Linguistic strategies for the *on-line* construction of categories

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- ✓ To provide a preliminary account of
  - How on-line categorization processes are explicitly performed across languages
  - How context, lexicon and grammar concur to reach this goal

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  - How on-line categorization processes are explicitly performed across languages
  - How context, lexicon and grammar concur to reach this goal

- ➢ **Semantic description** of the function at issue, namely *context-dependent, exemplar-driven categorization*

- ➢ **Cross-linguistic survey**, of the types of linguistic constructions that may encode this function, based on a 70-language sample

Categories and categorization

→ Psycholinguistic studies: traditional view of categories as 'stable' concepts is **inadequate** (cf. *ad hoc categories* Barsalou 1983, 1991, 2003, 2010, Smith & Samuelson 1997)

→ Croft & Cruse (2004: 92): categories *"are inherently variable, and created on-line as and when needed"*

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→ Croft & Cruse (2004: 92): categories *"are inherently variable, and created on-line as and when needed"*

✓ All categories are the result of a process of **construal**, which is **contextually determined** (cf. *ad hoc concepts*, Wilson & Carston 2007, Carston 2010)

Context determines:

- The **aims** for which the category is construed
- The **prototypical members** of the category
- The **borders** of the category

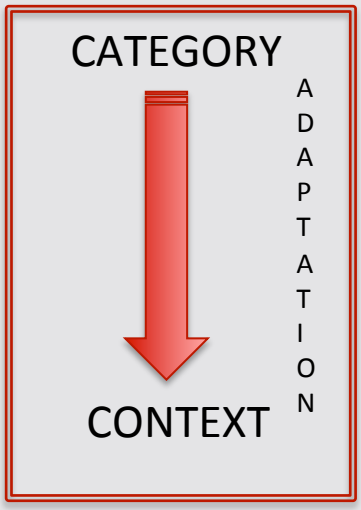
Categories and categorization

- ✓ Attention has been paid on how concepts and categories **adapt to** context: *broadening and narrowing* (lexical pragmatics: Wilson and Carston 2007, Carston 2010)

  e.g. *Holland is **flat*** vs. *the table surface is **flat***

  e.g. *my brother is a **lion*** vs. *that cat is a **lion***

  vs. *the **lion** roars in the forest*



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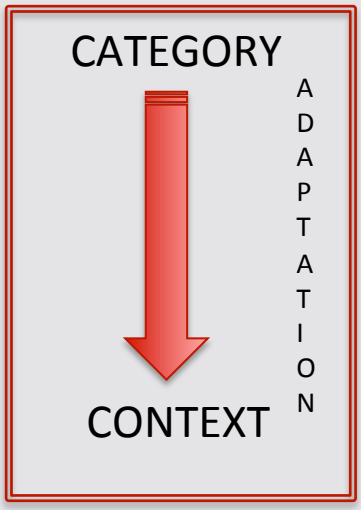

- ✓ We aim to study the opposite process, namely how categories are **abstracted from** context, typically starting from *exemplars* (cf. *ad hoc categories* Barsalou 1983 and onwards)

  e.g. *Consider Holland, Denmark, and suchlike places*

  depending on context → [FLAT COUNTRIES]
  depending on context → [BIKE FRIENDLY COUNTRIES]

Exemplar-driven categorization

Languages show explicit strategies bringing about the abstraction process and its **anchoring to context**

HOW?

Exemplar-driven categorization

Languages show explicit strategies bringing about the abstraction process and its **anchoring to context**

HOW?

Taking one or more **EXEMPLARS** as the starting point for the inference of a:

- ✓ **SET** — 1) recipe ingredients: *I need flour, milk, east and so on*
  → exemplars are entities occurring in combination
- ✓ **CLASS** — 2) quite activities that a 6-years old kid could enjoy:
  At home you may read a book, do some drawing or something like that
  → exemplars are equivalent alternatives
- ✓ **FRAME** — 3) at the restaurant: *As always you order, you pay, etc.*
  → exemplars are actions recurring in a schema

Exemplar-driven categorization

Exemplar-driven categorization constructions systematically refer to

- ✓ **Explicit Exemplar(s)**
- ✓ **Some further X*s* associated to Exemplar(s)** by virtue of sharing the same contextually relevant properties P
- ✓ **A superordinate category C** comprising Exemplar(s) and further X(s)

Exemplar-driven categorization

4) [..] a lump sum to be held by the town council, to be used as a form of grant, or financial support

for [low income families, students, unemployed, <u>etcetera]</u>,

on production of the relevant proof, erm, depending on the individual's needs, […].

