Exemplar-Based Genericity

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Goals of the talk:

- To address some unsatisfactory aspects of the theory of generic quantification based on an 'invisible' adverb of quantification plus unselective binding.
- To argue that many of the effects of GEN can be obtained by exploiting the structure of *subkinds* to its full extent.

(1) Every (type of) lemur is in danger of extinction.

(2) a. Dogs bark.
b. GEN x,s [x is a dog in s][x barks]

Current 'standard' assumption (see e.g. Leslie 2015; Mari, Beyssade, and del Prete 2013a): two different types of generic sentences:

- One based on genuine predication of '*kinds of things*':

  (3) a. Dogs {are rare / have many breeds} *kind-level predicates.*
  b. **has_many_breed**$'$(dogs^{k})

- One which uses an invisible GEN operator to binding a normal object, which is provided by the restrictor either directly (5a), or indirectly (4c) (the 'Neocarlsonian' position, in which all nouns can denote kinds, at least in English)

  (4) Dogs {bark / have four legs} *object-level predicates.*
  a. GEN x [**dogs**$'_{<e^{o}t>}$(x)][**has_4_legs**$'$(x)] Diesing(1992)
  b. GEN x^{o} [$^{\cup}$**dogs**$'_{<e^{k}>}$(x)][**has_4_legs**$'$(x)] Chierchia (1998)

- Attempts at a unification (see Delfitto 2002 or Liebesman 2011), criticized (e.g in Leslie 2013) for problems with pronoun binding from the nuclear scope, and for the analogy between (4) and overt adverbs of quantification

A-generic

The strength of the quantificational approach rests largely on its ability to render contrasts like (5): 'A-generics' no not accept kind-level predicates, but accept 'quantificational' sentences:

(5) An Italian {likes pizza / *is common at conferences}

A-generics can go with an overt adverb of quantification (Lewis 1975: *always, usually, rarely, never, . . .*). The quantification force varies depending on the adverb:

(6)
a. A sentence always contains a noun. $\Rightarrow$
   All sentences contain a noun.
b. A sentence usually contains a verb. $\Rightarrow$
   Most sentences contain a verb.
c. A sentence rarely contains a hash sign. $\Rightarrow$
   Few sentences contain a hash sign.
d. A sentence never contains two periods. $\Rightarrow$
   No sentence contains two periods.

Adverb of quantification-style analysis for A-generics

GEN is a 'covert' adverb of quantification (Gerstner and Krifka 1987; **?**)

(7) a. A lion has a mane
b. GEN x^o [**lion**(x)] [**has_mane**(x)]
c. 'It is generally true that if you are a lion you have a mane' or 'for all x which are (normal?) lions, x have manes'

Since quantification is over individuals, Kind-level predicates are correctly excluded.

With temporal (aka 'stage level') predicates, we must assume that GEN quantifies *also* over 'situations' (in (8), situations where it would be appropriate to roar)

(8) a. a lion roars
b. GEN x^o, s [**lion**(x) at situation(s)] [**roars**(x) in s]
c. 'For all x that are (normal? canonical?) lions and all roaring-appropriate situations s, x roars in s'

Unfortunately, this analysis raises many problems. Many have been noted in the literature, but some have not.

Problems with GEN as an AoQ: Variability

- GEN: immense quantificational variabily (from *all* to *none yet*), dependent on various features of the predicate. E.g.
  - how dangerous it is (Prasada, Khemlani, Leslie, and Glucksberg 2013) (9),

    (9) Anopheles mosquitoes leave you with {yellow fever / a mark on the skin}.
  - Whether it expresses common or scientific knowledge:

    (10) Prime numbers {appear in popular novels / are odd}
  - Whether it expresses a property which is accidental or the product of design (11)

    (11) This machine {crushes oranges / breaks down easily}
- A 'Carlsonian', compositional solution would be to leave the variability to the semantics of the restrictor and the predicate, not to a global operator.

Problems with GEN as an AoQ: Normality

- Bare plurals in the restrictor have to be more 'normal' than elements in the Nuclear Scope/Predicate.

  (12) Dogs have four legs. *normal ones: 3-legged dogs don't count.*

  (13) I saw dogs (in the street). *any dog counts*

  This is especially problematic for the Neocarlsonian account: both cases require the object-level *dogs* to be derived from the kind.

