Genericity with Epistemic Effects

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Genericity: Two main phenomena

Krifka et al 1995 (and much subsequent work)

- **KIND REFERENCE**

(1) a. (The) bronze was invented as early as 3000 B.C. kind-denoting argument
b. Alligators are common/widespread in Florida.
c. The potato was first cultivated in South America.
d. Marconi invented the radio/ *a radio.

— **Generalizations over properties of kinds, which particular instances realizing that kind cannot have**, e.g., the potato in (1c) does not denote some particular potato or group of potatoes, but rather the kind POTATO
— contain kind predicates that select for kind denoting terms in one of their argument positions: e.g., invent, be(come) common/ widespread/extinct.

- **CHARACTERIZING SENTENCES**

(2) a. {The | a dog} barks. kind-denoting argument
b. Dogs bark.
c. Tim has a beer after work. ordinary individual argument

— 'Non-accidental' regularities over individuals and/or situations, possibly due some underlying causes, also rules, agreements that construct our social reality.
— (2a,b): the **regularity holds of individual instances of a kind, and also for the kind**
— (2c): the regularity of action that holds of (stages of) an ordinary individual

Genericity: Two main phenomena

KIND REFERENCE and CHARACTERIZING SENTENCES are independent of each other

- **occur independently of each other**

(1) *Marconi invented the radio/ *a radio.*
kind reference in a sentence that is not characterizing, but episodic

(2) *Tim has a beer after work.*
characterizing sentence without kind reference

- **co-occur in a single sentence**: kind reference in a characterizing sentence (paradigmatic examples of generic sentences according to Dahl 1985, 1995)

(3) a. {*The* | *a dog*} barks.
b. *Dogs* bark.

- The subject refers to the kind DOG, the sentences express a generalization that is true also by virtue of the fact that the hold of most members of the kind.
- The kind reference and characterizing sentences can occur together, because if a regularity holds across individuals of a kind, it can be predicated of that kind.

Goal

Explore the nature of generalizations that are expressed by **CHARACTERIZING GENERIC SENTENCES** (in the sense of Krifka et al. 1995). Examples:

(2) a. {The | a dog} barks.
b. Dogs bark.
c. Tim has a beer after work.

(3) Water consists of oxygen and hydrogen.
(4) Ravens are black.
(5) A snake is a reptile.
(6) The Dutch are good sailors.
(7) Sharks attack people.

How do people judge generic sentences as true of false?

- Much of our everyday, commonsense knowledge of the world is encoded in characterizing generic sentences.

- We make quick and confident judgements about their truth or falsity. However, it is not entirely clear

    - *how exactly* we go about making such judgements,
    - on what grounds exactly, and
    - how we infer that there is a regularity there based on our experiences in/with the world that 'transcends' such experiences.

- A theory of the meaning (the truth conditions) of generic sentences has been the subject of long-standing debates in semantics, philosophy, psychology, AI, and other related fields.

Exception tolerance: a key feature of generics

- **Characterizing generics may hold without exceptions:** e.g., generics that correspond to universal laws of nature

(1) Water consists of oxygen and hydrogen.

- **Most admit exceptions.** They are TRUE even if there are exceptions to the generically-predicated property:

(2) Ravens are black (though a few are white).

(3) Lions have a mane (though most do not, female lions and cubs).

(4) Tim has a beer after work (though when he works late, he does not).

Exception tolerance: a key feature of generics

- **EXCEPTION-TOLERANCE is perhaps the most puzzling feature of characterizing generic sentences** (Pelletier & Asher 1997, i.a.).

  > "Perhaps it is a feature of having finite, fallible minds that makes us often notice regularities that have exceptions, or perhaps it is more a matter of needing to be able to choose regularities quickly in order to get on with other aspects of our survival (…) regularities commonly have exceptions; either ones that are noticed later or ones that we think we can safely ignore (for whatever reason)" (Pelletier & Asher 1997, p. 1129).

- Fundamental question: **How many exceptions can a given characterizing generic sentence tolerate while remaining true?**

- **How do we reason with exceptions?**
  - What is an exception?
  - What is normal, relevant, typical or characteristic?
  - How do exceptions that a given generalization admit bear on its truth?

Main data

- One useful strategy trying to understand how people reason about regularities expressed by generic sentences is to examine the properties of generic markers, i.e., overt expressions that enforce a characterizing generic reading of a whole sentence.

- Such markers tend to be tied to the finite (head) verb of a characterizing generic sentence.

- In a number of typologically diverse languages, they are realized as affixes on the verb, and also auxiliaries within a verb complex:

  - Dahl (1995) lists the following languages: Arabic (Classical), Akan, Catalan, Czech, Didinga, German, Guarani, Hungarian, Kammu, Limouzi, Montagnais, Sotho, Spanish, Swedish, Swedish Sign Language, Yucatec Maya, Zulu and also.

  - Markers of this type remain largely unexplored.

Main data

- **the suffix *–va-* in Czech (West Slavic)**
  - ***'–va-'*** is its standard citation form (see e.g., Dahl 1995), which stands for the various allomorphic forms of this suffix
  - marks imperfective verb forms that only have a generic interpretation
  - in traditional Czech studies (misleadingly) referred to as *iterativní / násobená slovesa* ('iterative/ multiplicative verbs') (Kopečný 1948, i.a.)

Main data: **the Czech suffix *–va-***

- **incompatible with generalizations that hold without exceptions:** e.g., universal laws of nature

(1) Water consists of oxygen and hydrogen.

Voda { se skládá IPFV / ? **se skládává IPFV** } z O and H.

- **compatible with most generalizations that admit exceptions**

(2) Ravens are black.

Havrani { jsou IPFV / **bývají IPFV** } černí.

(3) Tim has a beer after work.

Po práci si Tim { dává IPFV / **dávává IPFV** / dá PFV } pivo.

- Characterizing generic sentences may be conveyed by
  - imperfective and perfective verbs that are unmarked for genericity, and also by
  - imperfective verbs that are specifically marked for genericity with the suffix *–va-* which enforces only a generic reading of a whole sentence.

Main questions

i. How does the use of *–va-* in generic sentences bear on how we reason in the face of exceptions and on how reasoning with exceptions affects the truth of generic sentences?

ii. In languages that have formal means to enforce a generic interpretation of a sentence (apart from forms that are unmarked for genericity), how do we motivate the use of formally marked generic forms to express characterizing generics, when they can also be expressed by related forms that are unmarked for genericity?

Proposal

- The suffix *–va-* selects for generalizations that
  - are based on episodic conditions in the actual world ('actuality entailment'), and,
  - the speaker believes to be **incompatible with a categorical absence of exceptions** or non-confirming cases.

  Specifically, it adds a modal epistemic layer to the meaning of characterizing generic sentences that tracks two main epistemic attitudes of the speaker ***S*** to exceptions that ***S*** thinks cannot be safely ignored:

  — ***S* does not know for sure whether there are or are not exceptions** to the generically predicated property *p* and uses *–va-* to avoid the possible implication of commitment to no exceptions, and hence to a stronger claim which would be false or misleading (ignorance inference).

  — ***S* knows that there are exceptions** to the generically predicated property *p*, and uses *–va-* to assert that the generalization does not hold for all the instances in its episodic base.

Plan for today

- Part I Characterizing generic sentences
  - Key properties
  - Approaches to their meaning
- Part II The Czech suffix *–va-*

Characterizing generic sentences: Key properties

- No general agreement on the criteria that delimit all and only characterizing generics (see e.g., Dahl 1985, 1995; Nickel 2008, 2016; Pelletier 2009; Carlson 2013).

- Most agree that prototypical characterizing generic sentences are sentences like

(1) **Ravens** are black.

(2) **Mosquitoes** carry malaria.

(3) **The potato** contains protein.

  - refer to kinds, rather than to ordinary individuals, i.e. express a predication about a kind denoted by a **KIND DENOTING NP/DP** (see e.g., Dahl 1995, Pelletier and Asher 1997, Carlson 2013)

  - lack explicit quantifiers like *some*, *many*, *most*, *all* (unlike explicitly quantified statements that carry information about how many members have the relevant property)

Characterizing generic sentences: Key properties

- All characterizing generic sentences are
  - aspectually stative
  - most admit exceptions
  - intensional

Carlson (1989, p.168, stative, based on lexically non-stative predicates, intensional and non-monotonic), Krifka et al (1995)

Stativity

- **Core semantic property: the lack of reference to a specific occurrence**[1] (Krifka et al 1995)
- **Grammatical test: incompatibility with episodic adverbials referring to specific locations in time or space**

(1) a. ? Lions right now roar behind the bars of the cage.
b. ? Mia was intelligent in her office at 10 a.m. yesterday.

- Generic sentences do not express a specific episode or an isolated fact (in the actual world), but a regularity that abstracts over or 'transcends' particular episodes or facts--and so are clearly opposed to episodic sentences, which refer to particular episodic occurrences or facts.

(2)

generic characterizing sentence	particular **episodic** sentence
Lions roar.	Simba is roaring behind the bars of the cage.
Traffic lights flash.	The traffic light flashed five times.
Tom plays hockey.	Every day last week, Tom played hockey.

[1] 'a specific occurrence' may be a plurality of iterated situations of the same type that are not a part of a larger pattern

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Exceptions: How many?