(BNC, hyjS_meeting)

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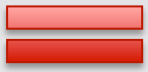
Exemplars$_{[\text{Low income families, students, unemployed}]}$

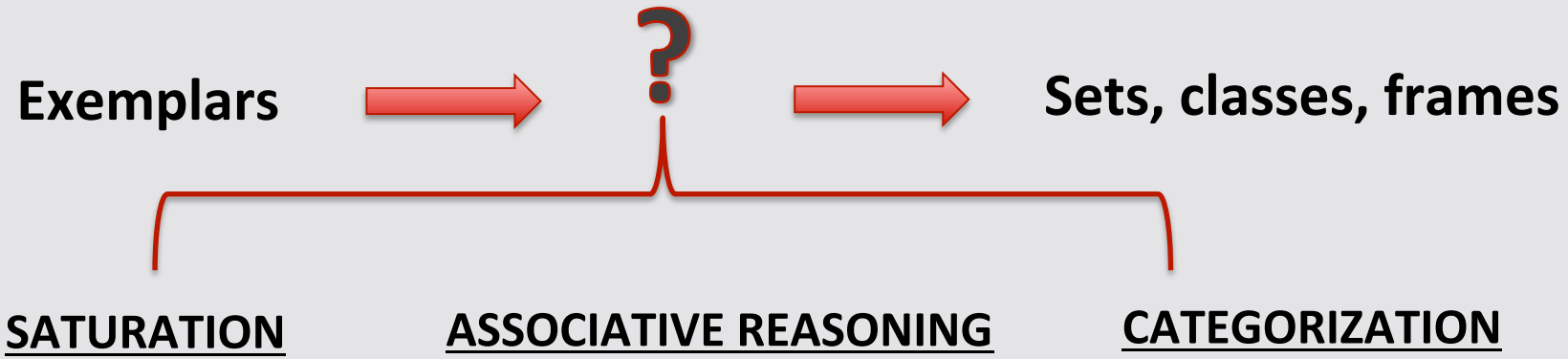
and **further X*s*** sharing with Exemplars the property **P**$_{[\text{needing financial help}]}$

which together constitute the **category C**$_{[\text{people needing financial help}]}$



[…] *financial support for low income families, students, unemployed, and other people needing financial help*

Exemplar-driven categorization



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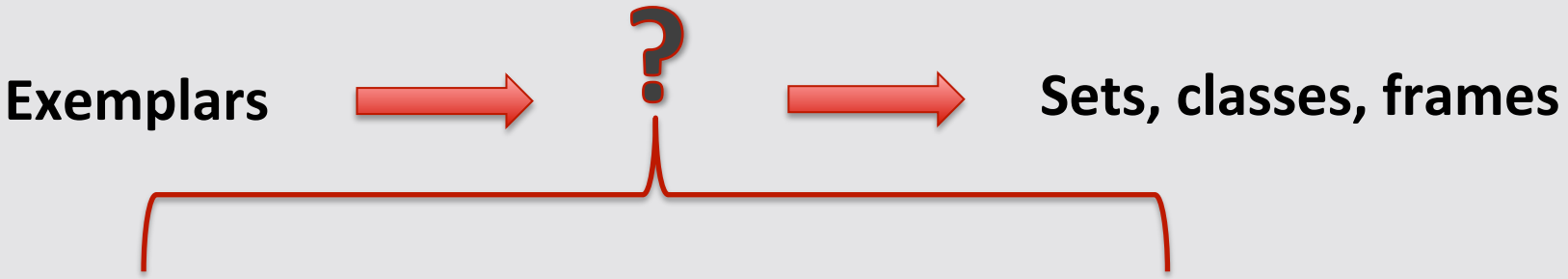

