The independence of instance and subkind countability

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15th International Conference on the Structure of Hungarian

August 26th 2021, 9:40-10:20, University of Pécs

Introduction

- Language has two sorts of countability: Instance and subkind.
- The two most popular dogs are
  1. Toto and Lassie. *instances of the dog species (dog specimens)*
  2. Labradors and bulldogs. *subkinds of the dog species (dog breeds)*
- Sutton & Filip (2016, 2018): Both sorts of countability are licensed by disjointedness between entities that can count as one.
- Appealing to disjointedness is challenged by cases where the two sorts of countability do not pattern together.

Introduction

- Claim: Subkind-countability is not licensed by disjointedness.

1. sl.4-13: Challenges to disjointedness.
2. sl.14-38: Formalize and modify the analyses of Carlson (1980:§6.1) and Grimm & Levin (2017).
3. sl.39-47: Certain differences between Hungarian and English are correlated with the former having general number.
   - In the sense of Corbett (2000), Paul (2012).
4. sl.48-56: Subkind-countability is licensed by conceptual well-foundedness.

Background: Object mass nouns

- In English, object mass nouns (*ammunition*) cannot count instances or subkinds unless combined with classifiers (*unit*, *kind*).
  - (Cowper & Hall 2012:§3.2.2, Rothstein 2017:§4.6,
    Grimm & Levin 2017, Sutton & Filip 2018)

1. What fell on the floor was two
   {bullets, #ammunitions, units of ammunition}. *instances*
2. Hollow-point and soft-point bullets are our two best-selling
   {bullets, #ammunitions, kinds of ammunition}. *subkinds*

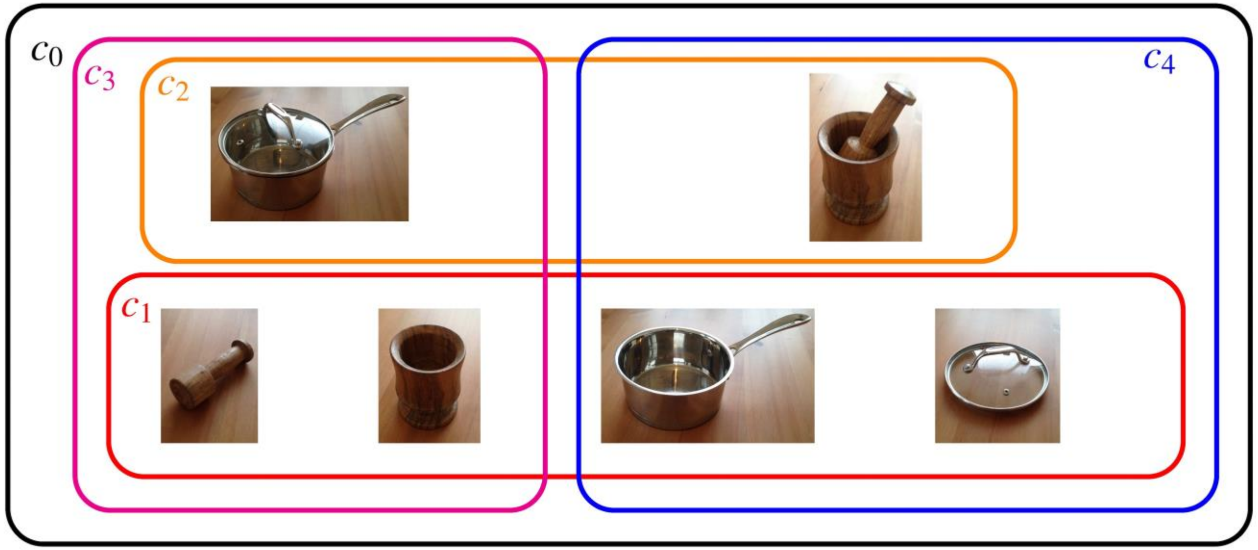
Sutton & Filip (2016, 2018)

- Sutton & Filip: Object mass nouns $_{\text{(in English)}}$ lack both sorts of countability due to being unable to resolve overlap.

1. *Kitchenware* cannot count instances due to being unable to resolve overlap between instances that can count as one.
    - e.g. a mortar and pestle and the mortar (2016).

Sutton & Filip (2016, 2018)

- In context c_2, the mortar and pestle count as one unit of kitchenware.
- In c_1, the mortar counts as one unit of kitchenware.
- These two instances of kitchenware overlap and count as one in different contexts.