  (14) a. GEN x^o [$^\cup$**dog**(x)][4_legs(x)]
  b. $\exists$ x^o[$^\cup$**dog**(x) $\wedge$ **saw**(I,x)]

  So, 'normality' must be imposed by GEN on the restrictor. How?

Problems with GEN as an AoQ: No overt GEN

- No overt adverb of quantification, possibly in any language, seems to exactly captures the meaning of GEN.

  (15) are normally judged true with the adverbial, but false without (i.e. with GEN active).

  (15) a. A prime number is (normally/typically/frequenty/nearly always/...) odd
  counterexample: 2
  b. A bee is (normally/typically/frequenty/almost always/...) sterile.
  counterexample: queen

  (Prasada, Khemlani, Leslie, and Glucksberg 2013; Leslie 2015): maybe GEN is too 'default/unmarked' to be expressed. It is the expression of our 'base mode' of categorization.

Problems with GEN as an AoQ: No overt GEN

- Yet, languages can sometime express default forms (e.g. present-tense *be*), if only to be able to negate them.

(16) a. John doesn't always/often smoke. =
b. John's smoking doesn't happen at all/most times when he could smoke.

Attempting to negate GEN:

(17) a. John eats at 6.
b. John doesn't eat at 6, but he at ate 6 today. *odd (ambiguous?)*
c. John doesn't *normally* eats at 6, but he ate at 6 today.

Problems with GEN as an AoQ: Necessity for multiple operators

- GEN is not a covert adverb of quantification, since it can coexist with them:

  (18) Sue has often smoked *she was often a smoker*

  (19) a. John normally eats horsemeat.
  he eats it regularly, or normally has a disposition to eat it

- Overt adverbs of quantification have readings which GEN does not have:

  (20) a. Laura drinks {beer / ?? a beer} (Rimell 2004)
  b. Laura usually drinks {beer / a beer}

  Rimell (2004): indefinites take wide scope, BPs do not.

Solution: two operators, GEN and HAB (the latter linked to the aspectual morphology of the verb, Boneh and Doron 2012, and Mari, Beyssade, and del Prete 2013b).

Problems with GEN as an AoQ: Romance bare plurals I

- Romance bare plurals cannot combine with kind-level predicates. In Italian, they are narrow-scope existentials.

(21) a. Carlo comprò lampadine a LED. ∃ *only*
Carlo bought lightbulbs with LED light.

b. ??Carlo inventò lampadine a LED. *'invent' wants a kind*
Carlo invented lightbulbs with LED light

c. *Lampadine a LED {consumano poco / sono diffuse}
Lightbulbs with LED {consume little power / are widespread}

- When modified and in certain styles, they can also appear in subject position ((22), from UKWAC)

(22) Disposizioni testamentarie affidano alla Fondazione anche la cura di
Statements concerning the will put the Foundation also in charge of
pubblicare le memorie ...
publishing the memoire ...

Problems with GEN as an AoQ: Romance bare plurals II

- The A-generic construction works identically in English and Italian, and so do AoQ, but those Italian BP which are OK as subkect existential are marginal with AoQ, and out with GEN:

(23) a. ?Disposizioni testamentarie sono {sempre / spesso / raramente} una necessità
statement concerning the will are {always / often / rarely} a necessity

b. *Disposizioni testamentarie sono una necessità
statement concerning the will are a necessity

If GEN can bind the A-generic, why not a BP?

General Problems with Adverbs of Quantification

- Some AoQ do not scope over the indefinite:

  (24) A movie star marries exactly twice. $\neq$
  exactly two movie starts married (in exactly two separate occasions)

  Yet, *exactly two*+N seems to be a quantifier in all respects, so why not *exactly twice*?

- Unselective binding does not seem to go in the other direction (i.e. a quantifier in the DP does not seem to bind the event/situation)

  (25) Every soldier left early $\neq$
  Every soldier always left early

  Since *every* is assumed to QR, it would be in a position to bind an unselective variable at VP.

  Why there is there are no variables to unselectively bind in the VP?

