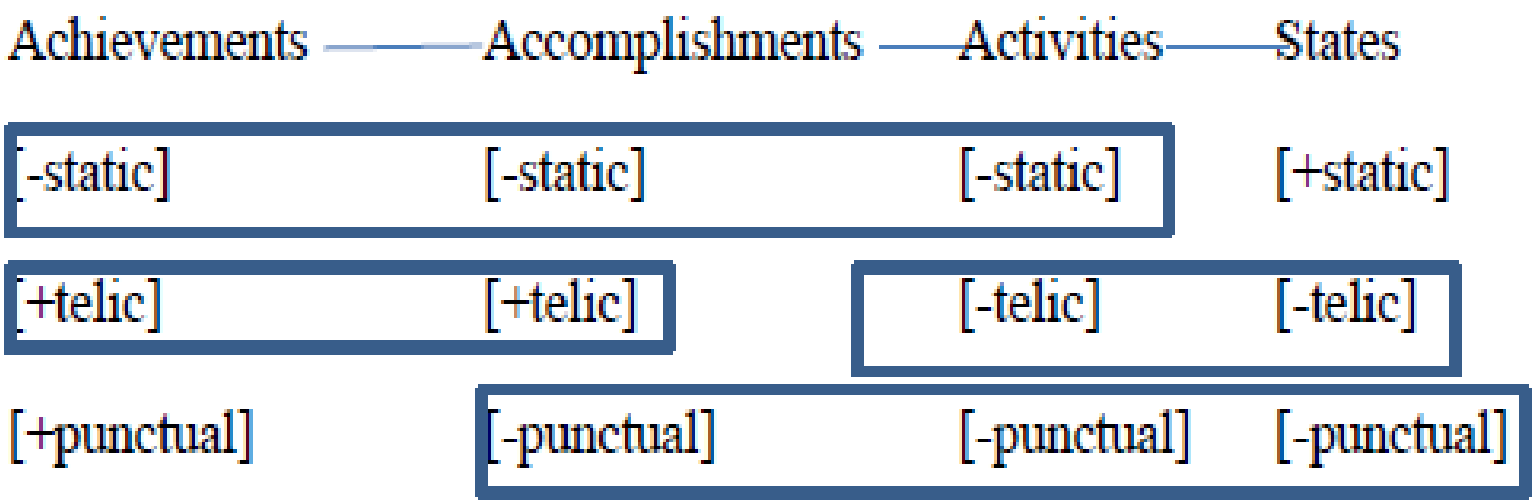
The hierarchy/scale predicts preferential uses of aspects with different aspectual classes

- Perfective grams are less marked and most felicitous with perfectives,
- Imperfective grams are less marked and most felicitous with states
- Conversely, infelicitous combinations such as imperfective with achievements (cf. English: *is finding), perfective with states will be either unavailable or coerce the verb class into another interpretation
  - Also in Russian stative verbs normally lack a perfective form, except for the aspectual pairs of the type ponimat' vs. ponjat' 'understand' – ('perfektnye pary' in terms of Paducheva 1996)

Actionality Hierarchy as a semantic map (Malchukov 2019)

- This hierarchy can be viewed as a semantic map, as is supported by shared semantic compenents
  - **A featural representation of verb classes (adopted from Van Valin 2005)**
    - Smith (1997) and Bertinetto (1997) use [-durative] instead of [+punctual].
  - **The boxed regions indicate intersection of features between individual verb classes**