(Sutton & Filip 2016:fig.1)

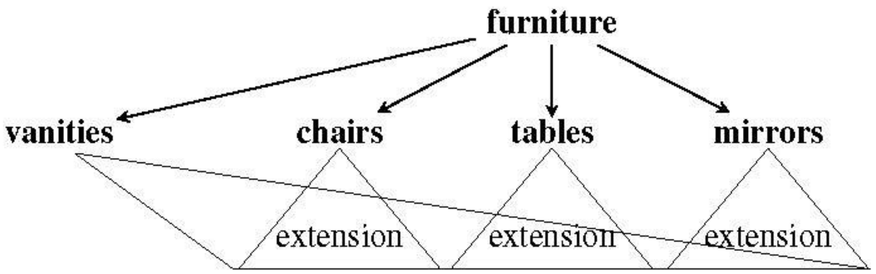
Sutton & Filip (2016, 2018)

- Sutton & Filip: Object mass nouns $_{\text{(in English)}}$ lack both sorts of countability due to being unable to resolve overlap.

1. *Kitchenware* cannot count instances due to being unable to resolve overlap between instances that can count as one.
   - e.g. a mortar and pestle and the mortar (2016).
2. *Furniture* cannot count subkinds due to being unable to resolve overlap between kinds $_{\text{(in a level of categorization)}}$ that can count as one.
   - e.g. vanities and chairs (2018).

Sutton & Filip (2016, 2018)

- Some chairs are parts of vanities.
- Such chairs cause overlap between chairs and vanities as kinds.



(Sutton & Filip 2018:fig.6)

Challenge to disjointedness

- Sutton & Filip: Object mass nouns (in English) lack both sorts of countability due to being unable to resolve overlap.
- Appealing to disjointedness is challenged by two cases where the two sorts of countability do not pattern together.

	instances	subkinds	
1. *student*	yes	no	(Kwak 2012)
2. *lőszer* ‘ammunition’	no	yes	

Challenge to disjointedness: *Student*

1. Two students are popular, namely
   a. Jack and Jade. *instances*
   b. # juniors and seniors. *subkinds* (cf. Kwak 2012)
2. (Two kinds of students are popular, namely juniors and seniors.)

- *Student* is count, so Sutton & Filip (2018) would say that
- It is interpreted relative to contexts that resolve overlap between kinds of students.
- Overlap should not prevent the subkind-countability of *student*, so
- Appealing to disjointedness does not explain the infelicity of (1b).

Challenge to disjointedness: *Lőszer*

- *Lőszer* ‘ammunition’ can count subkinds but not instances.

1. \# Két lőszert számoltam. (Erbach 2019:ex.6.32)
   two ammunition$_{acc}$ count$_{1.sg.pst}$
   × ‘I counted two pieces of ammunition.’
2. (Két darab lőszert számoltam.) *darab* ‘piece’ (ibid.)
3. Két lőszert nem árulok: üreges golyókat es lágypontos golyókat.
   two ammo$_{acc}$ no sell$_{1.sg}$: hollow.point bullet$_{pl.acc}$ and soft.point…
   √ ‘I do not sell two (kinds of) ammunition: hollow-point bullets…’

Challenge to disjointedness: Hungarian

- *Lőszer* ‘ammunition’ can count subkinds but not instances.
- The same goes for *üvegáru* ‘glassware’ and *ruházat* ‘apparel’.
- An appeal to disjointedness might posit that
- Object mass nouns in Hungarian, not English, are interpreted relative to contexts that resolve overlap between subkinds.
  - (In a given level of categorization.)
- But this does not predict which languages should pattern with Hungarian or English.

Challenge to disjointedness: Full picture

			instances	subkinds	
1.	*student*		yes	no	(sl.10)
2.	*lőszer*	‘ammunition’	no	yes	(sl.11)
	üvegáru	‘glassware’			
	ruházat	‘apparel’			
3.	*ammunition*		no	no	(sl.4)

- The subkind-countability in (1-2) is unexplained by Sutton & Filip’s (2018) appeal to disjointedness.
- It is explained by our analysis of subkind-countability, which builds on the analyses of Carlson (1980) and Grimm & Levin (2017).

