Characterizing Genericity and Epistemic Commitments

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1 Introduction

Genericity is commonly taken to comprise two distinct phenomena (Krifka et al. 1995)

- **KIND REFERENCE**: generalizations about kinds which their individual members cannot have.

(1) a. *Silk* was discovered in China. BARE mass NP
b. *Bronze* was invented as early as 3000 B.C.
c. *Dodos* became extinct in the 17th century /are extinct. BARE plural NP
d. *Alligators* are common in Florida.
e. *The dodo* became extinct in the 17th century / is extinct. DEFINITE SINGULAR count NP
f. *The potato* was first cultivated in South America.
h. Marconi discovered *the radio*.
i. **A dodo* became extinct in the 17th century. *INDEFINITE singular NP
j. Marconi discovered **a radio*.

(2) *Man* landed on the moon in 1969.

- The expression of kind reference is tied to an argument of a verb. It is an NP that directly refers to a kind, called a KIND DENOTING NP (or a GENERIC NP) (marked in italics).

- In support of the category of KIND REFERENCE, it is observed that natural languages have KIND PREDICATES like *extinct*, *invent* or *become* that directly select for KIND DENOTING terms in one of their argument positions.

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- A given language may impose specific requirements on the form of a kind denoting NP. In English, it is realized either as a BARE NP--mass (1a,b) or plural (1c,d)—or a DEFINITE singular NP (3e-h), but not as a singular indefinite NPs (3i,j)[1].

- **GENERIC CHARACTERIZING STATEMENTS**: express generalizations over a set of entities and/or situations:

(3) a. Sugar *dissolves* in water. / Milk *contains* protein.
b. Dogs *bark*./ The dog *barks*. / A dog *barks*.
c. Most dogs *bark*.
d. A/the bishop *moves* diagonally.
e. John *smokes* (cigars) after dinner.

- Characterizing genericity is a property of an entire sentence, a function of the combined meanings of its subject NP and VP, possibly also interacting with pragmatic, prosodic and discourse factors.

- There are no restrictions on what kinds of nominal arguments can occur in characterizing generic sentences. In English, the subject of characterizing generics, for instance, can be a singular indefinite NP, a quantified DPs, a proper name, besides bare mass nouns, plurals, and singular definite NPs (see Krifka et al 1994, p.8; Pelletier 2009).

- In languages with tense and aspect systems, the expression of characterizing genericity is closely tied to the finite verb or verb complex, where it is indirectly manifested in tense and aspect marking (Dahl 1985, 1995; Krifka et al 1995). A given language may have specific preferences for the tense and/or aspect marking in a generic sentence. For instance, in English, the preferred tense for characterizing generics is *the simple present tense*, which is, therefore, also dubbed 'gnomic tense' or 'gnomic aspect'.

- The main contrast is with episodic sentences, which in English are often expressed in the *progressive aspect*:

(4) a. Fred's dog *is barking.* EPISODIC SENTENCES
b. Rescue workers *are preparing* the victim for transport.

1 Singular indefinites are not used for kind reference, unless they are intended to have a taxonomic reading. For instance, (*)*A potato was introduced into Ireland by the end of the 17th century* is odd, unless it can be construed as having a taxonomic reading referring to a subspecies of potatoes.

- **Independence of KIND REFERENCE and GENERIC CHARACTERIZING STATEMENTS**

	GENERIC CHARACTERIZING sentence	EPISODIC sentence
KIND REFERENCE	*Dogs* bark/*The potato* contains vitamin C.	Marconi discovered *the radio*.
INDIVIDUAL REFERENCE	*John* smokes.	*John* smoked last night.

- Kind reference and characterizing genericity occur independently of each other: not all the characterizing generic sentences have an NP with a generic kind reference (e.g., *John smokes*), and vice versa, generic kind reference may arise in sentences that are episodic (i.e., make reference to specific situations), as in *Marconi discovered the radio*.

- They may also co-occur in a single sentence, i.e., 'mixed cases' of 'kind reference in a characterizing statement' (Krifka 2001, 2009): *Dogs bark, The potato contains vitamin C.*

- **Topic of this talk: GENERIC CHARACTERIZING STATEMENTS**

  Question: Can we provide a unified semantics for all generic characterizing statements?

  Null hypothesis: Characterizing generics constitute a single class of sentence types for which a unified semantic analysis is possible (and desirable).

- **Goal**

  Explore the viability of a unified semantics for all characterizing generic sentences (null hypothesis).

- **Data**

  - Formally marked characterizing generics, which would seem to provide some of the best evidence for exploring the semantics of characterizing genericity.

  - A number of languages have bona fide generic markers (see e.g., Filip, t.a.), and they remain so far understudied in the generics studies. They include:

    Languages with such markers include: Arabic (Classical), Akan, Catalan, Czech, Didinga, German, Guarani, Hungarian, Kammu, Limouzi, Montagnais, Sotho, Spanish, Swedish, Swedish Sign Language, Yucatec Maya, Zulu (Dahl 1985, 1995); also Awa (New Guinea), Haida (North American Native language), Lithuanian, Swahili (Bantu), West Greenlandic (Eskimo-Aleut).

- They have bound morphemes on verbs or free morphemes within 'verb complexes', the typical locus for the expression of characterizing genericity, which enforce a characterizing generic interpretation of sentences in all their occurrences, i.e., they are a sufficient, but not a necessary, condition for the expression of characterizing genericity (Dahl 1985, 1995).

- The main focus is here on the Czech (West Slavic) verbal suffix *–VA-*, which, according to Dahl (1995), is a canonical example of this class of markers. Note: *–VA-* stands for the various allomorphic variants of the morpheme in question.

- **Conclusion**

  - The distribution of the Czech generic suffix *-VA-* (i.e., when it may, must and must not be used) provides robust evidence that there are different semantic types of generic characterizing sentences, each distinguished by a different formal properties, and each requiring a different semantic model for its interpretation.

  - Specifically, the distribution of the Czech generic suffix *-VA-* is consistent with the view that there are at least two main different models for characterizing generics: namely, inductive and rules-and-regulations in Carlson's (1995) terms, with *-VA-* encoding the sort of weak (inductive) generalizations that best fit the inductive model of genericity.

  - The semantics of the Czech generic suffix *-VA-*, besides a quantificational component (Filip 1993, 2009a-c, and elsewhere), includes a modal (epistemic) dimension, which regards the cognitive agent's stance towards the grounds for the truth of generic sentences, and specifically her stance on exceptions they commonly have.

  - While formally marked characterizing generics, such as those marked by the Czech suffix *-VA-*, would appear to provide some of the best data for exploring a unified semantics for characterizing genericity, they in fact turn out to pose some of the toughest problems speaking against it, precisely because they provide some of the best support for the inductive model of genericity, and seem intractable by any rules-and-regulations approaches to genericity (see also Carlson 1995).

2 CHARACTERIZING GENERIC SENTENCES: LINGUISTIC AND EPISTEMOLOGICAL BACKGROUND

- There is no general agreement on the criteria that single out all and only generic statements (e.g. Dahl 1985, 1995; Nickel 2008, 2016; Pelletier 2009; Carlson 2013), but all agree that prototypical examples include:

(6) a. *Dogs* bark.
b. *Milk* contains protein.