- Most characterizing generic sentences admit exceptions.

- Different types of characterizing generic sentences admit different types and number of exceptions.

Exceptions: How many?

- **Majority satisfaction:**
  The generically-predicated property holds of a large percentage of instances.

(1) a. Ravens are black. TRUE
b. ∀x[(**ravens**(x) ⟶ **black**(x)] FALSE

- (1a) is true despite the fact that there are some white ravens
- (1b) is falsified by white ravens

(2) Dogs bark (though not all do, Basenjis do not bark).

Exceptions: How many?

- **Majority satisfaction** is **not sufficient** for the truth of all characterizing generics, because there are characterizing generic sentences that are **FALSE** despite the majority of the kind having the generically-predicated property.

(1) *Books are paperback.* **FALSE**

Fact: The majority of books are paperback, some are hardcover books.

Exceptions: How many?

- **Majority satisfaction** is **not sufficient** for the truth of all characterizing generics, because there are characterizing generic sentences that are **FALSE** despite the majority of the kind having the generically-predicated property.

(1) *Books are paperback.* **FALSE**

Fact: The majority of books are paperback, some are hardcover books.

- Leslie (2007, 2008): Motivation in terms of the positive/negative nature of the exceptions to the generically-predicated property. The exceptions to instances of the kind BOOK which are paperback (property F) are books that have the positive alternative property of having a hardcover (property G): so hardcover books are the ***positive counterinstances*** to paperbacks.

kind **K: BOOK**	
property **F: PAPERBACK**	property **G: HARDCOVER** a positive alternative to the property **F** incompatible with **F**
instances of the kind BOOK that are paperbacks	instances of the kind BOOK that are hardcovers = positive counterinstances to paperbacks
K's are F is false	**K's are G** is false

Exceptions: How many?

- **Majority satisfaction** is **not sufficient** for the truth of all characterizing generics …
- Leslie (2007, 2008) (cont):

(2) *Ducks lay eggs.* TRUE

Ducks that lay no eggs (male ducks) have no positive alternative property to the property 'lay eggs', they simply fail to do so; they are **negative counterinstances** to ducks that do lay eggs (mature female).

The partition of the kind DUCK	
lay eggs	¬lay eggs **negative counterinstances**
F property	¬F property

- A generic of the form 'Ks are F' is true, if the ***counterinstances*** to the generic claim are ***negative***, i.e., do not pit a positive alternative property G to the property F.
- Also predicts

(3) *Books are hardcover.* FALSE

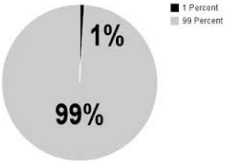
Exceptions: How many?

- **Majority satisfaction** is not only not sufficient, but also **not necessary** for the truth of all characterizing generics, because there are characterizing generic sentences that are **TRUE** even if the majority of the kind does not have the generically-predicated property:

  — a minority **subkind** satisfies the property

(1) a. Lions have a mane (though most do not, only adult male do). TRUE
  b. ∀x[(**lions**(x) ⟶ **have_a_mane**(x)] FALSE


— a **small fraction** of the kind satisfies the property

(2) a. Mosquitoes carry the West Nile virus (though 99% do not,.
  b. Sharks attack people.

- **What is characteristic of a kind need not be prevalent among its members.**

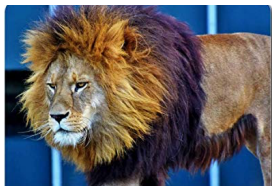
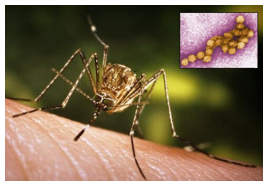
Exceptions: How many?

- Why should majority satisfaction be neither necessary nor sufficient for the truth of generic sentences?

  — If the majority of mosquitoes do not carry the WN virus, why are they not regarded as the unexceptional individuals?

  — How do mosquitoes without the virus (99%) bear on the truth of *Mosquitoes carry the West Nile virus?* Why is *Mosquitoes do not carry the West Nile virus* judged false?

- A part of the answer: What is characteristic of a kind need not be prevalent among its members, but rather, it **may be based on facts that we subjectively view as significant in some way, because they are particularly salient to us, noticeable, striking, impressive, harmful and the like**. E.g.,
  - having a mane is such a **salient** feature of adult male lions that it is treated as **characteristic** of the whole kind LION;
  - carrying the potentially deadly virus or attacking people are such **striking** features of mosquitoes and sharks, respectively, that they are treated as **characteristic** properties of these kinds.


Exceptions: Consequences for a semantic theory

- One immediate consequence: Exception-tolerance of characterizing generic sentences makes implausible any attempts to reduce the semantic analysis of all characterizing generics in terms of

  (i) a single expression of (vague) quantity like *in a significant number of cases*, *most*, *many* or probabilistically-oriented adverbs like *generally*, *usually*, *typically*;

  (ii) a single extensional quantifier like *all*, *each*, *most*, *some*, no matter how vague or probabilistically specified it might be.

  See Lawler 1973, Carlson 1977, Krifka et al 1995, Pelletier & Asher 1997, Nickel 2016, i.a.

Exceptions: Consequences for a semantic theory

- One supporting argument (among others): There are characterizing generic sentences that cannot be paraphrased--salva veritate--with *generally, usually* or *typically*.

(1) a. Sharks attack swimmers. TRUE
b. Usually/Generally/Typically, sharks attack swimmers. FALSE

(2) a. Books are paperbacks. FALSE
b. Generally / Typically, books are paperbacks. TRUE

Characterizing generic sentences: Key properties

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Carlson (1989, p.168, stative, based on lexically non-stative predicates, intensional and non-monotonic), Krifka et al (1995)

Intensionality

- Characterizing sentences are inherently intensional, which makes implausible any extensional analysis, be it quantificational in terms of explicit extensional quantifiers or probabilistic.
- **Characterizing sentences describe** regularities, rather than mere accidental correlations; they transcend our immediate experiences of the world (specific isolated instances, facts) in so far as they specify not only what actually obtains at given worlds and times as a matter of some regularity, but also **what is (realistically) possible** (Lawler 1973, Dahl 1975, Carlson 1989, i.a.).

(1) *This machine crushes oranges.*

(i) *… and we have used it often since we bought it about a year ago.* **'habit'**

- TRUE by virtue of some observed real world episodes, and possibly also due to our knowledge about its intended function.

(ii) *… but we haven't used it yet, it is still packed in its shipping box.* **disposition**

- TRUE by virtue of its design to crush oranges, even if the machine never has, and never will have crushed a single orange, because it may be accidentally destroyed in shipping.

Intensionality

- Characterizing sentences can be true even if they have only a purely hypothetical or dispositional reading, that is, if they had as yet no verifying instances and will never have any in the actual world.

(1) Mail from Mars goes in this box. *disposition*
TRUE even if no mail has arrived yet, and may never arrive

(2) The Speaker of the House succeeds the Vice-President. *regulative rule*
TRUE even if this situation has not occurred yet

(3) Tab A fits in slot B (on a cereal box cut-out toy). *operating instructions*
TRUE even if the box is thrown out and the toy never cut out and made.

Intensionality

- Given the intensionality of characterizing generic sentences, a mere **finite number** of verifying instances or particulars in the actual world (or at a given world and time) will not do to ground their meaning.

- This makes generic sentences distinct from
  - **iterative** and **pluractional** sentences, and
  - **explicit quantificational** sentences with **extensional quantifiers**

Intensionality

- Characterizing generic sentences are distinct from **iterative** and **pluractional** sentences, whose truth depends on a multiplicity of verifying instances in a given (actual) world.

- Iterative and pluractional sentences
  - denote a series of situations of the same type, which occur in a sequence and are relatively close to one another in time;
  - and which are not a part of a larger pattern/regularity, and lack a modal (intensional) component.

(1) Every day last week, Jess played golf.

(2) The flight flashed for an hour.

Intensionality

- Characterizing generic sentences are distinct from **explicit quantificational sentences**, which may quantify over different domains (i.e., different closed sets of instances) in different contexts, and which contain **extensional quantifiers** (over episodic formulas with free variables). (Examples from Pelletier and Asher 1997.)

(1) Birds fly. characterizing generic S

(2) a. Most birds fly. d. Birds generally fly. explicitly quantificational Ss
b. Usually, birds fly. e. Normally, birds fly.
c. Birds typically fly. f. In general, birds fly.

- (1) makes a generic claim about an open class of entities, i.e., about every (realistically) possible bird, rather than a closed class of all existing birds, and it is backed up by natural laws.
- (2a-f) can be used to express this generic meaning. In addition, they can be used to assert, on a purely extensional level, that most, many etc. birds can fly, crucially without any 'nomic force', and so they do not convey a generic statement.
- Generic statements like (1) imply or implicate extensional statements like (2a-f) (i.e., have extensional consequences that are conveyed by (2a-f)), given that they admit exceptions, and also that we cannot validly infer that any particular individual falling under the subject term has the generically-predicated property.

Intensionality

- The relation between characterizing generic sentences and **explicit quantificational sentences** (cont.)
- Consider an example from Pelletier & Asher (1997).