Problems with AoQ in general: NPI / Different

- Licensing of downward entailing NPI: OK with Universal Dets, out with AoQ:

(26) a. **Every**/**No** [attempt that has **ever** had **any** degree of success] was done on-site. *Every/No* license the NPIs.
b. *An [attempt that has **ever** had **any** degree of success] was **always**/**never** done on-site. *Always/Never* does not.

- Licensing of *different/same*:

(27) a. **Every**/**No** kid got the same gift.
b. A kid **always**/**never** got the same gift. *not: same as the others*

(28) a. **Every**/**No** computational problem is {different / similar}
b. ??A computational problem is **always**/**never** {different / similar}

An alternative

- Binding the restrictor with an existential.

  (29) GEN x [∃x[dog(x) in s][x barks in s]

  (see de Swart 1991)
  But now the x in the nuclear scope is no longer directly bound in the restrictive part, so some additional mechanism is needed for e.g.

  (30) A dog with flies scratches itself.

- Binding x with ∃ fixes the problem with *different/same* (and maybe NEGPOSs), but it makes the problem of normality and number variability worse.

  (31) a. Dogs have four legs. *only normal ones*
  b. I saw dogs. *all*

Replacing GEN?

- Many of the problems stem from the fact that we do not want to analyze a sentence like (32a) just like (32b), i.e. as (32c)

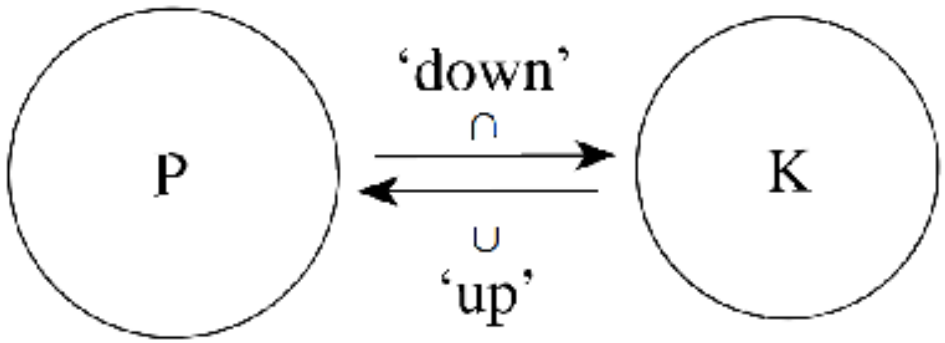
  (32) a. Dogs have 4 legs
  b. Dogs are common
  c. **4_legged**$'$(**dogs**^{k})

- And we need a non-kind account for the A-generic anyway.

  (33) A dogs is {*common / a mammal}

- The problems stems from a view of kinds which sees them as independent sortal objects — though linked to sets of intensional individuals, as in e.g. Chierchia 1998:

a. PROPERTIES KINDS



where properties are of type ⟨s, ⟨e, t⟩⟩ and kinds of type e

In and out of kinds

Yet, in actual generic sentences we seem to be constantly moving in and out of the kind domain.

(34) a. Every car sold in the USA undergoes crash tests.
b. [Every [car [which]^{o} is sold in the USA]^{k}]^{o} undergoes crash tests.

(35) a. You were unlucky! [*(The) animals that attacked you] are {rare / by now nearly extinct} *after some white rhinos charged you*
b. [(*The) Animals that attack man unprovoked] are {rare / by now nearly extinct}

Chierchia (1998): there is an invisible operator which goes from kinds to existentials over regular objects: the D(erived)K(ind)P(predication).

(36) I have sold [DKP([this kind of lamp]^{k})]^{o} many times.

But the DKP overgenerates: if it returns objects, (37) should be perfect just like with *this lamp*:

(37) a. ?Unfortunately I just crashed this kind of lamp.
b. ?This kind of lamp fell and broke.

Using subkinds

Proposal:

We can recover some of the function of GEN, with added flexibility, from a reevaluation of the way **subkinds** work.