- Such examples involve 'mixed cases' of 'kind reference in a characterizing statement' (Krifka 2001, 2009), and express a 'double generalization' (Carlson 2008, see also Pelletier and Asher 1997). The expressed regularity holds across individual instances of a kind, and also for the kind itself. In *Dogs bark*, for instance, the generically-predicated property 'barks' is understood as being true (i) of any possible dog, i.e., of the kind DOG, with its base constituted by instances of individual dogs to which the property of barking is attributed, and at the same time, (ii) of individual dogs, with the base being particular situations of barking by a stage of an individual dog.

- Characterizing generic sentences, such as

(7) a. *Fred's dog* barks.
b. *John* smokes.

are often singled out as a special case, and possibly also a less typical case of characterizing genericity (e.g., Carlson 2013), given that they lack a kind-referring subject, and express a regularity of action by a specific individual of an ordinary sort on different occasions. They are often labeled 'habitual', for lack of a better term (see Krifka et al 1995, Carlson 2013, Asher and Pelletier 1997).

2.1 Two hallmark properties of characterizing generics: Exceptions and intensionality

- **EXCEPTIONS**: Different types of characterizing generic sentences sanction a different number of exceptions to what is taken to be characteristic, based on some observed (or unobserved) pattern, and they may be true even if the number of exceptions renders what is taken to be characteristic not prevalent among their relevant verifying instances.

(8) a. Dogs bark. TRUE even if there are some breeds of not barking dogs
b. John smokes after dinner. TRUE even if John does not smoke after each dinner
c. Mosquitoes carry malaria. TRUE even if only about 1% of mosquitoes carry malaria
d. Lions have manes. TRUE only for adult male lions

- Some characterizing generic sentences (*Mosquitoes carry malaria*) are judged true despite the majority of relevant instances failing to have the generically-predicated property, while others are false despite the majority of instances having the generically-predicated property:

(9) Books are paperbacks. FALSE even if most books are paperbacks

- There are also characterizing generics which admit of no exceptions

(10) a. Triangles have three sides. analytic proposition
b. Bishops move diagonally. constitutive rules of chess
c. In England, one drives on the left. regulative rules of traffic

- Conclusion: impossible to analyze all such generics in terms of a single quantifier or quantity expression, such as *always, usually, in the majority of cases*

- **INTENSIONALITY** (Lawler 1973, Dahl 1975): characterizing generics describe not only what actually obtains as a matter of some observed regularity or habit, but also determine what is a matter of some stipulation, rules and regulations, and may be merely possible, hypothetical, a matter of disposition and has never been actually realized:

(11) a. Members of this club help each other in emergencies. regulative rule
TRUE even if no emergencies have yet occurred
b. John is a taxpayer. legal norm
TRUE even if John has evaded paying taxes
c. Mail from Antarctica goes in this box. disposition
TRUE even if no mail has yet arrived, and may never arrive
d. This machine crushes up oranges and removes the seeds. disposition
TRUE even if the machine is new and to be later destroyed accidentally in shipping

- Conclusion: such characterizing generic sentences speak against any reductionist analysis of generics in terms of a single (extensional) quantifier or quantity expression, such as *always, usually, in the majority of cases* and the like, no matter how vague and probabilistic (Krifka et al 1995).

- QUESTIONS:

  What are the truth conditions for characterizing generic sentences? How do they shape our thinking about the nature of truth?
  What is exceptional and what is characteristic in the first place?
  What is the nature of reasoning and knowledge representation that best support our judgments about the truth and falsity of characterizing generic sentences?

2.2 Two main types of semantic models: inductive and rules-and-regulations (Carlson 1995)

- There are many different semantic models for the grounding of the truth conditions of generic sentences. According to Carlson (1995, and also 1980, 1982, 2007), they fall into two broad classes: one that takes
  — induction as its primary model, and the other
  — rules-and-regulations

Inductive approach

- Characterizing generic sentences express inductive generalizations, based on some observed (or even unobserved) set of instances, and hence their truth depends on the way how things are in the actual world[2]. On this view, paradigm examples of generic sentences are sentences like

(12) Dogs bark.

- Intuitively, after having witnessed 'enough' episodic instances of dogs barking, for instance, we reach the conclusion that dogs bark. For the inductive model of genericity, all that matters is that the generalization can be derived via inductive operations from basic observations.

- The semantic relation between generic and episodic sentences: Episodic truth conditions are basic, and generic truth conditions are derived from them.

- Generic sentences require only the extensional entities necessary for assigning truth conditions to basic episodic sentences: namely, individuals, events, times, places. Hence,

2 The inductive model is aligned with empiricism in the domain of epistemology ('all knowledge derives from sense experience'), verificationism ('truth is what is verifiable', Tarski's theory of truth, *Snow is white* iff snow is white), and nominalism (only physical particulars in space and time are real, universals exist only *post res*) (Carlson 1995:225).

the inductive model of genericity is ontologically parsimonious, since the real-world grounding of generic sentences is the same as that of episodic sentences.

Key empirical support: The semantic relation between generic and episodic sentences is mirrored by their formal relation:

- Paradigm cases of generic sentences like *Dogs bark* have main predicates that are morphologically related to their episodic or stage-level counterparts in episodic sentences like *Fido barked last night* or *Fido is barking at the truck right now*.
- In languages with overt generic markers, the generic interpretation is clearly the 'marked' or 'derived' case relative to the episodic one. There does not seem to be a language in which unambiguously generic forms are basic and episodic forms derived from them.

characterizing generic sentence	episodic (stage-level) counterpart
Karel hrává **IMPERF** *na kytaru.*	*Karel hraje* **IMPERF** *(ted') na kytaru.*
Czech	
Charles plays.GEN on guitar	Charles plays (now)on guitar
'Charles plays guitar.'	'Charles is right now playing guitar.'

- **Problems** (see e.g., Lawler 1973, Dahl 1975, and Carlson 1982, i.a.)

(i) All the issues related to the problem of induction. It is unclear how the distinction between purely accidental happenstances vs. non-accidental patterns that motivate generic statements can be derived.

(ii) It cannot in principle provide an account for generalizations for which there are, have been, and will be no corresponding real-world instances: e.g., the dispositional interpretation of

(14) This machine crushes up oranges.

(iii) The problem of verifying instances. Different types of generic characterizing sentences call for different types and number of verifying instances to be relevant, and the inductive approach fails to account for generic sentences which are not (just) verified by some real world episodic conditions, but instead rely on some default reasoning strategies.

(15)

	GENERIC SENTENCE description of regularity	EPISODIC SENTENCE description of the real-world grounding
•	"habitual" generics:	
a.	John smokes.	John smoked yesterday. John is smoking now.
b.	The Sun rises in the East.	The Sun rose in the East today.
•	Lexically stative predicates (ILPs (Carlson 1977), inherent generics (Chierchia 1995)	
c.	John is a smoker.	Sam smoked last night / a pack of cigarettes today.
d.	Sam is a poor liar.	Sam lied poorly at his inquest yesterday.
e.	Sam is intelligent.	Sam did a smart thing yesterday by keeping his mouth shut.
f.	John knows French.	John is reading French right now.
g.	John is a murderer.	based on our cultural knowledge and judicial practices it is enough to have murdered once to count as a murderer
h.	John is an adulterer.	opinions widely differ on the nature and number of supporting instances needed for someone to count as an adulterer
i.	John is a tax payer.	no verifying instances necessary *… but he has never paid his taxes* is ok.
j.	Cats are carnivores.	? My cat ate raw beef I cut for stew.
k.	Bob is a bachelor.	?