  Context: A world in which all the remaining pandas happen to have only three legs.

(1) **universally quantified sentence:** *All pandas have three legs.*
$\forall x[\textbf{panda}(x) \rightarrow \textbf{have\_3\_legs}(x)]$
TRUE by virtue of accidental actual world facts about a closed class of entities

(2) **generic sentence:** *Pandas have three legs.*
FALSE as a generic claim about the kind PANDA, i.e., an open-ended class of not only existing pandas, but also any possible ones with the requisite genetic make-up.

(3) **generic sentence:** *Pandas have four legs.*
TRUE as a generic claim about the kind PANDA.
- does not make a claim about a closed set of existing pandas, but about every (realistically) possible panda
- the actual quantity of pandas in the extension of the subject *pandas* does not make the sentence true or false, but may serve as evidence for some pattern or causal factor that underlies the generalization

Summary: Exceptions and intensionality

- The exception-tolerating and intensional (modal) features of characterizing generic sentences make implausible their analysis in terms of
  - — any explicit extensional quantifier or quantity expression
  - — any quantity-based measure and statistical correlations (however vague or probabilistic they might be).

- Most agree that all quantity-based measures or statistical correlations (however vague or probabilistic they might be) fail to motivate how we judge generic sentences to be true or false (Carlson 1977, Krifka et al 1995, Nickel 2013, 2017, i.a.)

  > "… an insightful theory of generics should **not** be couched in terms of **statistical connections** and should not attempt to predict the strength of the statistical correlation" (Nickel 2013, p. 6, 2017).

Plan for today

- Part I Characterizing generic sentences
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- Part II The Czech suffix *–va-*

A unified analysis of all characterizing generic sentences

- On one dominant view, characterizing generic sentences form a single class of sentence types constituting a unified phenomenon, for which a unified semantic analysis should be possible (Krifka et al 1995, Carlson 1995, 2007, i.a.).
- **Analysis in terms of the generic operator GEN**

  GEN $[x_1 \ldots x_i ; y_1 \ldots y_j]$(Restrictor$[x_1 \ldots x_i]$; Matrix$[\{x_1\} \ldots \{x_i\}, y_1 \ldots y_j]$)[1]

  $x_1 \ldots x_i$ variables bound by GEN
  $y_1 \ldots y_j$ variables bound existentially, with scope just in matrix
  $\{x_1\} \ldots \{x_i\}$ means $x_1 \ldots x_i$ may or may not occur in matrix

  GEN
  - on early proposals, an unselective quantifier à la Lewis (1975)
  - a phonologically null Q-Adverb, which
  - quantifies over situations, occasions or cases (Lawler 1972)
  - is distinguished from overt Q-adverbs like *always, usually* by its modal (intensional) dimension (Krifka et al 1995, Chierchia 1995)
  - relates a restrictor and a matrix whose variables are respectively bound by GEN and by existential closure, if left free by GEN (e.g. Kratzer, 1995; Rooth, 1995)
  - The Restrictor specifies the domain over which the variables range, and the Matrix (or Scope) specifies the property that is attributed to the relevant members of the domain.

[1] Pelletier, "Generic Sentences and Predication", handout

The semantics of GEN?

- Some theories of the meaning of generics in semantics, philosophy, AI, computer science and psychology (for summaries see Nickel 2016, 2017; Pelletier & Asher 1997; Krifka et al 1995, i.a.):

  — Relevant Quantification
  — Abstract Objects
  — Prototypes
  — Stereotypes
  — Modal Conditionals
  — Situation Semantics
  — Non-monotonic logic (default reasoning approaches)
  — Probabilistic/Majority-Based
  — Normality-Based Approaches

  Pelletier & Asher (1997) focus of most of the above theories on the 'extensional consequences', exception-tolerance of generics

The semantics of GEN? Two main perspectives

Carlson (1995)

- two opposed models of how generic sentences can be true or false, which reflect two different theoretical attitudes towards the grounds or "base" for the truth of generic sentences:
    - **Inductive model**
    - **Rules and regulations model**
- Carlson's starting point:
    - The fundamental problem of the meaning of generic sentences lies in understanding the relation between the generalization and what counts as evidence for its truth, the **base for the generalization:** namely, the relevant 'cases', instances or particulars, isolated facts, situations, and in general our various experiences of the world (Carlson 1982, 1995, i.a.).
    - Different kinds of characterizing generics call for different types of bases for their generalization to be relevant, and therefore determine different perspectives on the meaning of generic sentences (or different models to ground their truth).

The semantics of GEN? Two main perspectives

- Key questions:
  - What is the base for the generalization?
  - What basic observations exactly, observed (and also unobserved) evidence, should count as supporting instances or particulars?
  - How many verifying instances or particulars are 'enough' to justify the truth of a given generic sentence?
  - How do we infer that there is a regularity there?

The semantics of GEN? Two main perspectives

What is the base for the generalization?

- For many characterizing generics, it is fairly clear what basic observations exactly should count as their supporting instances or particulars:

(1) *Tim has a beer after work.* **generic S**

Base for the generalization: A particular situation after work in which Tim has a beer, after having observed 'enough' of such situations one may inductively infer (1)

…    …

Such particular situations that inform the generalization in (1) are straightforwardly describable by particular episodic sentences like

(2) *Tim was having a beer after work, when Sally entered the bar.* **particular episodic S**

The semantics of GEN? Two main perspectives

What is the base for the generalization?

- There are characterizing generic sentences for which there may be many different types of situations (not just one) that may count as evidence for their truth. These are characterizing generics that are headed by individual-level predicates like *know French* (Krifka et al 1995, Ryle 1949):

(1) *Heather knows French.*
Base for the generalization: A situation in which Heather speaks, reads, writes or understands and reacts appropriately …

- There are characterizing generic sentences for which it is not (entirely) clear what counts as evidence for their truth, what instances or situations, if any, must occur in the actual world to support their truth.

(2) *Joey is a bachelor / intelligent.*
(3) *Bob is a student.*

The semantics of GEN? Two main perspectives

What is the base for the generalization?

- There are characterizing generics which are **TRUE** even if they have no verified instances in the actual world and may never have any; they denote what is purely hypothetical, such as unrealized properties and dispositions.

(1) *Mail from Antarctica goes in this box.*

The semantics of GEN? Two main perspectives

Inductive Model

- Paradigm examples: descriptive generalizations like *Tim has a beer after work, The Sun rises in the East* or *Dogs bark.*
- **Characterizing generic sentences express inductive generalizations which are true based on some observed (or unobserved) set of episodic conditions in the world.**
- Episodic truth conditions are basic and generic truth conditions derived from them.
- The semantic representation of generic sentences includes a substructure encoding the episodic base for the generalization. (Supporting evidence: adverbial modification, as in *In cooking, Sam tastes the soup just once*.)
- Different kinds of characterizing generics call for different types of episodic instances or particulars, or 'cases', to be relevant as their base for the generalization. Three main types are distinguished (Krifka et al 1995, Pelletier & Schubert 1997, Carlson 2008):
    - generalizations over situations: *Tim has a beer after work.*
    - generalizations over a class of individuals: *A potato contains vitamin C.*
    - situations and individuals ('double generalizations'): *Dogs bark.*

The semantics of GEN? Two main perspectives

Inductive Model

- particular **situations**

  Tim has a beer after work →
  GEN[x,s] (*x* = **Tim** & x IN s & after_work(s); x **has a beer** IN s)
  'For all appropriate situations *s* after work such that Tim is in *s*, Tim has a beer in *s*.'

- particular **individuals**

  A potato contains vitamin C →
  GENx(x is a **potato**; x **contains_vitamin_C**)
  'Whenever x is a potato, x contains vitamin C.'

- particular **situations and individuals** ('double generalizations')

  Dogs bark expresses
  (i) a generalization about the kind DOG, based upon instances of individual dogs having the property of barking, and at the same time,
  (ii) a generalization over individual dogs, based upon particular episodic situations of barking by a stage of an individual dog.

- Disadvantage: The problem of induction (Hume's problem).

The semantics of GEN? Two main perspectives

Rules and regulations Model

- **Characterizing generic sentences are true by virtue of some causal structures or forces in the world that are behind the corresponding episodic structures in the world.**
- Paradigm examples: normative generalizations, e.g., constitutive rules of games, regulative rules of legally-regulated activity (like rules of the road):

(1) Bishops move diagonally.
(2) The Speaker of the House succeeds the Vice-President.

- The instances that count as evidence for the truth of a generalization are not statable as episodic sentences: e.g., a particular episodic situation denoted by *Max moved his king's bishop from K2 to Q1* has almost nothing to do with whether (1) is true, except as evidence that some underlying causal structure or force is in force, i.e., the rule of chess given in (1).
- Characterizing generic sentences are judged true or false with respect to a set of rules (or a finite list of propositions), viewed as irreducible entities.
- In addition to such 'rules and regulations', the requisite ontology includes the ontology needed by the inductive model (the extensional entities necessary to construct the grounding of episodic sentences, such as individuals and situations, times and places).

The semantics of GEN? Two main perspectives

- Carlson (1995) argues for **a rules and regulations model for all characterizing generic sentences, and for the grounding of the semantics of the GEN operator.**
- A rules and regulations model is best suited for generic sentences that do not require any array of observed (or even unobserved) instances for their truth, i.e., that do not rely on induction.
- Caveat: no plausible account for weak and descriptive generalizations like *Jill walks to school,* which best support the inductive model.