SATURATION **ASSOCIATIVE REASONING** **CATEGORIZATION**

- ✓ Acknowledgment of the existence of **further X(s) beside Exemplar(s)**

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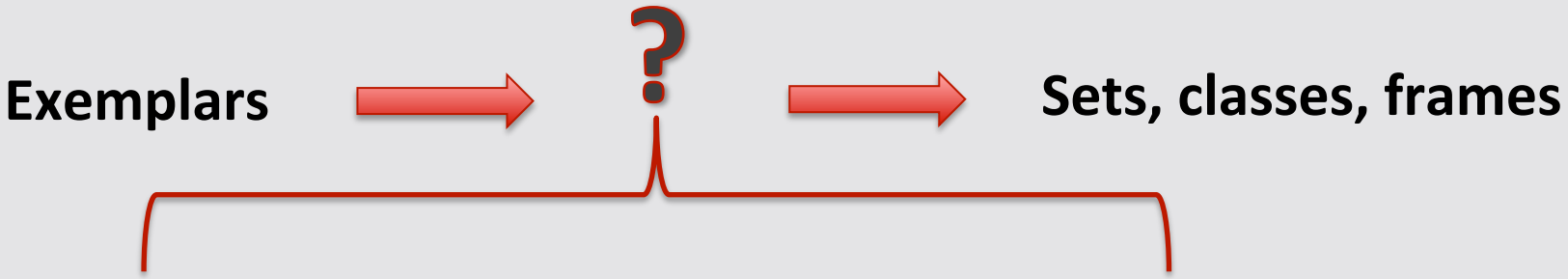

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CATEGORIZATION

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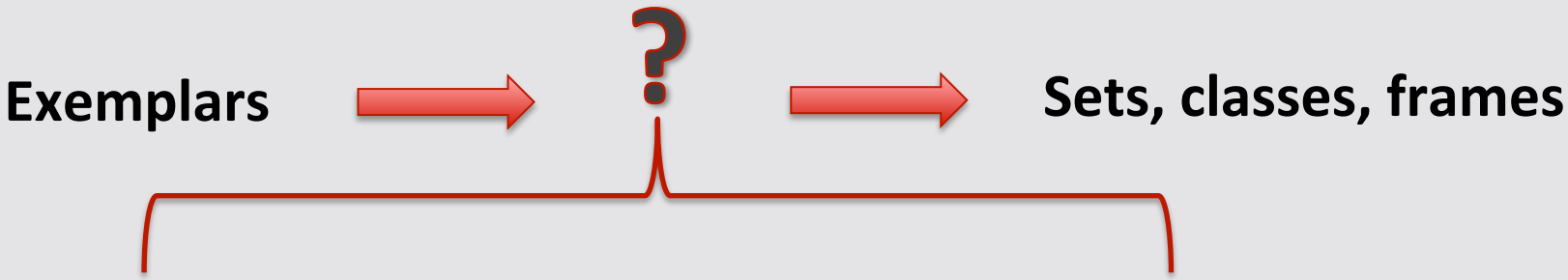

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CATEGORIZATION

- ✓ **Abstraction of a category C including Exemplar(s) and further X(s)** sharing the contextually relevant properties

Vagueness?

What needs to be identified are the **contextually relevant properties** shared by Exemplar(s) and Xs

No need to identify every single X belonging to category C

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… Does this necessarily lead to **VAGUE CATEGORIES?**

Vagueness and categorization

Voghera (2012: 354-358): ***intentionally vague categories***

"In queste costruzioni il parlante anziché indicare esplicitamente la referenza di un elemento, la esprime attraverso un **parallelismo, una similitudine o analogia** con uno o più membri ritenuti esemplari di un insieme o, per l'appunto, genere che è stato precedentemente nominato o è ricavabile contestualmente. In tal modo l'elemento viene identificato, se così si può dire, *in absentia* in quanto potenziale membro di un insieme […]

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così mentre lei fa quello io mi avvantaggio magari che ne so torno negli uffici ***e cose del genere*** *(LIP).*

"In altre parole il parlante si propone di fare cose che appartengono all'insieme delle attività che si possono ritenere analoghe a (o dello stesso genere di) 'tornare negli uffici', ma questo genere di cose appartiene ad una **categoria vaga di elementi"**