Figure 3. Semantic map for actionality types



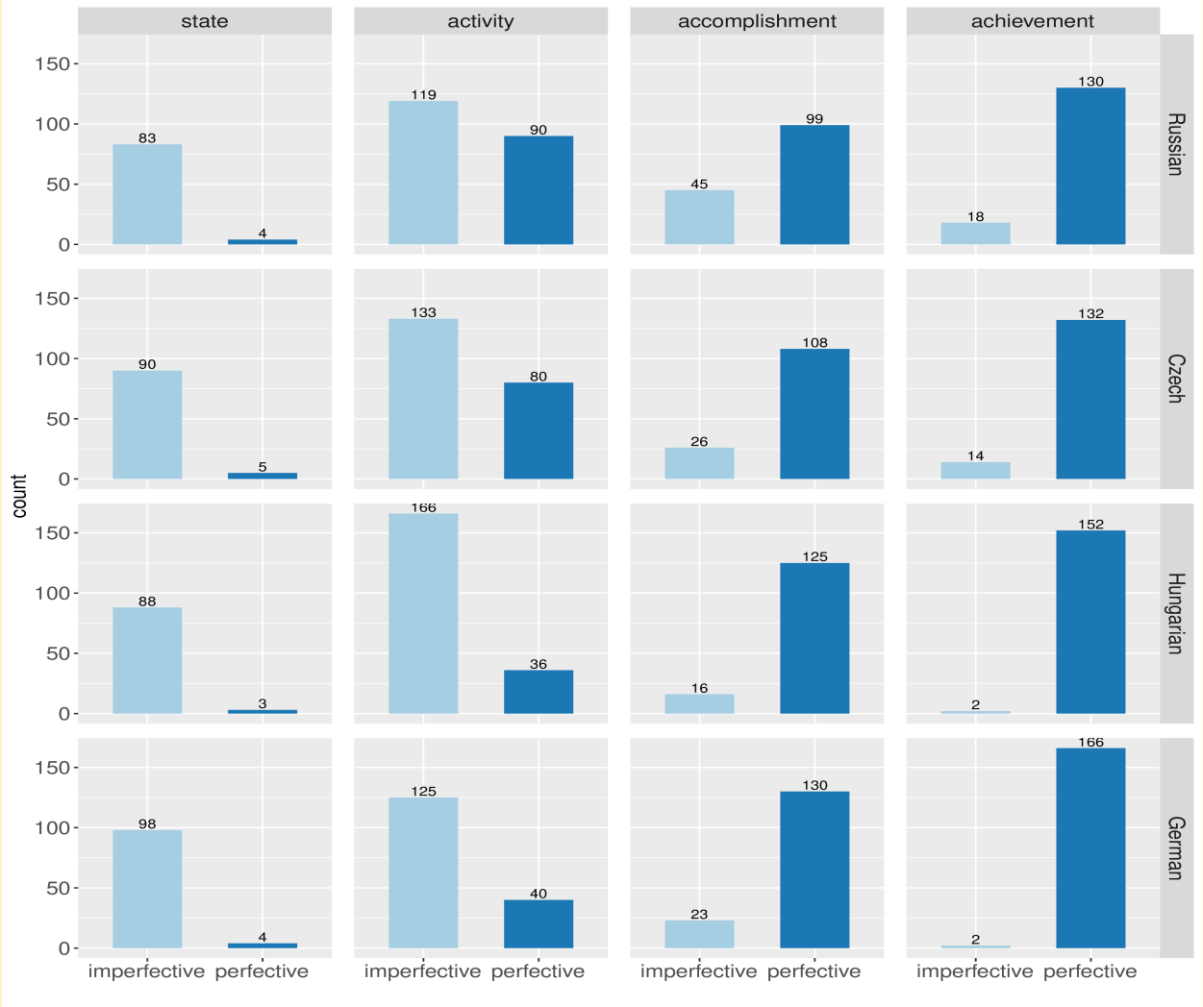
Aspect-actionality interaction

- Note that this approach predicts that felicitous (natural) combinations will be always available, while infelicitous may be blocked or reintepreted
- Thus restrictions or shifts are viewed as interface phenomena (interaction of aspect and actionality) rather than (solely) attributed to cross-linguistic variation in actionality classes (cf. Tatevosov 2002, 2016)
  - Thus, iterative interpretation of achievements (cf. Russian *naxodit* ‚finds repeatedly') is interpreted as coercion of achievements into semelfactives by imperfective operator.
  - Similarly, inchoative-statives in the approaches of Johanson and Tatevosov, are interpreted as coercion of states into inchoative achievements
    - Cf. „initio-transformatives" (inchoative-stative verbs) like Turkish *otur-* ‚sit; sit down' (Johanson 1971; 2002)