> "the fundamental difficulty for the rules and regulations approach remains how to deal with weak and descriptive generalizations (…) in constructing an alternative semantics for generics based on the rules and regulations model, one of the primary tasks must be to deal with those very examples which lend the most prima facie plausibility to the inductive model" (Carlson 1995, p.237).

Summary: The semantics of GEN

- The semantic analysis of characterizing generic sentences should explain two key aspects of their meaning:

  (i) their **intensionality**, i.e., their 'nomic force' of expressing regularities that are backed by some sort of law or a causal structure within the world, which sets them apart from quantified extensional sentences, and

  (ii) their **exception-tolerance**, and generally how exceptions arise and how they affect the truth of characterizing generic sentences.

- Understanding the base for the generalization of a given generic sentence (emphasized by Carlson) bears on both these aspects:
  - the relationship between a generic statement and explicit quantificational statements
  - how many exceptions a given generic statement allows (and still remains true)

The subdomains of characterizing genericity

BASE FOR THE GENERALIZATION
some causal structure/forces within the world,
laws of nature, rules and regulations

- Generalizations with no actualized instances, unrealized dispositions:
  Mail from Antarctica goes into this box.
- Generalizations concerning realized individual-level properties, but which are not relatable to particular episodic conditions in the actual world: ***Bob is a bachelor.***

- Generalizations that may also be supported by
  -- NO EXCEPTIONS admissible
  e.g., universal laws: ***The Sun rises in the East.***
  -- EXCEPTIONS admissible
  'Most Ks are F', 'The normal/salient K is F'
  e.g., ceteris paribus laws***: Ravens are black.***

BASE FOR THE GENERALIZATION

episodic conditions

in the actual world

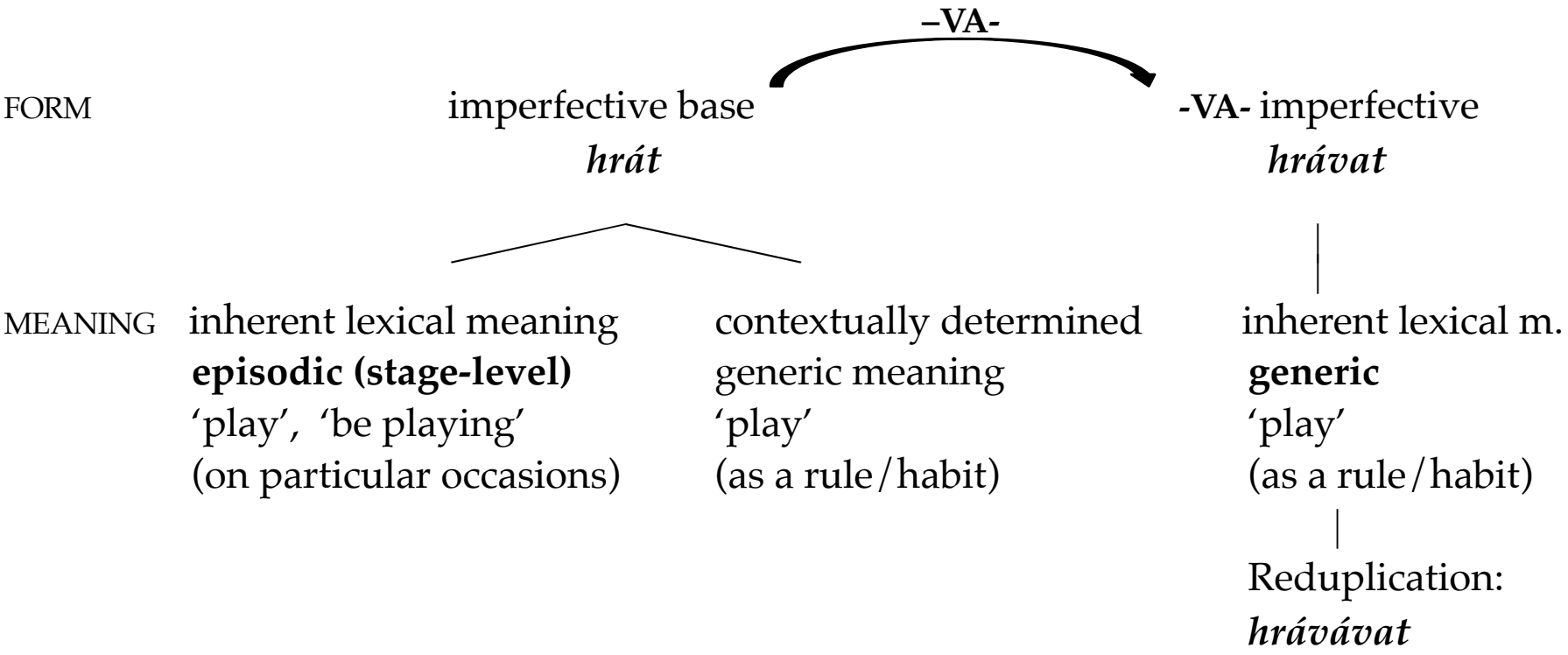
Descriptive generalizations
EXCEPTIONS admissible
e.g., ***Tim has a beer after work.***

Plan for today

- Part I Characterizing generic sentences
  - Key properties
  - Approaches to their meaning

- Part II The Czech suffix *–va-*

Basic morphological and semantic properties



Basic morphological and semantic properties

Derivation base: imperfective simplex

psát IPFV **(imperfective simplex)** → psávat IPFV
write.INF write.**GEN**.INF
(i) episodic: prog ('to be writing') or non-prog ('to write') (i) ✗ episodic
(ii) generic: 'to write as a habit, often, rarely ...' (ii) generic

↓

přepsat PERF
ITER.write.INF
(i) episodic: 'to rewrite', 'to copy' (culminated events)
(ii) generic: 'to rewrite as a habit, often, rarely ...'

↓

přepisovat IPFV **(secondary imperfective)** → přepisovávat IPFV
ITER.write.IPF.INF ITER.write.IPF.**GEN**.INF
(i) episodic: prog ('to be writing again','to be copying') (i) ✗ episodic
or non-prog ('to write again', 'to copy')
(ii) generic: 'to write again as a habit, often, rarely ...' (ii) generic

Basic morphological and semantic properties

Derivation base: perfective simplex

dát PERF **(perfective simplex)**
give.INF
(i) episodic: 'to give'
(ii) habitual: 'to give as a habit'

↓

dávat IPFV → dávávat IPFV
give.IPF.INF → give.IPF.**GEN**.INF
(i) episodic: prog ('to be giving') or non-prog ('to give') → (i) ✗ episodic
(ii) generic: 'to give as a habit, often, rarely ...' → (ii) generic

Basic morphological and semantic properties

- Inherently episodic imperfective base Vs are used in episodic sentences like

(1) Pavel hrál šachy s dědou včera ve tři hodiny. episodic
Paul played chess with grandpa yesterday at 3 o'clock
'Paul was playing chess with grandpa yesterday at 3 o'clock.'

that denote the type of particular episodic situation which counts as direct evidence for the truth of generic sentences that contain their morphologically related generic counterparts:

(2) Pavel hráva**l** šachy s dědou. generic
Paul played.GEN chess with grandpa
'Paul used to play / played on and off / tended to play chess with grandpa.'

- This is expected on the view of **form-meaning relations that characterize the episodic/generic distinction** in natural languages (see e.g., Carlson 1995):
  - In a number of languages, episodic forms are basic and unambiguously generic forms derived from them (Carlson 1995, p.228).
  - Such facts about natural language forms are consistent with the view that episodic truth conditions are basic and generic truth conditions derived from them (Lawler 1973, Carlson 1995), in compliance with the inductive model (Carlson 1995).

Basic morphological and semantic properties

- **Generic verbs that are formally marked with the suffix *–va-* are aspectually stative:**

  —They lack reference to a specific situation, which is the hallmark property of generic predicates, and stative predicates in general (Krifka et al 1995, p.58, i.a.).

  — Grammatical test: incompatibility with episodic adverbials indicating specific locations and points in time like 'yesterday at 3pm' or 'right then':

(1) Pavel hrávalIPF šachy s dědou ? včera ve tři hodiny.
Paul played.GEN chess with grandpa ? yesterday at 3 o'clock
? 'Paul used to play chess with grandpa yesterday at 3 o'clock.'

- In contrast, episodic base forms, which are all imperfective and some may be marked with the imperfective suffix (3), have a straightforward episodic interpretation which refers to specific situations:

(2) Pavel hrál IPF šachy s dědou včera ve tři hodiny.
Paul played chess with grandpa yesterday at 3 o'clock
'Paul was playing chess with grandpa yesterday at 3 o'clock.'

(3) Zrovna jsem mu odepisovalaIPF, když mi vypadl internet.
right.then AUX him.DAT back.wrote.IPF when me.DAT fell.out internet
'I was responding to him, when my internet connection dropped.'

Basic morphological and semantic properties

- Given that the generic suffix *–va-* derives verbs that are aspectually stative (just like all other generic predicates are), it follows that they will be **incompatible with iterative adverbials** like 'three times', which count particular episodes that are not a part of a larger pattern.