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THEREFORE

- ➢ **the identity of the members of C can be VAGUE, but the category itself is unambiguously definable on the basis of the contextually relevant property**

E.g. P = *needing financial help* –> C = *people needing financial help*
X(s)= unidentified members

Context and associative reasoning

5) '*[I] drank lots of **beer and sake and stuff like that**.'*

Context 1 → Last night, at a Japanese restaurant

Relevant property → alcoholic drink you may have at a Japanese restaurant

Truth conditions → X = shinshū wine, *X = RedBull

Context 2 → in my trip to Japan

Relevant property → typical Japanese drink

Truth conditions → X = green tea, *X = vodka

Context 3 → I = speaker who does not like wine (the hearer knows it)

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→ **Different contexts** lead to select **different Properties** as relevant**,** producing **different types of associative reasoning** and eventually **different categories**

Contexts and common ground

Dimensions of variation of contexts:

Croft & Cruse (2004: 102-103):

a) **Linguistic context:**
   - previous discourse (prior to the utterance)
   - immediate linguistic environment (co-text)
   - type of discourse (genre, register, field of discourse)

b) **Physical context** (on a perceptual basis)

c) **Social context** (social relations existing between the interlocutors)

c) **Stored knowledge** (regarding the speaker, the hearer and their background, habits, tastes, etc.)

What types of constructions?

Cross-linguistic survey reveals great variation:

- **Plurals**
- **Connectives**
- **Collective/classifying derivation**
- **Reduplication**
- **General extenders**

Plurals

ASSOCIATIVE PLURALS:

"Associative plural constructions consist of a noun X (typically of human reference […]) and some other material, most often an affix, a clitic or a word. The meaning of the construction is 'X and other people associated with X'" (Daniel & Moravcsik 2005)

6) **South Efate (Oceanic; Thieberger 2004: 353)**

--- *mana* is glossed as 'associative plural' and follows a noun to define an 'expected' group

e-sum	*ale*	*i=mai*	*lek*	*mama*	*mana*
LOC- house	okay	3sgRS=come	look	mother	ASSOC.PL

'Then he came and saw his mother and others.'

Hungarian (Uralic; Corbett 2000: 101)

János-ok 'more than one person called John' vs. *János-**ék*** 'John and associates' 'John and his group'

Plurals

ORDINARY PLURALS

7) **Makah (Southern Wakashan; Davidson 2002: 316ff.)**

- ✓ The ordinary plural clitic *=aɬ* (with allomorphs) indicates that the third person participant is plural, as in a).

a)

daʔuʼqsʔaƛitsaʼɬ	*hiʼhiʼɬcak*
daʔuʼ–qs–iƛ = ʼaƛ = s = aːɬ	[R]–*hiʼɬcaʼk*
accompany–in.vessel–PERF=TEMP=INDIC.1sg=3pl	PL–parent

‘I rode along with my parents (in the car, canoe, etc).’

Plurals

Ordinary plurals

7) **Makah (Southern Wakashan; Davidson 2002: 316ff.)**

- ✓ It also occurs in the "associative plural" construction in which the predicate containing the clitic combines with a singular proper name or kin term to mean: 'NAME and associates did X', as in b).

b)

wałš?alił	Maria
wał–šiλ = 'aλ = °i = ał	Maria
go.home–PERF=TEMP =INDIC.3sg=3pl	Maria

'Maria and her family went home.'

Plurals

Ordinary plurals

7) **Makah (Southern Wakashan; Davidson 2002: 316ff.)**

- ✓ Moreover, the same clitic can be attached to the proper name yielding the same meaning, as in c).

c)

dačaˈyiƛ̓eˈʔisaƛits	Maria*ʔaɬ*
dač–aˈyiƛ–ʼeːʔis=ʼaƛ=(b)it=s	Maria=*ʕaɬ*
look.in.on–enter.house.PERF–go.to=TEMP=PAST=INDIC.1sg	Maria=3pl

‘I just stopped by to look in on Maria and her family.’