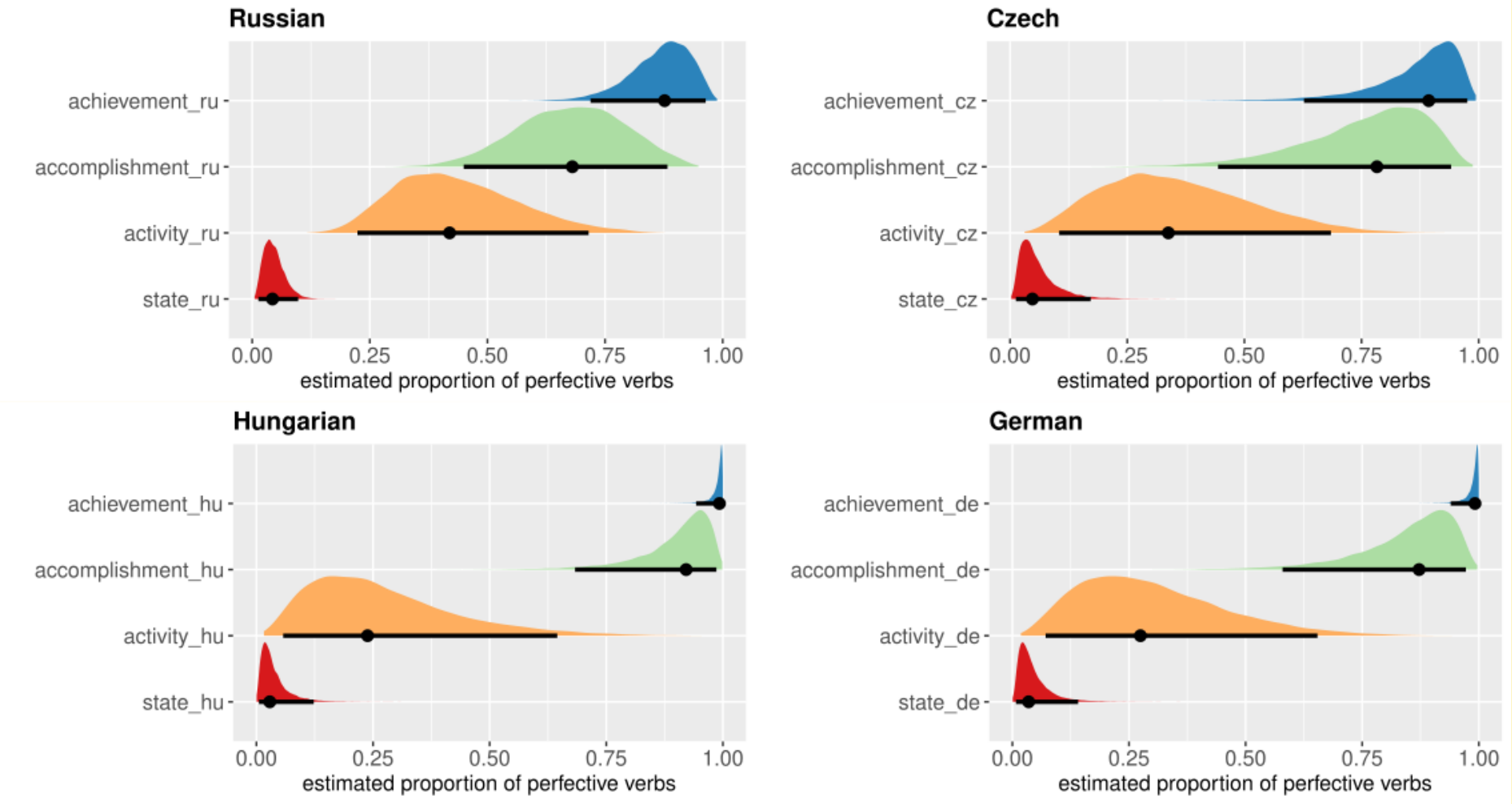
Hierarchy effects in coding (production)