(1) Pavel hrávalIPF ? třikrát šachy s dědou.
Paul played.GEN ? 3.times chess with grandpa.
? 'Paul used to play / tended to play three times chess with grandpa.'

- Consequently, verbs with this suffix are **not iterative or a multiplicative verbs.** Such labels are misnomers at best, even if they are standardly used in Czech studies (Kopečný 1948; Petr et al 1986; *Encyclopedic Dictionary of Czech* 2002, p.188-9) and also typological studies (Dahl 1995, i.a.). Such.
- In contrast, corresponding episodic base forms, which are all imperfective and some may be marked with the imperfective suffix (3), are compatible with iterative adverbials counting particular episodes:

(2) Pavel hrálIPF třikrát šachy s dědou.
Paul played 3.times chess with grandpa.
'Paul played three times chess with grandpa.'

(3) Sice jsem již třikrát odepisovalaIPF, ale nikdy se mi nedostalo odpovědi.
while AUX already 3.times back.wrote.IPF but never REFL me.DAT NEG.got answer
'Granted I already wrote back three times, but an answer never came.

Basic morphological and semantic properties

- The direct combination of the generic suffix *–va-* with stative verbs, i.e., individual-level verbs, or 'inherently generic' (Chierchia 1995) verbs, is either ungrammatical or such verbs require an episodic reinterpretation (coercion or type-shifting):

(1) a. myslit (si) 'to think' → **myslívat (si)** 'to tend to think (on and off)'
b. patřit 'to belong (to)' → **patřívat** 'to tend to belong (to) (on and off)'
c. věřit 'to believe' → **věřívat** 'to tend to believe (on and off)'
d. mít 'to have' → **mívat** 'to tend to have (on and off)'

(2) **Mívá** to tam, vídávám to tam (u obchodníka ve výkladu). Kopečný 1948
'He tends to have it there, I keep seeing it there (in the store in the shop window).'

- Reduplication is also possible:

(3) a. myslit (si) → myslí**va**t (si) → myslí**váva**t (si)
'to think' 'to tend to think', 'to think on and off'
b. Také jsem si to kdysi **myslívával**.
'I also used to think just that a long time ago (from time to time).'

Usage and frequency

- In contrast to other Slavic languages, including Russian, in Czech the suffix *-va-* is used productively in all styles of speech (Kučera 1981, p.177, Petr 1986, i.a.).
- However, not all verbs may allow the attachment of *–va-* with the same ease, which is due to lexical idiosyncracies of different lexical classes of verbs.
- Kopečný (1948) (among other Czech linguists) observes that generic *-va*-verbs 'have a relatively low frequency of occurrence' ("poměrně řídká frekvence pravých iterativ").

  Yet, attested examples are not difficult to find.

Usage and frequency

(1) **Present tense**

a. Mám na vás malou otázku. Velmi stručně - roky **jídávám** jen čerstvé máslo, ale v jedné relaci v televizi jsem se dozvěděla, že je to pro tělo „jed".
https://www.magazinzdravi.cz/maslo-nebo-margarin (accessed October 13, 2019)

b. Papoušek teď **sedává** na značce u křižovatky, kde cyklista vydechl naposledy.
https://sport.tn.nova.cz/clanek/verny-kamarad-papousek-sedava-na-miste-kde-scarponi-zemrel.html

(2) **Future tense**

A na relé se podařilo sehnat jednoho starého pána (70let), který takové věci ještě umí. díky za něho, ale kdo to **bude dělávat** v budoucnu to ví bůh ...
https://skoda-virt.cz/cz/auta/starsi/9004-orf-lidunka/?gotopost=3597533

(3) Past tense

https://www.facebook.com/praha4/photos/a.486203542593/10156344828517594/?type=1&theater

Usage and frequency

(4) **Negation**

a. Ježíš – **neříkávám** Kristus – je mně vzorem a učitelem zbožnosti; …
https://cs.wikisource.org/wiki/Hovory_s_T._G._Masarykem/Náboženství_Ježíšovo

b. Ostatně pohádkový německý drak se spíše plazí jako had, český pohádkový drak **mívá** křídla, ale **nelétává**, čínský drak létá (a nemusí být zlý!).
http://www.antroposof.sk/diela_pc/prokofjev_soucasna_mysteria_michaelova_pc.pdf

(5) **Collocations**

ČT si opravdu **dávává** záležet na programu. Pokud běží něco zajímavého, tak na 2 a pozdě v noci.
https://www.idnes.cz/kultura/film-televize/televizionar-mordparta-monstrum.A170526_141451_filmvideo_spm/diskuse

- The status of the suffix *–va-* in the grammar
  Main point: To establish that it is a generic marker sui generis

Common of view of genericity in characterizing sentences

- Genericity in characterizing generic sentences (also referred to as 'habituality') is often classified as belonging to one of the categories of the tense-mood-aspect category system, most often as belonging to tense or aspect (below some exemplary citations of Dahl, Comrie):

(i)	mood	
(ii)	tense:	Dahl (1975, 1985) 'generic tense', 'gnomic tense'
(iii)	aspect:	Comrie (1976, p.26ff.; 1985, p.40)
(iv)	tense-aspect:	Dahl (1995)

The status of the suffix *–va-* in the grammar

- Dahl (1995) on the Czech generic suffix *–va- :*
  - A paradigm example of markers that occur only in generic contexts, and never in episodic ('progressive') contexts
  - Such markers are not *generic* markers per se, but rather
    (i) "tense-aspect" markers, which are
    (ii) best viewed as 'habituals' [1] , and
    (iii) serve "as a kind of quantifier over situations with, roughly, the semantics of 'most'" (ibid., p.421), and
- These claims, however, do not hold for the Czech suffix *–va-*, which sheds at least some doubts on the extent to which they hold of comparable markers in other languages that Dahl (1995) cites.

[1] Dahl (1995) does not explain what he means by the term 'habitual', but he seems to suggest that 'habituals' do not occur in what he views to be prototypical characterizing generic sentences like *Cats meow*.

The status of the suffix *–va-* in the grammar

- The suffix *–va-*, which in all of its occurrences enforces a generic interpretation of a sentence, is **not a marker of tense or aspect** (*pace* Dahl 1995).
- Filip & Carlson (1997), Filip (t.a.) show that it has a number of formal properties which precludes its being subsumed under markers of tense or imperfective aspect. They conclude that it is best viewed as a generic marker sui generis.

The status of the suffix *–va-* in the grammar

The suffix *–va-* is **not restricted to marking only habitual sentences** (*pace* Dahl 1995), though it in all of its occurrences enforces a characterizing interpretation.

- It **can be used for the expression of 'habituality'** in the sense of
  (i) regularities of action by ordinary individuals (e.g., Pelletier and Asher 1997), a in *Tim has a beer after work*, or in a broader sense of
  (ii) generalizations over situations (Krifka et al 1995).

- but it can also be used **in generic sentences that are not habitual:**
  — characterizing generic sentences with kind denoting terms

(2) a. Havrani **bývají** IPFV černí.
'Ravens tend to be black.' / 'Most Ravens are black.'

b. Člověk se k stáru **měnívá** IPFV
man REFL towards old.age change.**GEN**
'A man tends to change as he grows older.' Karel Čapek, *Ordinary Life*, 1934

— in kind reference sentences, i.e., sentences with kind predicates like *rozšířený* 'widespread' that select for kind denoting terms

(3) Bedla jedlá bývá IPFV rozšířená u lidských sídlišť.
macrolepiota procera is.**GEN** widespread at human dwellings
'The parasol mushroom tends to be widespread close to human dwellings.'

The status of the suffix *–va-* in the grammar

- The suffix *–va-* is **not a kind of quantifier over situations only** (*pace* Dahl 1995)

- The Czech suffix *–va-* patterns with overt Q-adverbs, such as *usually, seldom, often,* with respect to its variable-binding properties

- It can bind

  — situation variables,
  — variables provided by singular indefinites and bare plurals,
  — variables provided by kind-denoting definites,
  — more than one variable.

- see Chierchia (1995, p. 188-192) for binding properties of Q-Adverbs
- see Filip (1993, 1994, 2009) for binding properties of the suffix *–va-*

The status of the suffix *–va-* in the grammar

- The meaning of the suffix *–va-* is **not reducible to the meaning akin to 'most'** (*pace* Dahl 1995). 4 arguments:
- Argument 1: *–va-* can be used in generic sentences that are true even if most instances do not satisfy the generically-predicated property

(1) Za Stalina ruští generálové **umírávali** **IPFV** v mladém věku.
during Stalin Russian generals **died.GEN** in young age
'In Stalin's times, Russian generals tended to die young.'[1] Kučera 1981, 1999

— TRUE even if **most** generals in Stalin's times did not as a matter of fact satisfy the predicate of dying young.

— What tracks the truth of this sentence is that it predicates what we view as an unexpected, appalling or striking property of the kind denoting subject.

(Similarly to what tracks the truth of generic sentences like *Mosquitoes carry the West Nile Virus*, see Krifka et al 1995, Leslie 2008).