Plurals

Ordinary plurals

8) **Cavineña (Tacanan; Guillaume 2004: 482)**

--- The ordinary plural suffix *-kwana* – exemplified in a) – can be used to refer to a set formed by the mentioned exemplar and other items associated with it, as in b)

a)

Shana-tirya-kware=tuna	*piya=**kwana***	*mariku=**kwana***	*jadya*
leave-COMP-REM.PAST=3PL(-ERG)	arrow=**PL**	bag=**PL**	and

'They left all their arrows and bags behind.'

b)

*Karetu=**kwana***	*ka-risi-ti*	*jadya*	*ju-atsu*	*i-ke*
cart=**PL**	REF-tie-REF	thus	be-SS	1SG-FM

ne-kemi-na-kwe…!

IMP.NSG-take.out-IMP.NSG

'After you prepare (lit. tie) the cart (*carts) and everything (the oxen, the load, etc.), come (dl) and pick me up…!'

Collective/classifying derivation

Collective and classifying derivational strategies:

9) **Kuuk Thayorre (Pama-Nyungan; Gaby 2006: 209)**

--- "speakers may add the suffix *=yuk* 'STUFF' to a noun in order to speak in general terms about a 'kind of thing', or to generalise their reference to include **things normally associated with the denotatum of the noun** in question, or to indicate **reference to type** rather than token" (Gaby 2006: 209)

-- *=yuk* is derived from the generic noun *yuk* (Gaby 2006: 642), which is used as a classifier to denote the class of trees and stick-like objects (e.g. cigarettes), but also a somewhat eclectic collection of (typically elongated) 'things' (including cyclones, planes, microphones, etc.)

minh	*ulp*	*ngancnhan*	*reeka-rr,*
meat(ACC)	DEM:ADR.PRX	1sg:EXCL	give-PL.PF
*ngat=**yuk***	*reeka-rr*	*ngancnhan*	
fish(ACC)=STUFF	give-PL.PF	1sg:EXCL	

'[they] gave us some meat and fish or whatever'

Collective/classifying derivation

Collective and classifying derivational strategies:

10) **Italian (Romance; personal knowledge)**

--- The collective suffix *-ame* can combine with human referents to yield the meaning "X and associates"

Dire che la Boldrini è uguale a Mastella, al figlio di Bossi o al ***berluscon-ame*** *è una violenza ideologica che non porta da nessuna parte*

'to say that Boldrini is the same as Mastella, as Bossi's son or as **Berlusconi &co.** is an ideological violence that does not lead anywhere'

(http://forum.gamberorosso.it/)

Reduplication

Reduplication:

11) **Turkish** (Altaic; Göksel and Kerslake 2005: 91-92)

--- *M*-reduplication is commonly employed to generalize the concept denoted by a specific word or phrase in order to include similar objects, events or states of affairs

Eve çat kapı bir alıcı geldi, ***odalarí modalarí*** *dolaştı.*

'Today a potential buyer came without notification, and looked at the ROOMS, ETC.'

Reduplication

Reduplication:

12) **Lao** (Kam-Tai; Enfield 2007)

--- A V-N sequence is repeated, substituting the N in the repeated phrase with something semantically related (usually, a synonym or antonym):

man2	*pajø*	*sùù4*	*song5*	*sùù4*	*sùa4*
3.B	DIR.ABL	buy	trousers	buy	shirt

'He (went and) bought clothes (lit. trousers and shirt).'

--- A generic, default echo-formative strategy, where the complement element of the repeated phrase is substituted with the indefinite inanimate pronoun *ñang3* 'something, what, whatever':

man2	*pajø*	*sùù4*	*song5*	*sùù4*	*ñang3*
3.B	DIR.ABL	buy	trousers	buy	INDEF.INAN

'He (went and) bought trousers and so forth.'

Connectives

Special connectives:

Non-exhaustive connectives (aka “representative conjunction” Haspelmath 2007: 24; “enumerative coordinators”, Stassen 2000: 5).

13) **Koasati** (Muskogean; Kimball 1991)

akkámmi-t *ow-i:sá-hci* *hahci-f-**ó:t*** *oktaspi-f-**ó:t***

be.so-CONN LOC-dwell.PL-PROG river-in-EX swamp-in-EX

kámmi-fa

be.so-in

‘So they live in rivers and in swamps **and in suchlike places**.’