- Problems like (i)-(iii) led to the rejection of the inductive approach to the truth conditions of characterizing generic sentences.

Rules-and-regulations approach

- The truth of characterizing generic sentences depends on some causal structure or forces in the world that are behind episodic instances (in addition to the ontology presupposed by the inductive model). We judge them to be true or false with respect to a set of rules (or a finite list of propositions), which are considered to be irreducible entities [3]. Paradigm cases are

(16)

a.	Bishops move diagonally.	game rules
b.	Tab A fits in slot B (on a cereal box cut-out toy).	operating instructions
c.	The Vice-President succeeds the President.	parliamentary rules

3 This approach would most naturally be advocated by those who accept properties and propositions as real entities, and many realists (Carlson 1995, p. 225). There are two strands of research compatible with it: namely, nonmonotonic reasoning and/or logics (see e.g., Reither 1980, 1987, Strigin 1985, Carlson 1987, Asher and Morreau 1995) and counterfactual theories (see e.g., Lewis 1973, Kratzer 1989).

d. Two magnets attract each other. natural laws
e. This machine crushes oranges. disposition (by functional design)

- rules-and-regulations that we can stipulate, and hence know directly, and that we consciously acquire, such as game rules, operating instructions, parliamentary rules, a variety of law-like generalizations including natural laws, and
- rules based on various forms of 'unconscious' knowledge, such as rules of natural language like the aspiration of stops in syllable-initial position in English.

2.3 Approaches to the semantics of characterizing genericity

2.3.1 All characterizing generic sentences express genericity equally

Carlson (1995): Rules-and-regulations model

- All characterizing generic sentences constitute a single class of sentence types for which a unified semantic analysis can be given by means of the phonologically null generic ***GEN*** operator (Krifka et al 1995, i.a.), a phonologically null Q-Adverb, which is distinguished from other Q-adverbs like *always, usually* by its modal (intensional) dimension.

- the general form of characterizing sentences has three parts, joined by an intensional operator ***GEN***:
  —a "matrix" (nuclear scope) which makes the main assertion of the sentence
  —a "restrictor clause" which states the restricting cases relevant to the matrix
  —a "variable list" that is governed by GEN

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

  $x_1 \ldots x_i$ variables bound by ***GEN***

  $y_1 \ldots y_j$ variables bound existentially, with scope just in matrix

  {x_1}…{x_i} means $x_1 \ldots x_i$ may or may not occur in matrix

- The unified semantics analysis should be best couched within a rules-and-regulations model, rather than (only) to an inductive model.

1. **Problem**: "the fundamental difficulty for the rules and regulations approach remains how to deal with weak and descriptive generalizations … So, 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).

… which are precisely the kind of examples provided by formally marked generic sentences, such as those with the Czech suffix ***-VA-***.

(17) weak generalization:*Max occasionally smokes cigars* ('habitual' sentence)

2.3.2 Characterizing generic sentences are not created equal[4]

- There are different semantic types of characterizing generic sentences, each distinguished by different clusterings of formal properties and lexical expressions, and each systematically requiring a different semantic/ontological model for its interpretation (see e.g., Cohen 2001, Greenberg 2003, Pelletier 2009, Boneh and Doron 2010, Krifka 2012).

2.3.2.1 Greenberg (2003, 2006, 2007): descriptive and 'in virtue of' (definitional) generalizations

- There is a fundamental difference between two kinds of characterizing generic sentences, which are formally distinguished: one type has a singular indefinite subject and the other a bare plural subject (see also Lawler 1973, Krifka et al 1995)[5]:

(18) a.	Boys don't cry.	bare plural subject	DESCRIPTIVE
b.	A boy does not cry.	indefinite singular subject	DEFINITIONAL

- Greenberg (2003): A unified analysis of both constructions in terms of the same MODAL QUANTIFICATIONAL representation (**GEN**, see Krifka et al 1995), but there are differences in the type of law-likeness involved, and differences in the nature of the accessibility relations over possible worlds (which differ in their similarity to the world of evaluation):

— DESCRIPTIVE generalizations "assert, on the basis of several actual instances of the set having the predicated property, that 'there is some pattern here.' In other words, the generalization is not accidental."

4 Borrowing Pelletier's (2009) title.

5 Descriptive (inductive) and definitional (rules-and-regulations) statements often show formal differences. The best-known distinction in English is: (i) Bare plural NPs used to express descriptive (inductive) or definitional (rules-and-regulations) generics; (ii) Indefinite singular NPs used to express definitional generics. Original observation was by Lawler (1973) for accidental (descriptive) vs. essential generalizations (definitional statements):

(i)a.	A madrigal is polyphonic.	c. Madrigals are polyphonic.	definitional (rules-and-regulations)
b.	#A madrigal is popular.	d. Madrigals are popular.	descriptive (inductive)

— 'IN VIRTUE OF' (DEFINITIONAL) generalizations "can only be asserted [with respect to] some relatively specific property associated with the property denoted by the […] subject, *in virtue of* which every member of the corresponding set has the predicated property." *A boy does not cry* "will be true […] if there is some property we associated with the set of boys: a genetic property, or a social norm property […] in virtue of which every member of the set of boys will not cry."

- Greenberg (2006, 2007): Differences between the two types of constructions tied to the degree of vagueness in the specification of exceptions:
  — DEFINITIONAL generics with indefinite singular subjects (*A boy does not cry*) are highly specific, while
  — DESCRIPTIVE generics with bare plurals (*Boys like soccer, Boys don't cry*) are very vague. This difference is represented as a difference in the restriction of the generic quantifier, using supervaluationist methods.

2.3.2.2 Krifka (2012): Descriptive and definitional generics

- DESCRIPTIVE generics are either based on modal quantification or on probability judgments; explanation in terms of causal forces.

- DEFINITIONAL generics make statements about the meanings of expressions (intensions) and how they should be used. Hence, they are analyzed as second-order predications. They are not quantificational at all or based on probability judgments, but rather on the rules-and-regulations approach (in the sense of Carlson 1995); they cover language rules, rules of games, behavior regulated by social norms, and the like.

- This is taken to explain why bare plurals tend to be used for descriptive generics, and indefinite singular generics for definitional generics. The purpose of definitional generics is to give criteria when to call *x a P*. For this, singular forms are optimal, because in the prototypical case *x* is a singular object, i.e., the decision whether an entity falls under a given concept can typically be made by looking at single individuals. We can see this in the *to be* paraphrase:

(19) To be a beaver / ??beavers is to build dams.

- Contrary to the common view that definitional statements are expressed by indefinite singulars, and descriptive generalizations by bare plurals (e.g., Lawler 1973, Greenberg 2003), this is only a tendency, which can be overridden when the predicate requires a sum individual:

(20) a. Friends support each other.
b. To be friends is to support each other.

2.3.2.3 Pelletier (2010): All generics are not created equal

- There is no one single interpretation that is correct for all generic sentences. There are differences in meaning among three types of generic statements, which are lexically differentiated: the bare plural form (BP), the quantificational form (Q), and the adverbial form (Adv).