[1] The example is taken from Kučera (1981, 1999) who translates it as 'Most generals died young in Stalin's times.' However, this does not seem to be correct, given that factually it is false, and the sentence can be used in a situation in which less than half of the Russian generals died young in Stalin's times.

The status of the suffix *–va-* in the grammar

- The meaning of the suffix *–va-* is **not reducible to the meaning akin to 'most'** (*pace* Dahl 1995) (cont.)
- Argument 2: The addition of *obyčejně* 'usually' or *většina* 'the majority' does not preserve the truth value of the original sentence, and yields a factually false sentence:

(2) a. Za Stalina ruští generálové **umírávali** IPFV v mladém věku. **TRUE**
during Stalin Russian generals **died.GEN** in young age
'In Stalin's times, Russian generals tended to die young.'[1] Kučera 1981, 1999

b. Za Stalina **většina** ruských generálů **umírávalo** IPFV v mladém věku. **FALSE**
during Stalin **majority** Russian generals **died.GEN** in young age
'In Stalin's times, Russian generals tended to die young.'

[1] The example is taken from Kučera (1981, 1999) who translates it as 'Most generals died young in Stalin's times.' However, this does not seem to be correct, given that factually it is false, and the sentence can be used in a situation in which less than half of the Russian generals died young in Stalin's times.

The status of the suffix *–va-* in the grammar

- The meaning of the suffix *–va-* is **not reducible to the meaning akin to 'most'** (*pace* Dahl 1995) (cont.)
- Argument 3: If *–va-* were "a kind of quantifier over situations with, roughly, the semantics of 'most'" (Dahl 1995, p.421), then we would expect that it should only occur with adverbials like *obvykle* 'usually', *často* 'often', *téměř vždy* 'almost always', and the like.

  — Counterargument: Danaher's (2003) corpus study shows that the suffix *–va-*

  - occurs with the adverb of quantification *obvykle* 'usually' much less often than with other adverbs of quantification.
  - In fact, it is more often used with adverbs like *občas* 'from time to time', *někdy* 'sometimes', *málokdy* 'rarely', *tu a tam* 'here and there', *vzácně* 'rarely'.

The status of the suffix *–va-* in the grammar

- The meaning of the suffix *–va-* is **not reducible to the meaning akin to 'most'** (*pace* Dahl 1995) (cont.)
- Argument 4: *–va-* freely occurs with any adverbial of quantification (apart from universal ones), which clearly indicates that it on its own does not contribute any requirement on the prevalence of the generically predicated property:

(1) Po večeři Tomáš [ADVERB] **kouřívalIMPFV** doutník.
after dinner Thomas [ADVERB] smoke.GEN cigar
'After dinner Thomas [ADVERB] smoked a cigar.'

The [ADVERB] slot can be filled by e.g., *občas* 'from time to time', *často* 'often', *někdy* 'sometimes', *málokdy* 'rarely', *obvykle* 'usually', *pravidelně* 'regularly', *téměř vždy* 'almost always', *tolikrát* 'so many times', *tu a tam* 'here and there', *většinou* 'for the most part', *vzácně* 'rarely', *zpravidla* 'as a rule', … (see corpus studies of Široková 1963:62, 81 and 1965; Danaher 2003).

- Conclusion: The meaning of the suffix *–va-* is not reducible to any single explicit extensional quantifier or quantity expression, a feature it shares with the generic operator GEN.

The status of the suffix *–va-* in the grammar

Summary

- The suffix *–va-* has none of the properties that Dahl (1995) attributes to it to argue that it is ***not*** a generic marker.

Proposal

- The suffix *–va-* in Czech which enforces only a generic interpretation of a sentence in all its occurrences is best viewed as a generic marker sui generis (see also Filip & Carlson 1997, Filip, t.a., and elsewhere).
- If so, then this provides a further argument in support of the view that genericity is an independent category in natural languages, and that dedicated markers of the episodic/generic distinction are not as uncommon as is usually assumed.
- In the spirit of Kopečný (1948): "Není tedy zcela správné tvrzení Koschmiedrovo v jeho *Nauce o aspektech* (33), že indoevropské jazyky nemají [153] gramatickou kategorii atemporálnosti (mimočasovosti, „pozaczasowości“)."

The relation between GEN and the generic marker *-va-*

Proposal: The suffix *-va-* is a generic marker sui generis (Filip & Carlson 1997, Filip t.a.)

Question: What is the relation between the generic suffix *-va-* and the null generic GEN operator?

One specific proposal that bears on this question.

- Chierchia (1995):
  - All languages have a habitual marker **Hab.** In English, it is covert (the simple present has a predominant habitual interpretation, e.g., *Fred smokes*). In other languages, it is realized by explicit aspectual morphemes.
  - **Hab** is an aspectual morpheme, a functional head in an aspectual projection. Its semantically relevant characteristic is that of carrying an agreement feature [+Q] requiring the presence of a suitable Q-Adverb in its Spec: namely, either the null **GEN** operator or some other Q-Adverb (p.197-8).
- Following Chierchia, *-va-* would be treated as a functional aspect head licensed by the null generic GEN operator.
- Problem: *-va-* marks only a part of the whole semantic domain of characterizing genericity that GEN is intended to account for.

Subdomains of characterizing genericity marked by –VA-

BASE FOR THE GENERALIZATION
some causal structure/forces within the world,
laws of nature, rules and regulations

- Generalizations with no actualized instances, unrealized, hypothetical dispositions:
  Mail from Antarctica goes into this box.
- Generalizations concerning realized individual-level properties, but which are not relatable to particular episodic conditions in the actual world: ***Bob is a bachelor.***

- Generalizations that may also be supported by
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  e.g., universal laws: ***The Sun rises in the East.***

-- EXCEPTIONS admissible
'Most Ks are F', 'The normal/salient K is F'
e.g., ceteris paribus laws: ***Ravens are black.***

categorical absence of exceptions

BASE FOR THE GENERALIZATION

episodic conditions in the actual world

Descriptive generalizations
EXCEPTIONS admissible
e.g., ***Tim has a beer after work.***

Proposal

- The suffix *–va-* (which enforces only a characterizing generic interpretation of a sentence in all its occurrences) is a generic marker sui generis.
- *-va-* marks only a part of the whole semantic domain of characterizing genericity, which the generic operator GEN is intended to cover:

  It selects for generalizations that

  - are based on episodic conditions in the actual world ('actuality entailment'), and,
  - the speaker believes[1] to be **incompatible with a categorical absence of exceptions** or non-confirming cases.

    Specifically, it adds a modal epistemic layer to the meaning of characterizing generic sentences that tracks two main epistemic attitudes of the speaker ***S*** to exceptions that ***S*** thinks cannot be safely ignored:

    — ***S* does not know for sure whether there are or are not exceptions** to the generically predicated property *p* and uses *–va-* to avoid the possible implication of commitment to no exceptions, and hence to a stronger claim which would be false or misleading (ignorance inference).

    — ***S* knows that there are exceptions** to the generically predicated property *p*, and uses *–va-* to assert that the generalization does not hold for all the instances in its episodic base.

[1] 'epistemic' is here used in the sense of (modal) logics of knowledge and belief, see Hintikka (1962) who was the first to propose a modal logic approach to knowledge and belief. Logics of belief (also taken as a weaker form of knowledge) are referred to as 'doxastic logics'.

The relation between GEN and the generic marker *-va-*

Unlike GEN, *-va-* has an 'actuality entailment'

- Characterizing generic sentences with an imperfective verb formally unmarked for genericity have either a habitual or a dispositional interpretation:

(1) Tento stroj drtí **IPFV** pomeranče. **GEN**
this machine crushes oranges
'This machine crushes oranges
(i) . . . √ and we have used it often since we bought it a year ago.' **habitual**
(ii) . . . √ but it hasn't been used yet, it is still in its shipping box.' **dispositional**

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- The presence of the generic *–va-* on an imperfective verb eliminates the possibility of a purely dispositional interpretation:

(2) Tento stroj drtívá IPFV pomeranče. ***-va-***
this machine crushes.GEN oranges
'This machine crushes oranges
(i) . . . √ and we have used it often since we bought it a year ago.' **habitual**
(ii) . . . ✗ but it hasn't been used yet, it is still in its shipping box.' ✗ **dispositional**

- The generic *–va-* has an 'actuality entailment' (in non-conditional clauses): it requires the existence of verifying instances in the actual world.
- The same holds for the 'habitual' *be* in AAVE (Green 2000, Collins 2006) and perhaps other languages with similar markers.

The relation between GEN and the generic marker *-va-*

Unlike GEN, *-va-* has an 'actuality entailment

- **The generic *–va-* patterns with overt Q-adverbs like *usually, rarely* in so far as they also eliminate the possibility of a sentence having a purely dispositional interpretation** (see also Krifka et al 1995, p.9-10), and raise the issues of exceptions to the expressed generalization:

(3) a. This machine crushes oranges
. . . √ but we haven't used it yet.' √ dispositional

b. This machine usually crushes oranges
. . . ✗ but we haven't used it yet.' ✗ dispositional

	habitual interpretation actualized instances	dispositional interpretation
null GEN operator	√	√
-va-	√	✗
overt Q-Adverb (e.g., *usually, rarely*)	√	✗

The relation between GEN and the generic marker *-va-*

Unlike GEN, *-va-* incompatible with a categorical absence of exceptions

- Observations:
  - *-va-* occurs in generalizations based on episodic conditions in the actual world ('actuality entailment').
  - consistent with the inductive model of generic sentences, as outlined by Carlson (1980, 1982, 1995)
- Question: Does *-va-* function as a marker of INDUCTIVE generalizations?