Previous analyses: Carlson (1980)

- A noun can count subkinds only if

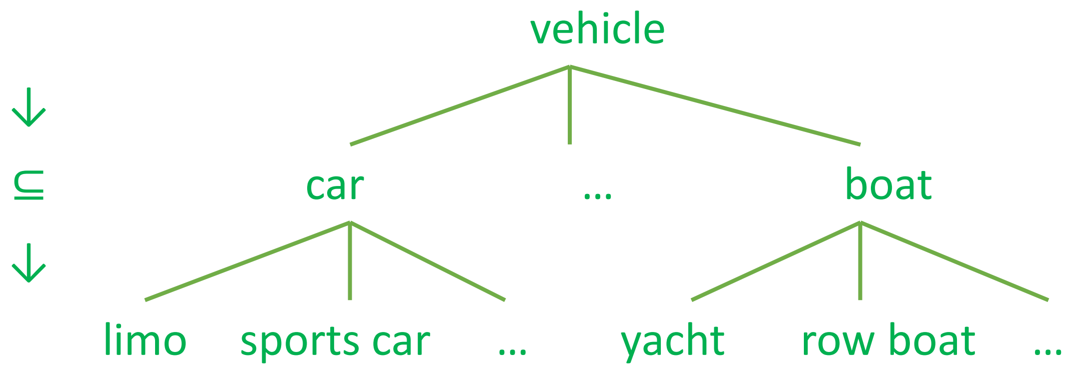
1. Carlson (1980): The speaker knows nouns that name subkinds.

- Many {virtues, #courages} (§7, ex.109)
- Predicted for speakers who know nouns for kinds of virtue (e.g. *honesty*) but not of courage.

Previous analyses: Grimm & Levin (2017)

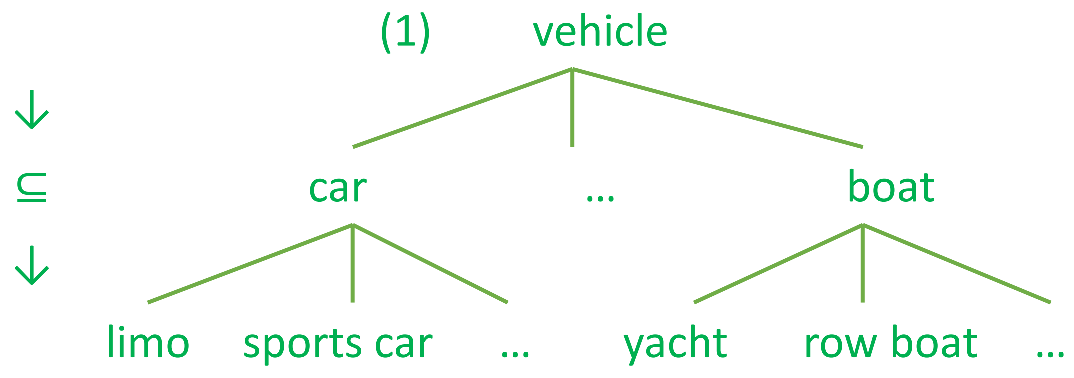
- A noun can count subkinds only if

1. Carlson (1980): The speaker knows nouns that name subkinds.
2. Grimm & Levin (2017): It heads a taxonomy. (in the sense of Murphy 2002)
    1. vehicles √ ‘kinds of vehicles’



Previous analyses: Grimm & Levin (2017)

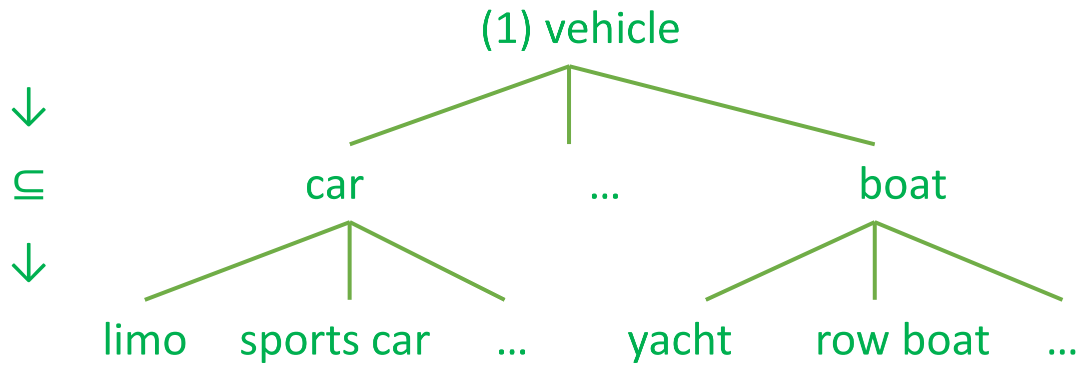
1. The sub-element relation is transitive.
   1. Every limo is a car.
   2. Every car is a vehicle.