Connectives

Special connectives:

Non-exhaustive connectives

14) **Japanese (isolate; Kuno 1973: 115)**

--- *-ya* between nouns implies that the linked items are examples taken from a larger group of items

*[Biiru-**ya** sake-o]*$_{\text{drinks}}$ *takusan nomimashita.*

beer-and sake-ACC lots drank

'[I] drank lots of beer and sake **and stuff like that**.'

- Italian *piuttosto che* (Mauri & Giacalone Ramat, in press)

Connectives

Ordinary connectives: in some languages, the ordinary connective may be used without a connective function (e.g. being attached to just one noun) to indicate 'NOUN and things like that'

15) **Martuthunira** (Pama-Nyungan; Dench 1994: 72; 98)

The *-thurti* suffix functions as a noun phrase conjunction and is typically attached to both nominals in the conjoined expression, as in a). When attached to just one nominal, reference is made to objects in a similarity relation to the mentioned exemplar, as in b).

a) *Nganarna* *puliyanyja-ngara-thurti* *jantira-ngara-thurti*
1PL.EXC old.man-PL-CONJ old.woman-PL-CONJ
jalurra-a *nhawu-layi.*
dance-ACC watch-FUT
'We old men and old women will watch the dance.'

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b) *Ngayu-rru* *mulhaa-lalha,* *puuthuni-marta-ma-lalha*
1SG.NOM-NOW sharpen-PAST point-PROP-CAUS-PAST
warrirti-i, *karntara-**thurti**-lu* *manta-lalha,* *panyu-ma-l.yarra.*
spear-ACC sinew-CONJ-EFF bind-PAST good-CAUS-CTEMP
'Now I sharpened it, fixed a point on the spear, bound it up with **sinew and stuff**, making it good.'

General extenders

Analytic constructions: e.g. so-called *general extenders*

"the general extender has been treated as a form that indicates additional members of a list, set, or category. The general assumption has been that these expressions combine with a named exemplar (or exemplars) […] some non-specific form of reference" (Overstreet 1999: 11, cf. also *vague category identifiers* Channel 1994)

It was wonderful. It was like a drive through Jurassic Park ***or something*** (from Overstreet 1999: 119)

General extenders

General extenders:

These constructions have the following tripartite abstract template. One of the elements in this template may be missing:

Connective +	Indefinite element/generic noun +	Item encoding similarity
or	*anything*	*(like that)*
and	*stuff*	
and		*the like*
and		*such*
or	*what*	
or	*whatever*	
…		

General extenders

General extenders:

While in English the connective is always present, there are languages in which it is missing

16) **Jamsay (Niger-Congo, Dogon; Heath 2008: 273)**

--- An expression meaning 'what resembles it' combines with a given exemplar to construct a category based on that exemplar. No connectives are present in the expression.

íjé	[àrá:jô:	bé⇒]	
today	[radio	**Pl**]	
[cɛ̀:	kó	tímé-sà-Ø	bé⇒]
[thing.L	NonhO	resemble-Reslt-Ppl.Nonh]	Pl]
kár^{n}-á:r^{n}à-m		yɔ́≡kɔ̀	
do-Habit-Ppl.Pl		exist≡be.Nonh	

'Today there are those who do the radio and what resembles it (=and so forth).' **2004.3.20**

General extenders

General extenders:

There are even languages in which one single element of the template combined with an exemplar is sufficient to trigger an instance of exemplar-driven categorization

17) **Cupeño (Uto-Aztecan, Cupan; Hill 2005: 221)**

--- The indefinite element *ishmi'i* ('something') combined with a noun or an adjective serves to extend its reference to include elements contextually associated with it

a)	*Axwa-'aw*	*pe-qal*	***ishmi'i***	*qaawi-sh.*	
	ODEM-AT	3S-lie	something	die-NPN	
	'There lay something dead.'				
b)	*Mu=ku'ut*	*pe-meqa-qal*	*ivi-y*	***ishmivi-y***	*qingi-ch-i.*
	and=REP	3S-kill-PIS	this-O	something-O	squirrel-O
	'And it is said he used to kill these squirrels and stuff.'				

Tendencies and generalizations?

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May **diachrony** shed light on the observed cross-linguistic variation?

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Preliminary results….