The relation between GEN and the generic marker *-va-*

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  - consistent with the inductive model of generic sentences, as outlined by Carlson (1980, 1982, 1995)
- Question: Does *-va-* function as a marker of INDUCTIVE generalizations?
- No: *–va-* is unacceptable in generic sentences that express some of the best examples of inductive reasoning, but sanction no exceptions:

(1) Generic characterizing sentence: *The Sun rises in the East.*
Premise: Every day so far, the Sun has risen in the East.
Conclusion: The Sun rises will probably continue to rise in the East.

(2) a. Slunce vychází na východě.
Sun rises on East
'The Sun rises in the East.'

b. Slunce ? vycházívá na východě.
Sun ? rises.**GEN** on East
'The Sun ? tends to rise in the East.'

- *-va-* targets a subdomain of inductive generalizations which are thought to commonly have exceptions.

The relation between GEN and the generic marker *-va-*

Unlike GEN, *-va-* incompatible with a categorical absence of exceptions

- *–va-* is incompatible with the paradigm cases of Carlson's (1995) rules and regulations model of genericity. Some examples:
  - constitutive rules (rules of chess like *A/the bishop never changes color*)
  - classification into natural kinds (*be a mammal*)
  - regulative rules (like traffic rules, legal statutes, etc.)

(1) Střelec nikdy nemění / ? neměnívá barvu pole. rule of chess
bishop never changes / ?changes.GEN color of.field
'A bishop never changes color.'

(2) Valčík je / ? bývá ve tříčtvrtečním taktu. constitutive rule
waltz is / ? is.GEN in three.quarter time
'A waltz is / ?is usually in three quarter time.'

(3) Velryba je / ? bývá savec. natural kinds property
whale is / ? is.GEN mammal
'A whale is / ?tends to be a mammal.'

(5) V Anglii se jezdí / ? jezdívá po levé straně. regulative rule
in England REFL drives / ? drive.GEN on left side
'In England, one drives on the left.'

The relation between GEN and the generic marker *-va-*

Unlike GEN, *-va-* is incompatible with a categorical absence of exceptions

- The input of the generic suffix *-va-* is not defined for individual-level stative predicates: e.g. *be intelligent, be a bachelor, know Latin.*

(1) Karel je / ? bývá svobodný muž / inteligentní.
Charles is / ? is.GEN free man / intelligent
'Charles is a bachelor / intelligent.'

(2) Kdo zná / ? znává latinu, zná již vlastně jazyky románské.
who knows / ? knows.GEN Latin knows already in.fact languages romance
'He who knows Latin already in fact knows Romance languages.'

- 2 reasons: Individual-level stative predicates
  - hold of individuals over long stretches of time, and possibly also for their whole life-time, and **at any arbitrary moment and subinterval of such intervals**. They are 'tendentially stable' (Chierchia 1995), and so tend not to be construed as holding on and off with some regularity, with temporal 'gaps'.
  - lack corresponding episodic counterparts that would specify the type of situation that could count as direct evidence for their truth. There are **(i)** either many different situations that can support their truth (*be intelligent, know Latin)* or **(ii)** it is not entirely clear what kind of array of situations in the real world must obtain to support their truth (*be a bachelor*).

-va- : exceptions that cannot be ignored

Unlike GEN, *-va-* is incompatible with a categorical absence of exceptions

Context: 'What is his profession?'

- felicitous answer

(1) Učí IPFV na střední škole.
teaches on middle school
'He teaches at high school.'

Strong implication:
He is a high-school teacher.
'rules and regulation' generalization

- odd or misleading answer

(2) **Učívá IPFV** na střední škole.
teaches.GEN on middle school
'He teaches at high school on and off.'

Implication:
'Some/many/a few situations in which he works are teaching at HS situation

When using (2), the speaker conveys that the generically-predicated property of teaching does not 'spread' to all the relevant situations, it is not 'tendentially stable' (Chierchia 1995) holding without 'breaks' or exceptions over a long interval.

The relation between GEN and the generic marker *-va-*

Unlike GEN, *–va-* is incompatible with a categorical absence of exceptions

- Supporting argument: The direct combination of the generic suffix *–va-* with overt universal quantifiers like *každý* 'each/every', *vždy(cky)* 'always' and *nikdy* 'never' is either
  - (i) highly odd (uninterpretable) or
  - (ii) requires that such universal quantifiers lose their customary universal quantificational force (Danaher 2003, p.45), and instead seem to suggest intensification of the strength of the regularity (ibid.) (universal Qs under a 'sloppy' reading)

The relation between GEN and the generic marker *-va-*

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  (i) highly odd (uninterpretable)

(1) Každou sobotu Honza sedí /?sedává v hospodě. quant over situations
each Saturday John sits / ?sits.**GEN** in pub
(?) 'Every Saturday John usually sits in a pub.'

(2) Každý Čech je / ? bývá muzikant. quant over individuals
every Czech is / ? is.**GEN** musician
'Every Czech is / ?tends to be a musician.'

- not intended interpretation: quantification over appropriate episodic situations such that in such situations each Czech person acts as a musician

- Motivation (Filip 1994, 2009): *–va-* cannot co-occur with an overt universal quantifier, because that quantifier will bind the situation or individual variable in its scope leaving no variable for *–va-* to bind (vacuous quantification).

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  (ii) requires that such universal quantifiers lose their customary universal quantificational force (Danaher 2003, p.45), and instead seem to suggest intensification of the strength of the regularity (ibid.) (universal Qs under a 'sloppy' reading)

(1) Mládež ve Vídni se zabývala Hebblem — já jsem **vždycky býval (GEN)** skeptický k takovým módním proudům. Čapek 1990, p.57
'Viennese youth were all reading Hebbel — I was always skeptical about these fashionable influences.' Čapek 1934, p.82

(2) "Je to divný," pokračovala pak rychlým a věcným šepotem, "jeden šuplík má zamčenej, a **nikdy** ho **nemívá** (**GEN**) zamčenej. A nepasuje mi do něj žádnej klíč."
"It's strange," she continued in a quick and matter-of-fact whisper, "one of his desk drawers is locked and he never has it locked. And none of my keys fit the lock."
Bělohradská 1992, p. 88, cited in Danaher 2003

- Similar to the combinations of *usually* with *always* and *never* in English:

(3) a. I am **usually always** happy, but today I feel really depressed.
b. I am **usually never** neurotic about being messy and keeping things tidy, but I can't seem to go to sleep if clothes are hanging up to dry in my room.

The relation between GEN and the generic marker *-va-*

Unlike GEN, *–va-* incompatible with a categorical absence of exceptions

- Supporting argument (cont.):

(1) a. U každého domu je IPFV zahrada.
at each house is garden
'At each house, there is a garden.'

b. U každého domu **bývá** IPFV zahrada.
at each house **is.GEN** garden.SG.NOM
'At each house, there tends to be a garden.'

NOT: 'In most/some/the majority of situations, and for each house in that situation, there is a garden next to it.'

The relation between GEN and the generic marker *-va-*

Summary

- Two main semantic properties distinguish *–va-* from the null generic GEN operator:

  (i) *–va-* has an 'actuality entailment', i.e., it is incompatible with generic statements that describe unrealized properties or dispositions, what is **purely hypothetical.**

  (ii) *–va-* is incompatible with generic statements that **admit of no exceptions.**

Proposal

- The suffix *–va-* (which enforces only a characterizing generic interpretation of a sentence in all its occurrences) is a generic marker sui generis.
- *-va-* marks only a part of the whole semantic domain of characterizing genericity, which the generic operator GEN is intended to cover:

  It selects for generalizations that
  - are based on episodic conditions in the actual world ('actuality entailment'), and,
  - the speaker believes[1] to be **incompatible with a categorical absence of exceptions** or non-confirming cases.

    Specifically, it adds a modal epistemic layer to the meaning of characterizing generic sentences that tracks two main epistemic attitudes of the speaker ***S*** to exceptions that ***S*** thinks cannot be safely ignored:

    — ***S* does not know for sure whether there are or are not exceptions** to the generically predicated property *p* and uses *–va-* to avoid the possible implication of commitment to no exceptions, and hence to a stronger claim which would be false or misleading (ignorance inference).

    — ***S* knows that there are exceptions** to the generically predicated property *p*, and uses *–va-* to assert that the generalization does not hold for all the instances in its episodic base.

[1] 'epistemic' is here used in the sense of (modal) logics of knowledge and belief, see Hintikka (1962) who was the first to propose a modal logic approach to knowledge and belief. Logics of belief (also taken as a weaker form of knowledge) are referred to as 'doxastic logics'.

-va- : exceptions that cannot be ignored

Case 1: *S* knows that there are exceptions to the generically predicated property *p*, i.e., *S* knows that there are **positive counterinstances** to p (in the sense of Leslie 2007)

- The formally unmarked generic sentences (1a) in English and (1b) in Czech are judged false, despite the fact that the majority of books are **paperback**, because the **positive counterinstances** (exceptions) to paperbacks, namely **hardcover books** (Leslie 2007, 2008), cannot be safely ignored.