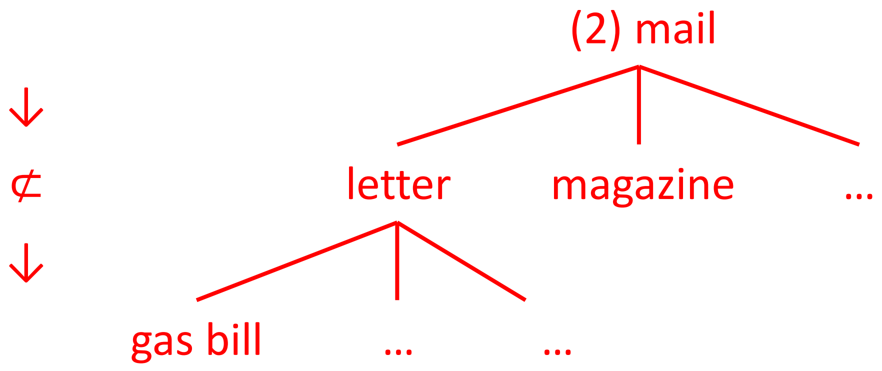


Previous analyses: Grimm & Levin (2017)

- A noun can count subkinds only if

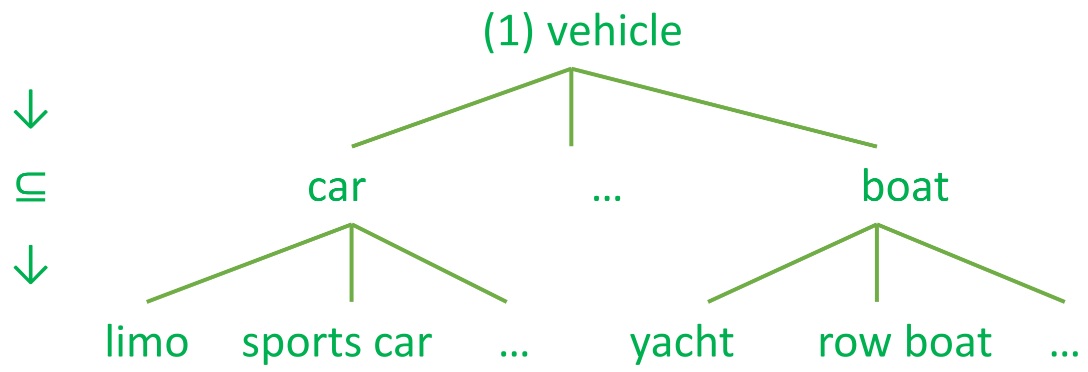
1. Carlson (1980): The speaker knows nouns that name subkinds.
2. Grimm & Levin (2017): It heads a taxonomy.
   1. vehicles √ 'kinds of vehicles'
   2. # mails × 'kinds of mail'

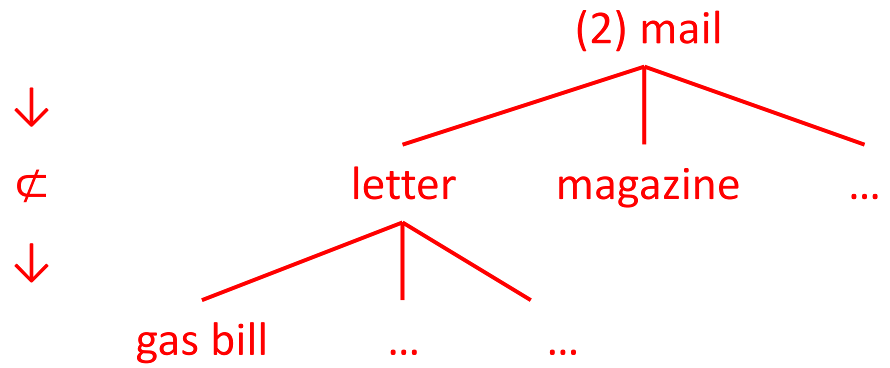




Previous analyses: Grimm & Levin (2017)

1. The sub-element relation is transitive.
   1. Every limo is a car.
   2. Every car is a vehicle.
2. The sub-element relation is not transitive.
   - Not every magazine is mail.
   - A magazine that is not being delivered is not mail.