(21) a. *Birds* fly. bare plural form [BP]
b. *Most* birds fly. quantificational form [Q]
c. Birds *usually* fly. adverbial form [Adv]

- Experimental evidence is adduced showing that the particular linguistic form in which generic statements are expressed determines meaning differences that are evident in default reasoning tasks about the commonsense knowledge that are presented using these forms. BP forms *Birds fly* are judged "more valid", or "as valid more often", then either [Q] *Most birds fly* or [Adv] *Birds usually fly*.

- It remains unclear what the underlying semantic features are that could give rise to these differences.

  — The differences that show up in interpretation of the *three* different types of expressions of generic statements do not seem to straightforwardly map onto Carlson's *binary* inductive vs. rules-and-regulations distinction, the two different ontological/semantic views of genericity.
  — The results are consistent with the view that the two different background models for characterizing generics find expression in two syntactically different sentence-types.

2.3.2.4 Boneh and Doron (2010)

- Two concepts of "habituality": gnomic habituality and actualized habituality.

- *Hab* (a kind of aspectual-modal operator) is orthogonal to both imperfective and perfective aspect, but selected by an *AspP*.

2.3.2.5 Research questions

1. Can we find evidence that there are different semantic types of generic sentences, each distinguished by different clusterings of formal properties, and each systematically requiring a different semantic/ontological model for its interpretation?
2. Are there grammatical markers that directly mark part only of the semantic domain of characterizing genericity? What kind of semantic/ontological commitments do they entail, and do they require that we split it into two or more subdomains?
3. Do the differences in our (theoretical) stance regarding the grounds for the truth of generic sentences motivate the choice of different formal means for their expression?
4. If different types of characterizing generic sentences can be identified, what do they reveal about the sort of knowledge that we use in everyday reasoning?

3 MAIN DATA: THE GENERIC SUFFIX -*VA*- IN CZECH

3.1 The common view of the so-called 'habitual', 'frequentative' or 'iterative' markers

- A number of languages have verbal markers--affixes, and also free morphemes within 'verbal complexes'--that enforce a characterizing generic interpretation of sentences in all their occurrences, i.e., they are a sufficient, but not a necessary, condition for the expression of characterizing genericity (Dahl 1985, 1995):

  e.g., Arabic (Classical), Akan, Catalan, Czech, Didinga, German, Guarani, Hungarian, Kammu, Limouzi, Montagnais, Sotho, Spanish, Swedish, Swedish Sign Language, Yucatec Maya, Zulu (Dahl 1985, 1995); also Awa (New Guinea), Haida (North American Native language), Lithuanian, Swahili (Bantu), West Greenlandic (Eskimo-Aleut).

- A paradigm example of this class of markers is the Czech (West Slavic) verbal suffix *–VA-*, according to Dahl (1995).
  Note: *–VA-* here stands for the various allomorphic variants of the morpheme in question.

2. *–VA-* is attached to an imperfective base (primary or derived from perfective bases) and derives an imperfective generic verb.

(22) a. psát **IMPERF**
write.INF
(i) episodic: 'to be writing', 'to write'
(ii) generic: 'to write as a habit, often ...'
↓
b. psávat **IMPERF**
write.**GEN**.INF
(i) episodic: ≡
(ii) generic: 'to write as a habit, often, as a rule, typically, normally, …'
↓
c. přepsat **PERF**
ITER.write.INF
(i) episodic: 'to rewrite'
(ii) generic: 'to rewrite as a habit, often ...'
↓
d. *přepisovat* **IMPERF**
ITER.write.IPF.INF
(i) episodic: 'to be rewriting', 'to rewrite'
(ii) generic: 'to rewrite as a habit, often ...'
→ e. *přepisovávat* **IMPERF**
ITER.write.**IPF.GEN**.INF
(i) episodic: ≡
(ii) generic: 'to tend to rewrite'

(23) a. *dát* **PERF**
give.INF
(i) episodic: 'to give'
(ii) habitual: 'to give as a habit'
↓
b. *dávat* **IMPERF**
give.IPF.INF
(i) episodic: 'to be giving', 'to give'
(ii) generic: 'to give as a habit, often ...'
→ c. *dávávat* **IMPERF**
give.**IPF.GEN**.INF
(i) episodic: ≡
(ii) generic: 'to give as a habit, often ...'

- Common claims: Markers that systematically enforce a generic interpretation of sentences, such as the Czech *–VA-*, are often treated, and also labeled, as markers of 'frequentativity', 'iterativity' or 'habituality', and subsumed under aspect or tense, rather than being analyzed as generic marker in their own right.

  This view can be found in traditional descriptive grammars, but also in many contemporary linguistic studies (Dahl 1985, 1995, and references therein). On one dominant view (starting with Comrie 1976), 'habituality' is an aspectual notion, falling under imperfective aspect.

- The canonical member of this class of markers, according to Dahl (1995), is the verbal suffix *–VA-* in Czech. However, it fails to exhibit the properties this class is commonly claimed to have.

3.2 The verbal suffix –VA- in Czech is a generic marker sui generis

- **–*VA*- is not a marker of tense or aspect** (for details see Filip and Carlson 1997, Filip t.a.)

  The verbal suffix –*VA*- in Czech has formal properties which clearly prohibit its classification as a tense, and it cannot be subsumed under imperfective aspect, because its formal and semantic properties clearly set it apart from the dedicated imperfective suffix; moreover, it can co-occur with the dedicated imperfective suffix on a single verb, whereby each makes an independent semantic contribution to the meaning of a sentence.

3. **–*VA*- is not a marker of iterativity** (pace Dahl 1995, i.a.)

   It is incompatible with iterative adverbials, such as 'three times', which count particular episodes that are not a part of a larger pattern; in general, iterativity is an episodic (not generic) notion. In contrast, forms without –*VA*- are straightforwardly acceptable with iterative adverbials:

(24) a.? *Pavel hráv*al **IMPERF** *třikrát šachy s dědou*. '?': uninterpretable
Paul play.**GEN**.PAST **3.times** chess with grandpa.
? 'Paul used to play three games of chess with grandpa.'

b. *Pavel hrál* **IMPERF** *třikrát šachy s dědou.*
Paul play.PAST 3.times chess with grandpa.
'Paul played three games of chess with grandpa.'

(25) a. ? *Přepisováv*al **IMPERF** *nejméně třikrát svůj proslov*.
ITER.write.IPF.**GEN**.PAST at.least **3.times** his speech
? 'He used to rewrite his speech at least three times.'
NOT intended: there was a habit based on sets of three rewriting events

b. *Přepisoval* **IMPERF** *nejméně třikrát svůj proslov.*
ITER.write.IPF.PAST at.least 3.times his speech
'He rewrote his speech at least three times.'

- **–*VA*- cannot be analyzed in terms of a quantifier over situations akin to *most* or *usually*** (pace Dahl 1995), and neither can its meaning be reduced to any other *single* extensional quantifier or expression of quantity. Two main reasons:

  (i) -*VA*- freely co-occurs with any adverb of quantification, including 'rarely', 'seldom'

(26) *Bohužel se jen velice zřídka stává*[IMPERF], *že máme dostatek prostředků na výzkum.*
unfortunately REFL only very rarely happen.**GEN** that have.1PL enough means for research
'Unfortunately, it happens only very rarely that we have enough resources for research.'