(38)
a. Every dinosaur {walked South / died} *objects*
b. Every dinosaur {became extinct / had various subspecies } *subkinds*
c. Dinosaurs {became extinct / had various subspecies } *kinds*

We are getting increasingly ingenious at using kinds:

- McNally and Boleda (2004): modeling modification patterns;
- McNally (2014): linked to computational distributional semantic models (since they model 'generic' relation among words)
- Grimm and McNally (2015) explain *-ing* nominalizations (*running is healthy*) in term of kinds of events;
- Moltmann (2013) treats the semantics of abstract terms like *justice* in terms of 'kinds of tropes'.

Preliminary claim: every noun can refer to a set of subkinds

(39) a. every animal / mineral / medicine / discipline $\sqrt{}$KIND
b. every Peugeot 5008 / carriage return / Batman dubber ??KIND

Even the noun in (39b) can produce subkind via the KIND CONSTRUCTION (Wilkinson 1991; Wilkinson 1995; Zamparelli 1998), with generic *kind-nouns* (*kind, sort, type*), or with specific ones (e.g. *model, species, brand, genus, color, form, ...*)

(40) a. Every **type/kind of mallard** can become extinct / comes in various subspecies / can be widespread.
b. Every **kind of Peugeot 5008** can be rare / comes in different models / is made in at least 3 different countries these days.
c. Some **kinds of carriage return** move the line by a fraction of the previous line distance.

So in this case we are all too read to accommodate the existence of types of nouns, even very specific ones.

$\Rightarrow$ The fact that we do not do it in the absence of *kind* etc. might be due to the ease with which we can interpret these nouns at the object level.

Uniform subkinds allow a uniform analysis of BE

With a uniform subkind denotation, (41a) can be interpreted just like (41b,c).
Note: generics of the form "BP are BP" have some among the strongest truth conditions in the generic world (i.e. *all*)

(41) a. Misha is a dog — $\mathbf{m} \in \mathbf{dog'}^{<et>}$

b. {The pug / this rare dog} is a dog$^{<e^k t>}$ — $\mathbf{p}^k \in \mathbf{dog'}^{<e^k t>}$

c. Pugs are dogs — $\mathbf{p}^k \in \mathbf{dog'}^{<e^k t>}$

(42) a. “Féline" Peugeot 5008 are Peugeot 5008 all the same.

b. Semiotically, half-line carriage returns are carriage returns like any other.

The alternative: deriving subkind predication via instances

(43) Pugs are dogs = "All instances of the *pug*-kind are instances of the *dog*-kind"

But:

(44) a. *The “Féline" Peugeot 5008 is the Peugeot 5008.
b. "All instance of the (singular definite generic kind) ’Fèline’ P.5008 are instances of the (singular definite generic kind) P.5008"

(45) *The 2009 Peugeot 5008 and the 2015 Peugeot 5008 are the Peugeot 5008.

Exploring the Edge of Subkinds

Unlike plurals, subkinds cannot be counted directly: overlap problem (Carlson 1977)

(46) CONTEXT: Fido is a watch-dog and a collie, and he is the only dog in the room.

a. ??There are two kinds of dog in the room.
b. ??Two types of dog are sleeping in the room.

$\Rightarrow$ we must divide subkinds into *partitions*: sets of subkinds with no instances in common, which add up to the whole kind: *dogs-as-breeds, dogs-as-functional-animals, ...*
We can think of them as *criteria for categorization*.

(47) A is a **set of disjoint subkinds** of a kind B (PART(A,B)) iff:

i $A \subset \text{SUBKIND}(B) \wedge \bigsqcup A = B$
ii $\forall x^k[x \in A \rightarrow \neg\exists y^k[y \; in A \wedge y \neq x \wedge \exists z^o \Box[R(z,x) \wedge R(z,y)]]]$

Exploring the Edge of Subkinds

Choosing the right partition can be done by a contextual function *f*, from individual kinds to partitions (sets of kinds):

(48) $f_{<e^k,<e^k t>>}$ $x^k \rightarrow$ P:PART(P,SUBKIND(x))

(49) Three animals are rare = **rare**′(3(Pl(*f*(animal^k)))) *PL = plural op.*

One of the possible outcomes of *f*(A^k) is {A}, the trivial partition. This is a suitable argument for a ι operator in a Singular Definite Generic (see Zamparelli 1998 and, to a point, Dayal 2004)

(50) The tiger has stripes = **striped**′(ι(*f*(*tiger*^{k})))

The difficulty in obtaining the SDK in e.g. (51a) boils down to how easy it is to find a criterion for selecting the maximal subkind using *f*.