Previous analyses: Criticism

- A noun can count subkinds only if

1. Carlson (1980): The speaker knows nouns that name subkinds.
2. Grimm & Levin (2017): It heads a taxonomy.

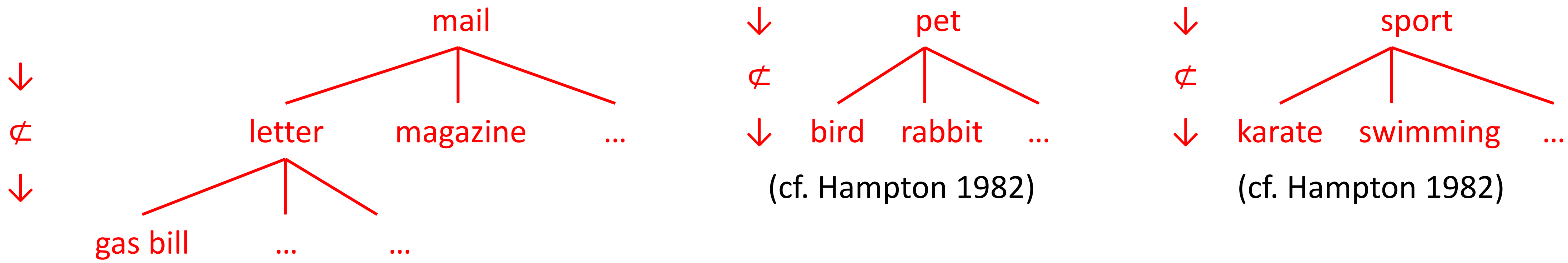
- (1) has a limitation, (2) an incorrect prediction.

a. (1) does not account for *furniture* being unable to count subkind for speakers who know nouns for kinds of furniture (e.g. *chair*).
    - # If there's one furniture I can't stand, it's chairs.
      (cf. Cowper & Hall 2012:ex.8c, e)

b. (2) incorrectly predicts *pet*, *sport* to lack subkind-countability.

Previous analyses: Criticism

- G&L (2017): A noun can count subkinds only if it heads a taxonomy.
- Incorrectly predicts *pet*, *sport* to lack subkind-countability.
  1. # mails × ‘kinds of mail’
  2. The next **two pets** [...] are birds [...] and rabbits (Refinetti 2016:618)
  3. Karate and swimming? [...] which **two sports** you would put together [y]
     - Karate used for violence is not sport.



Previous analyses: Criticism

- A noun is subkind-countable only if

1. Carlson (1980): The speaker knows nouns that name subkinds.
2. Grimm & Levin (2017): It heads a taxonomy.

- (1) has a limitation, (2) an incorrect prediction.
- These are remedied by formalizing and modifying an integrated analysis.

Previous analyses: Formalization

- N is a noun in language L whose intension under the instance reading is $[\![_{\text{inst}}\ \text{N}]\!]$. N can count subkinds iff
    1. $[\![_{\text{inst}}\ \text{N}]\!]$ is partitioned by a (non-singleton) set of properties $\mathcal{R}$ s.t.
    2. every Q $\in \mathcal{R}$ is denoted by a noun in L

a. *Vehicle* can count subkinds because English has enough nouns to denote properties in a set that partitions $[\![_{\text{inst}}\ \text{vehicle}]\!]$. (sl.15)

- e.g. *car*, *boat* (sl.15)

Previous analyses: Formalization

- N is a noun in language L whose intension under the instance reading is $[\![_{\text{inst}}\ \text{N}]\!]$. N can count subkinds iff
  1. $[\![_{\text{inst}}\ \text{N}]\!]$ is partitioned by a (non-singleton) set of properties $\mathcal{R}$ s.t.
  2. every $Q \in \mathcal{R}$ is denoted by a noun in L

a. *Vehicle* can count subkinds because English has enough nouns to denote properties in a set that partitions $[\![_{\text{inst}}\ \text{vehicle}]\!]$. (sl.15)

b. *Mail* cannot count subkinds because English lacks enough nouns to denote properties in a set that partitions $[\![_{\text{inst}}\ \text{mail}]\!]$. (sl.17)