⇒ *-VA-* does not, on its own, contribute any requirement on the prevalence of the generically-predicated property. This property of *-VA-* is unsurprising if we assume that it is a marker of characterizing genericity, which concerns generalizations over a different number of situations (see e.g., Krifka et al 1995).

Danaher (2003) observes, based on his corpus-study, that *-VA-* occurs less often with *obvykle* 'usually' than with adverbials indicating a low frequency like *občas* 'from time to time', *někdy* 'sometimes', *málokdy* 'rarely', *tu a tam* 'here and there', *vzácně* 'rarely'.

(ii) *-VA-* commonly marks a generic interpretation of sentences that are true even if most relevant instances do not satisfy the generically-predicated property. This can be best shown in cases where the addition of *obyčejně* 'usually' or *většina* 'the majority', for instance, does not preserve the truth value of the original sentence, and yields a factually false sentence:

(27) a. *Žraloci napadávají*[IMPERF] *plavce*. TRUE
sharks attack.**GEN** bathers
'Sharks tend to / may attack bathers.'

b. *Žraloci obyčejně napadávají*[IMPERF] *plavce*. FALSE
sharks usually attack.**GEN** bathers
'Sharks usually attack bathers.'

(28) a. *Za Stalina ruští generálové umírávali*[IMPERF] *v mladém věku*. TRUE
during Stalin Russian generals died.**GEN** in young age
'In Stalin's times, Russian generals tended to die young.' Kučera 1981, 1999[6]

6 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 youn in Stalin's times.

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

- The truth value judgements of generic sentences depend on our general world knowledge and specific kind-related expectations.

  In the above examples, for instance, although sharks are known for attacking humans, it is rare, as a matter of fact, for them to do so. What matters for the truth of the above sentences is not that the generically-predicated property is true of most instances of sharks or Russian generals, but rather that it is a striking property of the kind SHARK and RUSSIAN GENERAL, similarly as has been observed for English generics like *Mosquitoes carry the West Nile Virus*, which are true by virtue of the fact that only about 1% of mosquitoes carry the virus (Krifka et al 1995; Leslie 2008).

3.3 Distribution of –VA- across characterizing generic sentences

3.3.1 When it may be used

- **Czech has three verb forms available for the expression of characterizing genericity:**

  (i) formally marked generic forms with ***–VA-***, which are imperfective,
  (ii) formally unmarked imperfective forms,
  (iii) formally unmarked perfective forms.

- **(i)–(iii) may be interchangeable salva veritate, in some contexts at least:**

(29) *Obyvatele* *přijde* **PERF** *draho,* *když* *jejich psi*
tenants come expensive when their dogs
(i) … ***štěkávají*** **IMPERF** *v bytě.*
… bark.**GEN** in apartment
(ii) … ***štěkají*** **IMPERF** *v bytě.*
… bark in apartment
(iii) … ***zaštěkají*** **PERF** *v bytě.*
… bark in apartment

'It is costly for tenants, when their dogs (give a) bark in their apartment.'[7]

(30) *Tato barva na vlasy se mění* **IMPERF** */ změní* **PERF** */ měnívá* **IMPERF** *v závislosti na teplotě.*
this color on color REFL changes / changes / changes.**GEN** in dependence on temperature
'This hair color changes color with the temperature.'

- *–VA-* **may mark a characterizing generic sentence with a kind reference**

(31) *Člověk se k stáru mění* **IMPERF** */ změní* **PERF** */ měnívá* **IMPERF** .
man REFL towards old.age changes / changes / changes.**GEN**
'A man changes as he grows old.' (modified from Karel Čapek, *Ordinary Life*, 1934)

- *–VA-* **may mark a 'habitual' sentence (a special case of characterizing genericity)**

(32) *Honza sedí* **IMPERF** */ sedává* **IMPERF** *v hospodě.*
John sits / sits.**GEN** in pub
'John tends to sit in a pub.'[as a habit, often, regularly …]

- *–VA-* **is compatible with gradable properties leading to weak truth conditions of characterizing generics** (Nickel 2016, and references therein)

(33) *Češi jsou* **IMPERF** */ bývají* **IMPERF** *dobří muzikanti.*
Czechs are / are.**GEN** good musicians
'Czechs are/ tend to be good musicians.'

- Consider the following contrast:

(34) *Psi štěkají* **IMPERF**. *Psi štěkávají* IMPERF.
dogs bark dogs bark.**GEN**
'Dogs bark.' 'Dogs (tend to) bark.'

- A prototypical characterizing generic statement, such as *Dogs bark*, is most naturally conveyed by a formally unmarked imperfective verb *štěkají.*

7 The original sentence has the perfective verb *zaštěkají* ('the bark').

- The corresponding *–VA*-form *štěkávají* seems to signal the speaker's intention to convey that she *knows* that the property of barking does not hold for all members of the kind DOG, or that she is *ignorant* whether it holds.

- The *–VA*-form most naturally occurs in contexts that specify the situation in which the expressed regularity normally takes place; in the sentence below the generalization concerns what the typical dog normally/typically does if it meets strangers, and it also signals the speaker's intention to convey her knowledge that there are exceptions to this regularity, or her genuine ignorance concerning possible exceptions:

(35) *Psi štěkávají*[IMPERF] *na ty, které neznají.*
dogs bark.**GEN** at those whom **NEG**.know
'Dogs bark at those whom they do not know.'

- QUESTIONS:
  (i) How do we motivate the use of formally marked generic forms to express characterizing generic statements, when such statements can also be expressed by morphologically related forms that are unmarked for genericity?
  (ii) What is the relation the Czech suffix *-VA-* (and similar markers) to ***GEN***?

3.3.2 When it cannot be used

4. *–VA-* **clashes with episodic adverbials that refer to specific time points**, such as 'yesterday at 3 pm', while (imperfective) verbs without it are straightforwardly acceptable with such adverbials

(36) a. *Včera ve tři hodiny* *Pavel* *hrál*[IMPERF] *šachy s dědou.*
yesterday at three o'clock Paul played chess with grandpa.
'Paul was playing chess with grandpa yesterday at 3 pm.'

b. ? *Včera ve tři hodiny* *Pavel* *hrával*[IMPERF] *šachy s dědou.*
yesterday at three o'clock Paul played.**GEN** chess with grandpa.
? 'Paul used to play chess with grandpa yesterday at 3 pm.'

(37) a. *Včera ve tři hodiny* *přepisoval* **IMPERF** *ten dopis.*
yesterday at three o'clock ITER.write.IPF.PAST this letter.SG.ACC
'He was rewriting this letter yesterday at 3 pm.'

b. ? *Včera ve tři hodiny* *přepisovával* **IMPERF** *dopis.*
yesterday at three o'clock ITER.write.IPF.**GEN**.PAST letter.SG.ACC
? 'He used to rewrite a letter yesterday at 3 pm.'

5. *–VA-* excludes any episodic interpretation of a sentence, and enforces its generic interpretation, whereas verb forms without it freely alternate between an episodic and a generic interpretation, depending on context:

(38) a. *Pavel* *hrál* **IMPERF** *šachy s dědou.*
Paul played chess with grandpa.
(i) 'Paul was playing chess with grandpa.' EPISODIC
(ii) 'Paul used to play chess with grandpa.' GENERIC

b. *Pavel* *hrával* **IMPERF** *šachy s dědou.*
Paul played.**GEN** chess with grandpa.
'Paul used to play chess with grandpa.' GENERIC

- *–VA-* **is unacceptable in generic sentences that describe what is merely hypothetical**, and has not yet been realized (e.g., dispositional statements)

(39) a. *Tento stroj* *drtí* **IMPERF** *pomeranče.*
this machine crushes oranges
'This machine crushes oranges
. . . √ 'but we haven't used it yet.'

b. *Tento stroj* *drtívá* **IMPERF** *pomeranče.*
this machine crushes.**GEN** oranges
'This machine crushes oranges
. . . ✗ 'but we haven't used it yet.'