- Still few typological studies of aspectual skewing for actionality classes
- **Croft (2012: ch. 4) reanalysed Dahl's (1985) typological dataset of tense-aspect categories using multidimensional scaling technique.**
  - His analysis confirmed a correlation between **achievements, favoring perfective contexts** (constructions), and **unbounded (atelic) predicates favoring imperfective contexts**.
- **Becker (2018) reports on a result of a comparative corpus study of interaction of aspectual forms with actionality in Russian and Czech as compared to Hungarian and German.**
  - The **overall pattern is in accordance with the hierarchy** insofar as the use of perfectivizing prefixal morphology is most frequent with achievements, and least frequent with stative verbs, with activities and accomplishments falling in-between
    - For languages with less grammaticalized aspect (Hungarian, German), a verb form was classified as perfective if it presented the situation as a temporarily limited one or as a situation with an (imposed) temporal limit (terminative).

Becker 2018: contrastive study of prefixation in 4 languages



Becker & Malchukov, fc: binomial regression model



Estimated aspectual values across actional classes in the four languages

Hierarchy effects in interpretation

- Bohnemeyer & Swift (2004) on **aspectual markedness in production and interpretation:**
  - In **production** aspectual skewing ("an ideal telicity dependent aspect system" exemplified by **Yucatec Maya**)
    - Imperfective marked for telic (unmarked for atelic)
    - Perfective marked for atelic (unmarked for telic)
  - In **interpretation**: **default aspect**; aspectual value depends on telicity/actionaility class
    - telic -> perfective;
    - atelic -> imperfective

(6) Inuktitut (Bohnemeyer & Swift 2004: 267)

a. Ani-juq	*b. Pisu-ttuq*
go.out-PART.3SG	walk- PART.3SG
'He/she went out.'	'He/she is walking'

- Clark (2008) showed though that in fact only achievements in Inuktitut receive a recent past interpretation,

Hierarchy effects in interpretation

Same preferences can be detected in interpretation (Bohnemeyer & Swift 2004), (Xrakovskij & Malchukov 2016, Malchukov 2019)
If a perfective interpretation is available for a less natural combination (e,g, perfective of activities, it will be found with more natural - perfectives of achievements)

Figure 3. Default perfective and actionality classes in 3 languages

Legend:

default perfective in Inuktikut: .....

default perfective in Even: - - - - - -

default perfective in Evenki: ———

Illustrated for Even (Tungusic):

(a) *nulge-re-n*
nomadize-AOR-3SG
‚he nomadizes'

(b) *em-re-n*
arrive-AOR-3SG
‚he just arrived'

With activities, „aorist" has a present interpretation (see (a)), with achievements and accomplishments, it refers to recent past (see (b))

Conclusions

- The proposed approach seeks to reduce lexical variation in the domain of actionality **to interaction of actionality with aspect** (thus reducing variation to the general problem to compositionality)
- In this respect it continues the approach of Xrakovskij in terms of dominant and recessive categories, combining it with typological concepts of local markedness, and my own work on infelicitous combinations
  - Either grammatical aspect reinterprets actional class (cf. inchoative statives)
  - Or actional class leads to reinterpretation of aspect, leading to aspect polysemy ('default aspect'; compare voice ambivalence)
- Markedness hierarchies are basic tools for capturing variation in this domain
- The most marked (infelicitous) combination of the respect values will be either unavailable (blocked) or reinterpreted
- Similar effects can be demonstrated for interaction of lexical and grammatical categories in the domain of valency (transitivity and voice in interaction) and actionality(interaction of lexical and grammatical aspect)

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