- $[\![_{\text{inst}}\ \text{magazine}]\!]$ cannot be in $\mathcal{R}$ because not every magazine is mail. (sl.18)

Previous analyses: Formalization

- N is a noun in language L whose intension under the instance reading is $[\![_{inst}\ N]\!]$. N can count subkinds iff
  1. $[\![_{inst}\ N]\!]$ is partitioned by a (non-singleton) set of properties $\mathcal{R}$ s.t.
  2. every $Q \in \mathcal{R}$ is denoted by a noun in L

a. *Vehicle* can count subkinds because English has enough nouns to denote properties in a set that partitions $[\![_{inst}\ vehicle]\!]$. (sl.15)

b. *Mail* cannot count subkinds because English lacks enough nouns to denote properties in a set that partitions $[\![_{inst}\ mail]\!]$. (sl.17)

c. *Courage* is predicted to not be able to count subkinds for speakers who do not know nouns for kinds of courage. (sl.14)

Previous analyses: Formalization

- N is a noun in language L whose intension under the instance reading is $[\![_{\text{inst}}\ \text{N}]\!]$. N can count subkinds iff
    1. $[\![_{\text{inst}}\ \text{N}]\!]$ is partitioned by a (non-singleton) set of properties $\mathcal{R}$ s.t.
    2. every $\text{Q} \in \mathcal{R}$ is denoted by a noun in L
- This integrated analysis is greater than the sum of its inspirations; it predicts *student* to lack subkind-countability. (sl.10)
- *Student* cannot count subkinds because English lacks enough nouns to denote properties in a set that partitions $[\![_{\text{inst}}\ \text{student}]\!]$.
- English has nouns like *junior* and *senior*, but no noun counterparts of *1st grader* or *BA student*.

Previous analyses: Formalization

- N is a noun in language L whose intension under the instance reading is $[\![_{inst}\ \mathrm{N}]\!]$. N can count subkinds iff
    1. $[\![_{inst}\ \mathrm{N}]\!]$ is partitioned by a (non-singleton) set of properties $\mathcal{R}$ s.t.
    2. every $Q \in \mathcal{R}$ is denoted by a noun in L

1. Inherits the incorrect prediction of Grimm & Levin (2017). (sl.20)
2. Incorrectly predicts nouns like *meat* to lack subkind-countability.

- Remedying these results in our alternative analysis of subkind-countability.

Analysis: *Meat*

- N is a noun in language L whose intension under the instance reading is $[\![_{inst}\ N]\!]$. N can count subkinds iff
  1. $[\![_{inst}\ N]\!]$ is partitioned by a (non-singleton) set of properties $\mathcal{R}$ s.t.
  2. every $Q \in \mathcal{R}$ is denoted by a noun in L
- *Meat* can count subkinds: Two meats, namely beef and pork.
- *Meat* fails the condition: It ranges over sums of beef and pork, but no noun that names a kind of meat ranges over such sums.
- Thus, $[\![_{inst}\ \text{meat}]\!]$ is not partitioned by a set of properties that are named by English nouns.

Analysis: *Meat*

1. ⟦$_{inst}$ beef⟧ = [w_1 → {🥩}]
2. ⟦$_{inst}$ pork⟧ = [w_1 → {🍖$_1$, 🍖$_2$, 🍖$_1$ ∨ 🍖$_2$}]

- ⟦$_{inst}$ pork⟧$_{w1}$ is cumulative, following the standard analysis of mass nouns having cumulative extensions.
  - (Quine 1960:§19, Link 1983, Krifka 1989, 2007)