Structural variation and type of context

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Structural variation and type of context

Do the structural differences between the various construction types discussed here correlate with **access to different aspects of context?**

→ Associative (and ordinary) plurals tend to correlate with the exemplar-driven categorization of **'expected'** sets or groups (a given individual and his/her family, his/her companions, etc.), i.e. of socially more stable entities whose identification appears to be **less dependent on the linguistic context** than, say, the identification of "things to do on a sunny Sunday afternoon".

→ *Berluscon-**ame*** → requires knowledge of the context 'ITALIAN POLITICS' to be interpreted

Structural variation and type of context

On the contrary, other strategies (e.g. connectives, general extenders) generally require **access to the linguistic context** (in the sense of Croft & Cruse 2004), i.e. either to the previous discourse (prior to the utterance) or to the immediate linguistic environment (co-text), in order to determine the properties of the named exemplar upon which the category is built through similarity reasoning.

They live in rivers (X) and in swamps (X) ***and in suchlike places:***

- ✓ if *they* = 'bacteria that live in water' → *suchlike places* = swimming pools, etc.
  Property of X's on which the similarity reasoning is based: water
- ✓ if *they* = 'frogs' → *suchlike places* = ponds, *sea
  Property of X's on which the similarity reasoning is based: freshwater

Structural variation and type of abstraction

Different structural properties of the construction also correlate with **different outputs, i.e. different types of categorization:**

Structural variation and type of abstraction

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→ **Disjunctive-like connectives are typically used to abstract a CLASS of entities of which the named exemplar is just one possible member (not necessarily corresponding to the real state of affairs)**

I came to class but they have a bomb threat ***or something*** (Overstreet 1999: 6)

→ class: "events that keep students out of their classroom" (fire drill, etc.)

Cross-linguistic variation and diachrony

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- ✓ Derivational strategies (e.g. *-yuk* in Kuuk Thayorre) may derive from generic nouns (a constituent element of general extenders).
- ✓ The elements forming analytic constructions such as general extender constructions are also attested alone with the same function. This might suggest diachronic connections from more transparent constructions to more opaque (or elliptical) constructions.
- ✓ Associative plurals are often limited to human referents because they originate from 3° person plural human pronouns or other expressions referring to humans (e.g. *people*): e.g. African American English: *Felicia nem done gone* 'Felicia and her friends/family/associates have gone already'.

Cross-linguistic variation and diachrony

The few data discussed here are suggestive of possible diachronic links between different strategies:

- A case is attested in which an associative plural evolves into a general extender: Japanese *nado* 'etcetera, and so on' is an independent morpheme occurring at the end of non-exhaustive lists. This form, however, was attested in Classical Japanese as a bound morpheme *-nado* and had the function of a similative plural (representative plural, Vovin 2003: 40)

18)
Classical Japanese (Vovin 2003: 40)
*wabi-uta-**nado*** *kak-ite*
grieve-song-**REPR** write-SUB
'He wrote grieving songs AMONG OTHER THINGS.'

19)
Modern Japanese (Chino 2001: 43-44)
*… resutoran ya disuko ya eiga-kan **nado***
restaurant and disco and movie-building and.the.like
'(In this area there are) restaurants, discos, movie theaters etc.'

Cross-linguistic variation and diachrony

The ordinary plural *-kwana* in Cavineña, which also has an associative interpretation, appears to derive from and indefinite element signalling uncertainty:

20) "The particle *=kwana* 'UNCERTain' indicates that the speaker is uncertain of the reference/property/state/event/etc. expressed by a constituent. The speaker makes a guess of what he thinks is the likely referent/property, etc. but leaves open the possibility that this might be different." (Guillaume 2004: 692)

*E-iya-u=**kwana**=ama*	*=mi-raA*	*=ekwana-ja?*
POT-put-POT=UNCERT=NEG	=2SG-ERG	=1PL-DAT

'Couldn't you leave (lit. put) it (your tape recorder) with us or something?'

→ *An instance of a strategy for constructing ad-hoc categories developing into an ordinary plural?*

Next steps

- ✓ **Wider cross-linguistic research**
- ✓ **Diachronic typology**

→ **To be integrated by:**

- ✓ **In-depth corpus-based studies**
- ✓ **Psycholinguistic evidence**

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