(1) a. Books are paperback. FALSE

b. Knihy jsou IPFV brožované. FALSE
books are paperback
'Books are paperback.'

- Adding an adverb like *typically* or the suffix *–va-* reverses the truth value, because they imply the existence of exceptions, here the positive counterinstances of hardback books.

(2) a. Typically / normally, books are paperback. TRUE

b. Knihy **bývají** IPFV brožované. TRUE
books **are.GEN** paperback
'Typically / normally, books are paperback.'

-va- : exceptions that cannot be ignored

Case 2: *S* does not know for sure whether there are or are not exceptions to the generically predicated property *p*

- Context: Saturday afternoon. A is looking for Tom. B knows that Tom tends to be at the pub *U Fleků* on Saturday, but on some Saturdays, he goes to another pub or stays home. On this particular Saturday Tom is not in this pub, but B does not know it.

A: Víš, kde je Tom?
'Do you know where Tom is?'

B: No, v sobotu Tom **sedí** IPFV / **sedává** IPFV U Fleků. √ **no exceptions**
well, on Saturday Tom sits / sits.GEN at Fleků ✗ **no exceptions**
'Well, on Saturday Tom **sits** / tends to be in the pub *U Fleků*.'

- Both generic sentences, formally marked and unmarked, are true in this situation.
- However, if B uses the **formally unmarked form**, and A goes to the pub and Tom is not there, B may be blamed to be misleading at least. This is because, the generic with the **formally unmarked form** may be true without any exceptions, and speakers tend to 'perfect' such unmarked generics into the corresponding universally-quantified statements, i.e. 'On all Saturdays, Tom sits in the pub …', precisely because of the availability of the alternative
- formally marked generic form which conveys inferences about exceptions: that they may exist.

-va- : exceptions that cannot be ignored

Case 3: kind reference in characterizing generic sentences

- Dahl (1995, p.415 and p.425; also Dahl 1985, p.100):

  In the vast majority of languages, prototypical generic sentences, namely those that involve kind reference in characterizing sentences, tend to be **minimally marked with respect to tense and/or aspect**, i.e., either devoid of any overt marking or have the least marked form in the tense-aspect category system.

(1) *Dogs **bark**.* (main finite verb form = stem form **bark**)

- This also holds for Czech. In the generic context like 'What kind of sound do dogs make?', which is a question about the whole kind, answers expressed by formally unmarked forms (2) are preferred over the formally marked ones (3).

Context: What kind of sound do dogs make?

(2) Psi **štěkají** IPFV. (preferred)
dogs bark
'Dogs bark.'

(3) Psi **štěkávají** IPFV.
dogs bark.GEN
'Dogs tend to bark.'

- Question: How do we motivate the difference between formally unmarked generic statements (2) and formally marked ones (3)?

-va- : exceptions that cannot be ignored

Case 3: kind reference in characterizing generic sentences

Context: What kind of sound do dogs make?

(2) Psi **štěkají** IPFV. (preferred)
dogs bark
'Dogs bark.'

(3) Psi **štěkávají** IPFV.
dogs bark.GEN
'Dogs tend to bark.'

- Observation:
  - Formally marked generics like (3) on their own are odd to various degrees.
  - To make them fully acceptable, speakers tend to add some extra material like noun modifiers, temporal-spatial modifiers, hedge-operators like 'strictly speaking', focus, contrast, attitude verbs, and frequency adverbs, in short, different syntactic, lexical and discursive means can be used to this goal.

(4) Přesně řečeno, psi **štěkávají** IPFV, tedy ne všichni štěkají.
strictly speaking dogs bark.GEN that.is not all bark
'Strictly speaking, dogs tend to bark, that is, not all bark.'

(5) Psi **štěkávají** IPFV na povel / když mají hlad.
dogs bark.GEN on command / when have hunger
'Dogs tend to bark on command / when they are hungry.'

-va- : exceptions that cannot be ignored

Case 3: kind reference in characterizing generic sentences

- Hypothesis: The extra material that legitimates formally marked generic forms specifies what can be viewed as the 'restricting cases' (Schubert & Pelletier 1987) or 'points of view' (Mari 2008a,b) on the base for the generalization against which the characterizing statement is made.

  The explicit restriction is a direct consequence of the modal epistemic component of *-va-* that triggers the inference of 'exceptions that cannot be ignored.'

Example 1: A generalization about **the kind DOG**

(2) Psi **štěkají** IPFV.
dogs bark
'Dogs bark.'

(4) Přesně řečeno, psi **štěkávají** IPFV, tedy ne všichni štěkají.
strictly speaking dogs bark.GEN that.is not all bark
'Strictly speaking, dogs tend to bark, that is, not all bark.'

- The base for the generalization: individual members of the kind DOG to whom the property of barking is attributed (also by virtue of stages of barking dogs).
- Formally unmarked generic (2): 'unmarked case' - dogs that fail to have the property of barking are viewed as exceptions that we safely ignore, and the speaker attributes the property of barking to the whole kind DOG, as is common.
- Formally marked form (4): Non-barking dogs are viewed as exceptions that cannot be ignored. This 'marked' form is legitimized by 'strictly speaking' which explicitly restricts (the base for) the generalization to just those unexceptional dogs that bark.

-va- : exceptions that cannot be ignored

Case 3: kind reference in characterizing generic sentences

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  The explicit restriction is a direct consequence of the modal epistemic component of *-va-* that triggers the inference of 'exceptions that cannot be ignored.'

Example 2: A generalization over **individual dogs**

(5) Psi **štěkávají** IPFV když mají hlad.
dogs bark.GEN when have hunger
'Dogs tend to bark when they are hungry.'

(1) Psi **štěkají** IPFV když mají hlad.
dogs bark when have hunger
'Dogs bark when they are hungry.'

- The base for the generalization: a particular episodic situation in which a stage of a hungry dog is barking.
- Formally marked form (4): the speaker knows that not all dogs will bark in every situation in which they are hungry, or is genuinely ignorant about matters of fact and uses *–va-* as a hedge-operator to preclude the possible implication of no exceptions, which is what
- Formally unmarked generic (2) permits.

Conclusions

- What *-va-* is not:
  - a phonological spell-out of **GEN** (Krifka et al 1995), the null generic operator.
  - the realization of the habitual feature *Hab* licensed by the null Q-Adverb **GEN** (Chierchia 1995)
  - amenable to a semantic analysis based on either the inductive or the rules and regulations (R&R) approach to genericity (Carlson 1995)

Big picture

- The distribution of the Czech suffix *–va-* over different types of characterizing generic sentences seems to confirm the view that the particular linguistic form in which characterizing generic statements are expressed determines meaning differences that are hard to reconcile with a uniform analysis of all characterizing generic sentences (see e.g., Pelletier 2009, Boneh & Doron 2013, i.a).

Big picture

Epistemic turn and ignorance inferences

- The distribution of the Czech suffix *–va-* over different types of generic sentences clearly indicates that there are **differences in our stance regarding the grounds for the truth of generic sentences which motivate the choice of different formal means for their expression.**

- This 'epistemic' turn for the analysis of formally marked generic sentences would bring the semantic analysis of generic sentences in relation to similar relationships between other marked and unmarked forms in cases when they **signal uncertainty/ignorance.** E.g., the semantics (and pragmatics) of determiners and numerals:

unmarked	marked
three	*at least three*
twenty	*twenty-some*
ein/un	*irgendein/algún*
some	*some or all*

In all the above pairs, the marked form comes with epistemic commitments to uncertainty/ignorance that is nevertheless compatible with the unmarked forms.

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Appendix

Binding of variables provided by indefinites

(2) a. Židle **mívají**$^{\mathbf{GEN}}$ čtyři nohy.
'Chairs tend to have four legs.'

b. **VA** [x;] (**chairs** (x) ; **have four legs** (x))
'When a thing has the property of being a chair, it has four legs.'
'For a given thing *x* such that *x* is a chair, *x* has four legs.'

(3) a. Televizní hlasatel na Nově nosívá $^{\mathbf{IPFV}}$kravatu.
television announcer on Nova wears.**GEN** tie
'The TV announcer on the Nova station only rarely wears a tie.'

b. **VA** [x;] (**television_announcer_on_Nova** (x); ∃y[**tie**(y) ∧ **wear** (x,y))

Binding of variables provided by kind-denoting definites

-VA- can be attached to kind-denoting predicates, such as *be widespread*, and quantified over individuals of a kind:

(4) a. Bedla jedlá bývá **IMPERF** rozšířená u lidských sídlišť.
macrolepiota procera is.**GEN** widespread at human dwellings
'The parasol mushroom tends to be widespread close to human dwellings.'
b. **VA** [x;] (**macrolepiota procera** (x); **widespread_at_human_dwellings** (x))

Binding of more than one variable

(5) a. Kočka **honívá**$^{\mathbf{GEN}}$ myš.
'A cat tends to chase a mouse.'

b. **VA**[s,x,y;] (**cat**(x) $\wedge$ **mouse** (y) $\wedge$ C(x,y,s) ; **chase** (x,y,s))