⇒ **'actuality inference':** *-VA-* requires that there be verifying instances of the generically-predicated property in the actual world, which is best shown by the fact that a purely dispositional reading predicated on their absence is unacceptable (as the above contrast shows)

- *–VA-* **is unacceptable in generic sentences that express generalizations which categorically exclude exceptions** (analytic truth, constitutive rules, physical laws, principles of biology, laws of chemical composition, regulative rules like traffic rules, game rules, and legal statutes, etc.)

(40) a. *Trojuhelník má* **IMPERF** / *?mívá* **IMPERF** *tři strany.* analytic truth
triangle has / has.**GEN** three sides
'A triangle has three sides.'/ ? 'A triangle tends to have three sides.'

b. *Valčík je* **IMPERF** / *?bývá* **IMPERF** *ve tříčtvrtečním taktu.* constitutive rules
waltz is / is.**GEN** in three.quarter time
'A waltz is / ?usually is in three quarter time.'

c. *Země se točí* **IMPERF** / *?točívá* **IMPERF** *kolem slunce.* physical law
earth REFL revolves / revolves.**GEN** around sun
'The Earth revolves / ?tends to revolve around the Sun.'

d. *Velryba je* **IMPERF** / *?bývá* **IMPERF** *savec.* biological classification
whale is / is.**GEN** mammal
'A/the whale is / ?tends to be a mammal.'

e. *Voda se skládá* **IMPERF** / *?skládává* **IMPERF** *z kyslíku a vodíku.*
water REFL consists / ? consists.**GEN** of oxygen and hydrogen
'Water consists / ?usually consists of oxygen and hydrogen.'

f. *V Anglii se jezdí* **IMPERF** / *?jezdívá* **IMPERF** *po levé straně.* regulative rules
in England REFL drives / ?drive.**GEN** on left side
'In England, one drives /? tends to drive on the left.'

- *–VA-* **cannot co-occur with a universal quantifier** that binds the situation or individual variable in its scope (see Filip 1994, 2009)

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

b. *Každý Čech je* **IMPERF** / *?bývá* **IMPERF** *muzikant.* q over individuals
every Czech is / is.**GEN** musician

'Every Czech is / ?tends to be a musician.'

–VA- forms may be felicitous with the universal quantifiers, such as *každý* 'each/every', *vždy(cky)* 'always' and *nikdy* 'never', but in such combinations, however, the universal quantifiers do not have their customary universal quantificational force (Danaher 2003, p.45), and instead seem to suggest intensification of the strength of the regularity(ibid.), perhaps downplaying the existence of exceptions to the described regularity, of which the speaker is also aware:

(42) a. 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

b. "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

Notionally, the combinations of the Czech generic *-VA-* with the universal quantifiers *vždy(cky)* 'always' and *nikdy* 'never' are similar to the combinations of *usually* with *always* and *never* in English, in which the universal quantifiers do not arguably have their universal quantificational force:

(43) 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.

- **–*VA*- cannot be used for the expression of generalizations that concern individual-level properties of individuals**

(44) *Karel je* **IMPERF** */ ?bývá* **IMPERF** *svobodný muž.*
Charles is / is.**GEN** free man
'Charles is a bachelor.' / 'Charles tends to be a bachelor.'

(45) A: *Jaké povolání má Pavel?*
What is Paul's profession?

B: *Učí* **IMPERF** *na střední škole.*
teaches on middle school
'He teaches at high school.'
i.e., 'He is a high-school teacher.'

B': #*Učívá* **IMPERF** *na střední škole.*
teaches.**GEN** on middle school
#'He usually / on and off teaches at high school.'

As an answer to the question A, it would be odd to answer with B', which contains the formally marked generic verb form. However, B' might be acceptable as an answer to the question A in a situation in which Paul holds more than one job, whereby being a teacher is just one of them.

- *–VA-* **is odd with non-gradable properties that lead to strong truth conditions for generic sentences** (Nickel 2016, and references therein): i.e., interpreted as quantifying over most members of a kind from a suitable domain (Cohen 1999a,b) or all 'normal' members (Asher and Morreau 1995)

(46) Havrani jsou **IMPERF** / # bývají **IMPERF** černí.
ravens are / are.**GEN** black
'Ravens are black /# tend to be black.'

3.3.3 When it must be used

- *–VA-* **is obligatory in generic sentences predicating properties to which there are known positive counter-instances** (in the sense of Leslie 2008)

(47) a. *Books are paperbacks.* FALSE Leslie 2008
b. *Typically, books are paperbacks.* TRUE

- **'positive counterinstance' versus 'negative counterinstance'**[8]
"a positive counterinstance to 'Ks are F' occurs when an instance of the kind K has a concrete alternative property, that is, when it has a positive alternative to the property F, whereas a negative counterinstance occurs when an instance simply fails to be F" (Leslie 2008, pp. 33-34).

8 The distinction between positive and negative counterinstances is not intended as a metaphysical distinction, but rather a psychological one; what matters here is human perception (Leslie 2008, p. 34).

Example: 'books are paperbacks' has **positive counterinstances**, namely those books that fail to be paperbacks in virtue of possessing the positive alternative property of being hardcover books. So the kind BOOK is naturally partitioned into paperback books and hardcover books (two subkinds). Background knowledge: Books often come as paperbacks; only a small percentage of books are hardcover.[9]

Table 1: The partition of the kind BOOK

kind BOOK	
subkind: PAPERBACKS	subkind: HARDCOVERS
instances of PAPERBACKS	positive counterinstances to PAPERBACKS

Example: 'birds lay eggs' has **negative counterinstances**, namely the birds that *simply fail* to lay eggs, and they do so without possessing a positive alternative property.

Table 2: The partition of the kind BIRD

kind BIRD	
EGG-LAYING BIRDS	¬ EGG-LAYING BIRDS
instances of EGG-LAYING BIRDS	negative counterinstances to EGG-LAYING BIRDS

- The distinction between positive and negative counterinstances is relevant for our judgements about the truth and falsity of generic sentences:

(48) positive counterinstances

a. *Knihy* *jsou*[IMPERF] *brožované.* FALSE
books are paperback
'Books are paperback.'

b. *Knihy* *bývají*[IMPERF] *brožované.* TRUE
books are.GEN paperback
'Books tend to be paperback.'

(49) negative counterinstances

9 To take another example: 'Birds are female' has positive counterinstances, namely those birds that fail to be female in virtue of possessing the positive alternative property of being male.

a. *Lvi* *mají*[IMPERF] *hřívu.* TRUE
lions have mane
'Lions have a mane.'

b. (#) *Lvi* *mívají*[IMPERF] *hřívu.* TRUE
lions have.GEN mane
(#) 'Lions tend to have /usually have a mane.'