Minimal Subkinds

Key question:

Is it possible to find an x such that:

(51) a. $\exists y^{k}[x \in \textsc{subkind}(y)]$ *it has superkinds*
b. $\neg\exists x[\textsc{subkind}(x)]$ *but no subkinds*

Obviously, individuals have the second property, but do they have the first one?

Many examples in the literature of individuals which function just as mere 'representatives' of kinds, sometimes combining a high degree of specificity at the level of the kind with utter non-specificity at the level of the individual:

(52) *The horse* returned to America with Columbus.

(53) With Fido, I had *my first pet*.

(54) Now I have finally seen *the spotted owl*! *after seen a group of owls*

(55) Since I heard this from *a linguist*, I am inclined to take it as true.

‘Exemplars’ as the bottom limit of subkinds

Hypothesis

(56) The lower limit of (general) subkinds, or **minimal subkinds (MSK)** are entities called **exemplars** (semantic sort OK), which:

a. are intensional, like regular kinds;
b. accept predicates over individuals (*barking, smoking*, etc.) *provided the predicate applies to other (and possibly all) instances of the kind the exemplar stands for*
c. do not accept classic kind predicates such as *be widespread, common, coming in 3 sizes*
d. Unlike other subkinds, they have no overlap (since they are individuals)

Exemplars make Chierchia’s D(erived)K(ind)P(redication) unnecessary:

(57) a. [this kind of lamp]^{ok} is on sale in many shops.
b. I bought [this kind of lamp]^{ok} three times.

Exemplars as the bottom limit of subkinds

Exemplars are the functional connection between regular individuals and kinds (though ontologically, we might want to keep exemplars and individuals distinct).
Since we need a mechanism for subkind readings anyway, we can add them without additional interface machinery.

(58) A dog =

a. A free variable over individual regular individuals (type $<e^{o}>$) *or*
b. A free variable over individual subkinds (type $<e^{k}>$) *or*
c. A free variable over individual exemplars (type $<e^{ok}>$).

Note that (58b), which must be the meaning for (59a,b) given the presence of kind-selecting predicates, might require applying a partition (e.g. in (59a) *type* = *model*), so as not to pick overlapping values, whereas (58a,c), which have no overlap, do not. This might make the (58b) choice more marked than the others.

(59) a. [A new car type] is never designed from scratch.
b. Prof. Smith invented [a fast ANN processor].

Exemplars from proper names

Problem: if exemplars are object-like, they could be referred to by proper names, yet *prima facie*, proper names cannot be predicated of being kinds, even when we know what is their type/species:

(60) a. That is a rare [kind/species of bear]. *pointing to the brown bear Baloo*
b. *Baloo is a (rare) species of bear.
c. ?Baloo is a kind of bear.

(61) ??Fido is a kind of dog which is common.

Exemplars from proper names 2

But consider:

(62) a. Baloo is the [kind of bear you would expect to find in a Disney movie].
b. Lassie is the [kind of dog that first bites, then barks]
c. Marc is the [kind of person that does anything to emerge]

Why should these cases allow kindhood to be attributed to objects?

Proposal:

In (62) the predication is possible because the kind is exclusively defined by the behaviour of its individual token: provided Lassie bites before barking, he has satisfied all the necessary requirements to be in the kind. There is not need to go via *dog*. In other terms, (62b) could be replaced by:

(63) Lassie *exemplifies* (at the present world) the kind of dog that first bites, then barks.

Exemplars ‘stand’ for other individuals in their kind

- An exemplar can have a property only if this makes it more likely that the property is shared by other instances of that kind. Possibly, all the instances:

  (64) $\forall P \forall x^{ok}, y^{k}\ [(P(x) \wedge x \in MSK(y)) \rightsquigarrow \forall z^{o}[R(z,y) \rightarrow P(z)]]$

  “$\rightsquigarrow$" = increases the probability.

  (65) a. dog^{ok} has 4 legs
  b. ??dog^{ok} has 3 legs

- This is the proper place to add semantic restrictions on the what counts as ‘relevant individuals’ (e.g. only the adult females, only healthy dogs).