3.3.4 Summary

(i) 𝌆-*VA*-: two limiting cases in which –*VA*- is excluded

(i) the generically-predicated property has **no verifying instances** in the actual world (e.g., dispositional statements), or
(ii) must hold for **all the** (relevant, 'normal') **instances** without exception, e.g., laws of nature, biological and genetically encoded properties ('ravens are black'), constitutive ('triangles have three sides') and regulative rules ('In England, we drive on the left'), also lexicalized by means of ILPs, such as *a mammal, a bachelor,…*

⇒ best fit with the rules-and-regulations model

- T⌇ -*VA*-: weak generalizations – some salient examples

(i) generalizations implying positive counter-instances 'books are usually paperback'
(ii) habituals: 'John smokes after dinner'
(iii) gradable properties: 'Dutchmen are good sailors'
(iv) all regularities that commonly have exceptions, whereby the use of -*VA*- signals that the speaker knows for sure that the expressed regularity does not hold for all instances of a kind, or is ignorant about whether it does.

⇒ best fit with the induction model

- The distribution of the Czech generic suffix -*VA*-

— is consistent with Carlson's (1995) distinction between the rules-and-regulations versus inductive models of genericity: -*VA*- is used to encode inductive (weak) generalizations, and is incompatible or highly odd in generic sentences that are based on the rule-and-regulations model;

— provides *linguistic evidence* for two types of characterizing generic sentences. It is not just a matter of some surface formal non-uniformity of characterizing generics, but the difference between these two types is reflected in the semantic properties of formally marked and unmarked generic sentences;
— highlights the role of exceptions in our reasoning about regularities and patterns, which according to some (e.g., Pelletier and Asher 1997) is perhaps the most interesting and puzzling feature of characterizing generic sentences, and one which poses a fundamental challenge to their semantic analysis;

4 PROPOSAL

The Czech suffix *-VA-* that enforces a generic interpretation of a sentence

i) is a generic marker sui generis, which cannot be subsumed under either tense or aspect (Filip and Carlson 1997, Filip t.a.);
ii) behaves like a Q-adverb (Filip (1993, 1994, 2009) when it comes to its variable-binding properties;
iii) is distinguished from other Q-adverbs like *usually, seldom, often* and the like by
- being dedicated to expressing **weak (inductive) generalizations**, and
- its **modal (epistemic)** dimension. Its distribution across different types of generic sentences--i.e., when it may, must and must not be used--is motivated by the differences in the cognitive agent's stance regarding the grounds for the truth of generic sentences, and specifically regarding exceptions they commonly have.

4.1 Variable-binding properties of ***-VA-***

- *-VA-* exhibits variable-binding properties akin to those of Q-Adverbs (Filip (1993, 1994, 2009; for variable-binding properties of Q-Adverbs see Chierchia 1995, i.a.)[10]:
- ***-VA-* can bind a situation variable (quantification over a set of contextually specified situations).**

(50) *V sobotu Honza sedává* **IMPERF** *v hospodě.*
on Saturday John sits.**GEN** in pub
'On Saturday, Honza (usually) sits in the pub.'
VA [s,x;] (x=**John** ∧ **Saturday**(s) ∧ x in s ; x **sits in pub** in s)
'For a given situation *s* such that *s* is located on Saturday, Honza sits in a pub in *s*.'

10 It is not licensed by a null *GEN* operator (*pace* Chierchia 1995).

(51) General tripartite semantic representation for characterizing generic sentences that express generalizations over situations (Krifka et al 1995, p.32, [56]):

GEN[... s ... ; ...] (**Restrictor** [... s ...]; **Matrix**[... s ...]),
where *s* is a situation variable

This formula defines a 'habitual sentence' in Krifka et al (1995), and meant to cover not only characterizing generics that concern habits or regular actions of individuals, but also any regularities based on episodic situations:

John drives to work. **GEN**[x,s] (*x* = **John** & *x* **in** *s*; *x* **drives_to_work in** *s*)
'In appropriate situations which contain John, John will drive to work.'

The Sun rises in the East. **GEN**[x,s] (*x* = **the_Sun** & *x* **in** *s*; *x* **rises_in_the_East in** *s*)
'In situations which contain the Sun, it will rise in the East.'

- ***-VA-*** **can bind individual variables provided by indefinites (singular and bare plurals).**

(52) a. *Čech bývá* **IMPERF** *dobrý muzikant.*
Czech is.**GEN** good musician
'A Czech is usually a good musician.'
VA [x;] (**Czech** (x) ; **a_good_musician** (x))
'When an individual has the property of being Czech, sh/e is a good musician.'
Quantification over individuals who are Czech, whereby some proportion of them are good musicians, not necessarily most or all (weak truth conditions). What proportion exactly depends on the context of use.

- ***-VA-*** **can bind variables provided by kind-denoting definites.**

In the sentences below, *člověk* 'man' and *rohozub nachový* 'fire moss' are both kind-referring terms, and ***-VA-*** is here used to quantify over instances of these kinds. The sentences express generalizations that are true by virtue of the fact that it also holds of most or all specimens (strong truth conditions)

(53) a. *Člověk se k stáru měnívá* **IMPERF**
man REFL toward old.age changes.**GEN**
'Man changes as he grows old.' (Karel Čapek, *Ordinary Life*, 1934)

a.′ **VA** [x;] (**man** (x); **change_in_old_age** (x))

b. *Rohozub nachový bývá* **IMPERF** *rozšířený u lidských sídlišť.*
ceratodon purpureus is.**GEN** widespread at human dwellings
'Fire moss tends to be widespread close to human dwellings.'

b.′ **VA** [x;] (**ceratodon_purpureus** (x); **widespread_at_human_dwellings** (x))

- ***-VA-* can bind more than one variable.**

- ***-VA-* can (by and large) freely select the arguments it binds, modulo context.**

(54) a. *Kočka honívá* **IMPERF** *myš.*
cat chases.**GEN** mouse
'A cat chases a mouse.'

a.′ **VA**[s,x,y;] (**cat**(x) ∧ **mouse** (y) ∧ C(x,y,s) ; **chase** (x,y,s))

b. *Televizní hlasatel na Nově nosívá* **IMPERF** *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))

(i) Note : For generic sentences that involve positive counterinstances (*Books are usually paperbacks*) and negative counterinstances (*Lions have manes*), we would also need an implicit cover argument that partitions the extension of the domain over which ***-VA-*** quantifies into cells (for 'covers' see Schwarzschild 1994, 1996).

4.2 Epistemic effects

- Although some notion of quantity is relevant for the analysis of ***-VA-***, quantity or (extensional) quantification on its own is neither sufficient nor necessary.

- The key factor to understanding what kind of characterizing generic sentence ***–VA-*** marks is essentially modal (epistemic): namely, the cognitive agent's epistemic stance to exceptions to the expressed generalization.

- ***–VA-*** allows two epistemic attitudes to exceptions:

(i) ***A* knows that there are exceptions** to the generically predicated property *p*, including the cases when it holds for members in only one partition of the domain over which *–VA-* quantifies (see e.g. (positive) counterinstances);

(ii) ***A* is ignorant about whether *p* has *no* exceptions** (whether *–VA-* is to be interpreted as quantifying over all members of a kind or over all the relevant 'cases' involving both individuals and situations).