Using exemplars

Using exemplars with generic sentences: a first version.
We replace (66a) with (66b).

(66) A bird flies =

a. GEN x,s[**bird**$^{<e^o,t>}$)(x) at s][**flies**(x) in s]
For generically-all objects x and situations s such that x is a normal bird and the situation is suitable for flying, x flies at s

b. GEN x,s[$\exists$x[MSK(**bird**$^{<e^k,t>}$**)**(x) at s]][**flies**(x) in s]
For generically-all situations s such that there is an exemplar x of the kind bird and the situation is suitable for flying, x flies at s

Using exemplars avoids specifying that the bird has to be "normal" wrt. the kind.
Notice however that this requirement is not present in the *existential* reading: if I have *seen birds* I might have seen very peripheral specimens.

A-generics as existentials

- Assuming that *A dog* in an existential over minimal subkinds/exemplars:

  (67) A dog has four legs
  “There is at least one kind of dog which has 4 legs”
  (67) ??A dog has three legs
  “There is at least one kind of dog which has 3 legs”

- In reality, there is no kind of dog whose instances have systematically 3 legs (unless that kind is explicitely defined in terms of same property present in the nuclear scope: *Well, dogs which have 3 legs have 3 legs!*)
- the A-generic could then be an existential quantification: the universal import that one feels present in this type of assertions comes from what it means to attribute a property to an exemplar (i.e. generalizing it to other members of the kind)

Questions about exemplars 1

- **Q:** What about exemplars of mass nouns? Do they exist?
  They do, and the word is **samples**:

  (68) a. A foreign wine needs good marketing to be accepted in Italy.
  b. A white wine is served chilled. *a sample of w.w.*

  But:

  (69) a. {Knowledge / Courage} is important in life.
  b. *{A knowledge / a courage} is important in life.
  c. {A vast knowledge / a great courage} is important in life.

  (70) A {??kind / degree} of {courage / knowledge} is important in life.

  $\Rightarrow$ Maybe certain mass nouns have 'degrees' as equivalent of 'kinds', and no exemplars? (?)

Questions about exemplars 2

- **Q:** How do we get the difference between 'quasi-universal' and existential readings for singular indefinites (71) and bare plurals (72), and their variation with "temporal/SL" or "atemporal/IL" predicates?

(71)	a.	A dog was on my lawn.	✓∃,??∀
	b.	A dog is intelligent.	✓∃,✓∀
(72)	a.	Dogs were on my lawn.	✓∃,??∀
	b.	Dogs are intelligent.	*∃,✓∀

Revisiting the Nuclear/Restrictive scope distinction

- Quantification in the nuclear scope cannot range over exemplars.
- Quantification in the restrictive scope is free, but exemplars take precedence.

(73) must be a quantification over objects:

(73) A dog in under my desk. *not a property which can generalize*

(more needs to be said for languages like Italian, where the present tense can be generic or episodic)

Questions about exemplars 3

- **Q:** Are exemplars also plural?

(74) ?Loro sono il tipo di persona che farebbe tutto per emergere
They are the type of person who would do anything to emerge

- The question is related to the effect of having plural indefinites in A-generics, or conjunctions:

(75) a. Lions and tigers are prototypical carnivors
b. A lion/tiger is a prototypical carnivor
c. ??A lion and a tiger are prototypical carnivors

Cumulative predicates are fine:

(76) A lion and a tiger can interbreed.

The effect seems to be present even with simple numerals:

(77) Two lions {fight easily / ??have manes}

Plural exemplars and the conjunction effect: speculations

(78) a. ??A lion and a tiger are meat-eaters.
b. ??Two lions are meat-eaters. as A-generic

Assume relative genericity *á la* Ariel Cohen:

(79) a. A bird has feathers
b. ??A bird has a body

(80) Birds are a type of animals and
a. *Unlike other types of animals*, birds have feathers. *or*
b. Birds have feathers more than other animals who might have feathers, but do not.

All animals have a body, not all animals have feathers. Now:

(81) a. A lion is a meat-eater.
More than other comparable animals (esp.: other potential meat-eaters), a lion exemplar is a meat-eater.
b. A tiger is a meat-eater.
More than other comparable animals (esp.: other potential meat-eaters), a tiger exemplar is a meat-eater.

But *lions* and *tigers* are certainly in each other's comparison set. So, each one is undermining the other.

Habituals

(82) a. Mary smokes
b. ??Mary barks *She barked while dressed as a dog at a party*

This time, the problem is generalizing over the events referred to by the predicate.

Event kinds

Many of the arguments which prompted McNally and Boleda (2004) to have modifiers apply to subkinds extend to the verbal domain, once you assume that the 'kinds for events' are *ways*.

(83) a. Running is a way of moving.
b. Fidgeting is a way to stay calm.

- Landman and Morzycki 2003: in languages like Polish the same modifers are used for kinds and manners. Same in Italian:

  (84) a. Persone così (lit. 'people so' = 'people of this kind')
  b. Comportarsi così ('behave so' = 'behave this way')

  Following the intuition in Grimm and McNally (2015), we can assume that, with the correct morphological profile (e.g. imperfective morphology) verbs, too, can denote sets of event-kinds.

Event exemplars

If events have ways, is there an equivalent of a ‘minimal subkind’ for events?

- Consider a specific event, like the one described by (85)

  (85) Mary played the flute yesterday at 5.

- It could be an isolated fact, but it would also be see as the maximally specific way to display a *way* to do things.

  (86) Mary’s way to play the flute (yesterday, at five) is the best I know.

  (87) Mine today was the way to play the flute which gives the best sound with the least effort.
  Compare to: “Fido is the kind of dog which...”

  (88) You should play **so** *Pointing to Mary’s playing*

Event exemplars

- Following the reasoning applied above, event exemplars would be individual events which stand for a whole class.
- They can apply to participants only insofar this can be extended to other eventualities over the same participant.
- This gives the habitual reading.

(89) John smokes = $\exists e^{ok}[e \in \text{MSK}(\text{smoke}^{<e^k,t>}) \wedge \text{AGENT}(\text{John},e)]$

- **Q:** What about the stative/non-stative difference?

(90) a. Mary is a mother in many different ways *Do these remain statives?*
b. Mary is intelligent in several ways.
c. *Many is intelligent/a mother {*so* / like *that*!}

(91) a. ??How is Mary intelligent / a mother?
b. How is Mary singing?

What is the connection between 'being (a)temporal' and 'having a manner which can be bound'? Open question.

Combining nominal and verbal exemplars

- If we relax the requirement that event participants are the same individual to the requirement that they have to be of the same *type*, we can handle fully generic sentences.

(92) a. A bird flies =
$\exists x \exists e$ [$x \in \text{MSK}(\text{bird}^{<e^k,t>}) \wedge e \in \text{MSK}(\text{fly}^{<e^k,t>}) \wedge \text{AGENT}(x,e)$]

b. An exemplar of the type 'bird' is a participant in an exemplar of an event of 'flying'

- It follows from the semantics of exemplars that there must be more flying events having birds in them and more bird-tokens participating in flying events.
- The quasi-universal nature of characterizing sentences is captured not by the effect of a sentence-level operator like GEN, but from the combined effect of quantification over a type of individuals which requite for a property to be shared.

Some consequences

- Exemplars are intensional individuals, so generics can apply to individuals and events which do not exist in the world of evaluation.
- The quantificational variability can be placed where it belongs: in the predicate, specifically in the extent to which a single events implies that further events can take place;
- 'Normality' can likewise be derived from whether the property one exemplar has to possibility to transfer to others, e.g. to what extent a *penguin* is a good exemplar of *bird*.

Open question

Many. First and foremost:

- What about Bare Plurals? Are they pluralized subkinds, exemplars included?

  (93) a. dogs bark.
  $\exists x^{ok} \exists e^{ok}$ [$x \in$ PL(MSK(**bird**$^{<e^k,t>}$)) $\wedge$ $e \in$ MSK(**fly**$^{<e^k,t>}$) $\wedge$ AGENT(x,e)]
  b. 'There is a plural individual whose atoms are bird-exemplars which participates in an exemplar of barking'

- But what about:

  (94) Lions and tigers are meat-eaters.

  How does plurality affect the meaning of exemplars?

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