- In the first case (i), *–VA-* signals *A*'s commitment to exceptions, i.e., that the generalization does not hold for all the instances in the domain over which it quantifies, for instance, in the sentence below, not all the members of the kind BOOK are paperbacks (some are hardbacks, its positive counterinstances):

(55) a. *Knihy bývají*[IMPERF] *brožované.* TRUE
books are.GEN paperback
'Books tend to be paperback.'

b. *Knihy jsou*[IMPERF] *brožované.* FALSE
books are paperback
'Books are paperback.'

- In the second case (ii), *–VA-* signals *A*'s genuine ignorance about whether there are exceptions: *A* infers that there is some pattern, but cannot rule out the existence of exceptions and neither their absence. The use of *–VA-* may also be motivated by the 'competition' with the corresponding unmarked *–VA*-less form, because the latter is not only compatible with exceptions, but may imply a commitment to *no* exceptions.

(56) a. *Honza učívá*[IMPERF] *na vysoké škole.*
John teaches.GEN on high school
'John teaches at a university.' [usually / often / seldom / typically …]

b. *Honza učí*[IMPERF] *na vysoké škole.*
John teaches on high school
'John teaches at a university.' [strong suggestion: John is a university professor]

Note: A competition-based account of epistemic effects of formally marked characterizing generics would require a semantic analysis of formally unmarked characterizing generics in Czech. It would be done along the same lines that are

proposed for the analyses of English characterizing generics, such as *Birds fly, Gold is a precious metal, John walks across this square on his way to work*, etc., and consequently faces the same puzzles and challenges.

- In some cases, what matters the most for the occurrence of *–VA-* is only its epistemic (modal) component, the stance of the speaker to exceptions a given generalization may have, rather than the quantificational component.

  Example: The (a) sentence below conveys the cognitive agent's commitment to no exceptions, the expressed regularity concerns all paired house-garden covers. In contrast, the (b) sentence expresses a distinctly weaker regularity, whereby the cognitive agent intends to convey something like
  (i) 'I know that there is *not* a garden at each house' (commitment to exceptions), or
  (ii) 'I don't know whether there is a garden at each house' (ignorance regarding the presence/absence of exceptions):

(57) a. *U každého domu* *je* **IMPERF** *zahrada.*
at each house is garden
'At each house, there is a garden.'

b. *U každého domu* *bývá* **IMPERF** *zahrada.*
at each house is.**GEN** garden
'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".

Table 3: Generic characterizing sentences ~ Epistemic states of *A*

K_A[SG(p)]	¬K_A[SG(p)]
negative knowledge: K_A¬[SG(p)]	ignorance: ¬K_A¬[SG(p)]

(58) K_A[SG(p)] 'strong generalization'
where K_A[p] stands for 'A knows that p'.

generalizations that are expressed by generic sentences that

(i) categorically exclude any exceptions (such as analytical truths, laws of physics, constitutive rules and regulative rules, etc.)

(ii) have strong truth conditions (*ravens are black*), i.e., interpreted as quantifying over all 'normal' instances (Asher and Morreau 1995) or most instances of a kind from a suitable domain (Cohen 1999a,b), and as such are akin to *ceteris paribus* laws;

(iii) have truth conditions primarily modeled on rules-and-regulations (in the sense of Carlson 1995);

(iv) exclude *–VA-* which due to its specific lexical semantic properties can only be used when the issue of exceptions meaningfully arises, and not just as a matter of some default reasoning.

(59) $\neg K_A[SG(p)]$ 'weak (inductive) generalization'
where $\neg K_A[p]$ stands for 'It is not the case that A knows that p'.

generalizations that are expressed by generic sentences for which the choice of *–VA-*, and its contrastive absence, signals the cognitive agent's *A* stance to exceptions to the expressed regularity.

By using the generic suffix ***-VA-***, *A* denies the commitment that there are no exceptions to the expressed generalization, thereby committing herself to

(i) either the knowledge of exceptions $K_A\neg[SG(p)]$ ('books are-*VA* paperbacks'),

(ii) or her ignorance concerning the absence/presence of exceptions $\neg K_A\neg[SG(p)]$.

4.3 Consequences

- The relation between the Czech suffix *-VA-* and the null generic operator ***GEN***

  -VA- cannot be a phonologically spell-out of ***GEN***, assuming that all 'strong generalizations', which fit the rules-and-regulations model of Carlson (1995), are analyzed by means of the null generic operator ***GEN***. Rather, *-VA-* behaves like a Q-adverb specifically tailored to express weak generalizations, based on the inductive model (see Carlson (1995), with a modal (epistemic) component that regards epistemic commitments to certainty/ignorance regarding exceptions to the generically-predicated property.

- Such epistemic commitments are also at the core of motivation for why it should be the case that we use formally marked generic forms to express characterizing generic statements, when such statements can also be used for this purpose.

- This novel '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:

(60)

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.

- For instance, consider the pair *three* (unmodified number) vs. *at least three* (modified number). Whereas propositions with unmodified numbers, such as *n Fs G*, are true in all instances where the corresponding modified number is true, in *at least n Fs G*, the speaker commits herself to be ignorant as to how many *Fs* are in fact *G*. Among similar examples are ordinary vs. epistemic indefinites (e.g. *ein* vs. *irgendein* in German), and ordinary vs. epistemic numbers (*twenty* vs. *twenty-some*).

5 Conclusions

- The distribution of the Czech suffix ***-VA-*** suggests that there are at least two main types of different semantic types of generic sentences, each distinguished by different formal properties, one marked with ***-VA-*** and the other lacking it, and each requires a different semantic/ontological model for its interpretation.

- These two types of generic sentences are consistent with Carlson's (1995) view that there two different bases/grounds for generalizations, one which correlates with the inductive model of genericity and the other with the rules-and-regulations model.

- We argue that the Czech suffix ***-VA-*** is a modal (epistemic) quantificational operator which is introduced into the logical representation of sentences that express weak inductive generalizations. Its quantificational properties resemble those of Q-Adverbs, while its epistemic modal component concerns the cognitive agent's commitments to (un)certainty/ignorance regarding the exceptions to the expressed regularity, and hence her degree of commitment to its truth.

- Factoring in *A*'s stance on exceptions shows that the differences in her stance regarding the exceptions, and thus also the grounds for the truth of generic sentences, motivate the choice of different formal means for their expression.

- The distribution of the Czech generic suffix *-VA-* highlights the role of exceptions in our everyday reasoning about regularities and patterns, which is one of their most puzzling features (e.g., Pelletier and Asher 1997):

> "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. Whatever the underlying reason, the fact is that people notice those regularities that can be used to predict actions of others and changes (or constancies) in one's environment. And such regularities commonly have exceptions; either ones that are noticed later or ones that we think we can safely ignore (for whatever reason)" (Pelletier and Asher 1997, p. 1129).

- Some open questions:

(1) If the Czech suffix *-VA-* is a paradigmatic example of the class of verb markers that enforce a generic interpretation of a sentence, as Dahl (1995) suggests, are such markers also dedicated to the expression of weak inductive generalizations? What is their modal force, if any?

(2) How does the Czech suffix *-VA-* and similar markers interact with negation? E.g., does a negated sentence like

(61) Nejídávám **IMPERF** cukr.
NEG.eat.**GEN**.1SG sugar
'I tend not to eat sugar' / 'As a rule / Typically, I don't eat sugar.'

express a negative habit, or deny that there is a pattern, but not that there have been no situations of my eating sugar.

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