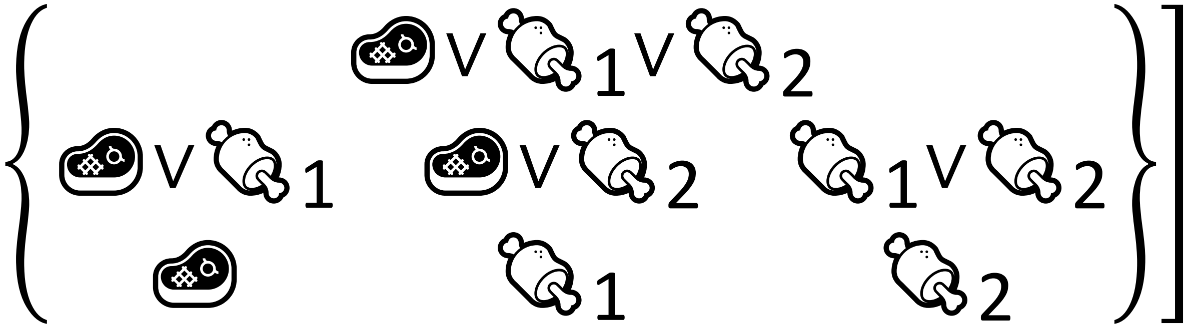
Analysis: *Meat*

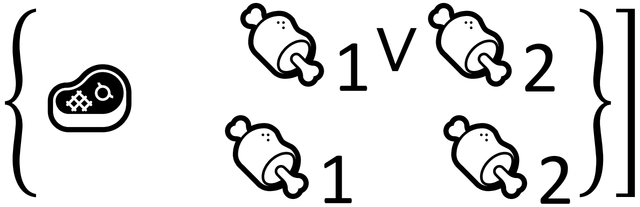
1. $[\![_{\text{inst}}$ beef$]\!]$ = [w$_1$ → {🥩}]
2. $[\![_{\text{inst}}$ pork$]\!]$ = [w$_1$ → {🍖$_1$, 🍖$_2$, 🍖$_1$∨🍖$_2$}]
3. $[\![_{\text{inst}}$ meat$]\!]$ = [w$_1$ → {🥩∨🍖$_1$∨🍖$_2$, 🥩∨🍖$_1$, 🥩∨🍖$_2$, 🍖$_1$∨🍖$_2$, 🥩, 🍖$_1$, 🍖$_2$}]

- $\mathcal{R}$ partitions P only if every instance of P instantiates some Q ∈ $\mathcal{R}$
- A set consisting of (1-2) does not partition (3) due to the sums of beef and pork (e.g. 🥩∨🍖$_1$).

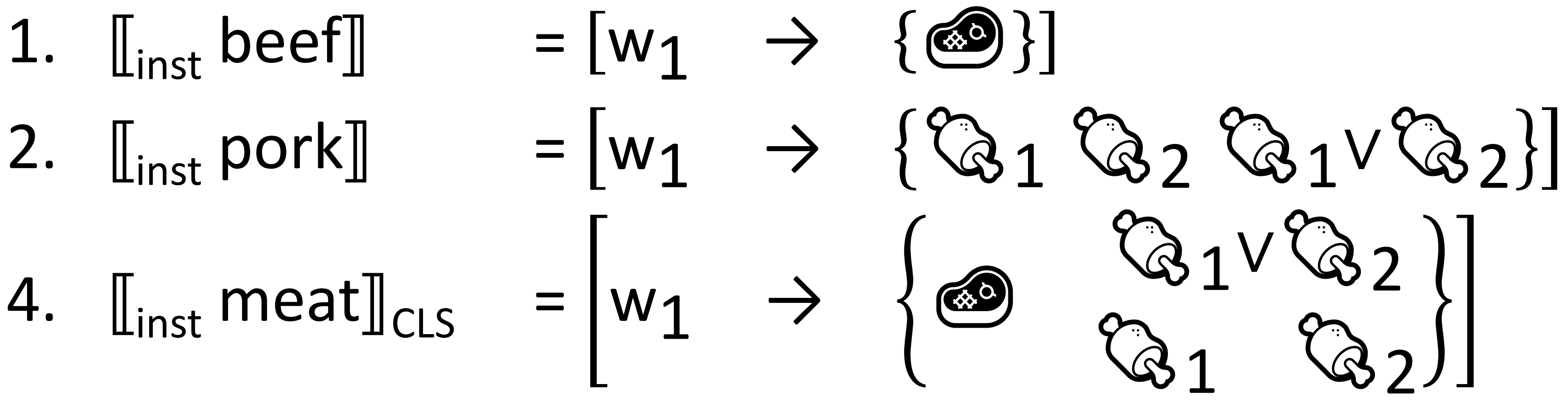
Analysis: Classified sub-property

- To capture the subkind-countability of *meat*, we require $\mathcal{R}$ to partition not $[\![_{\text{inst}}\ \text{N}]\!]$ but the classified sub-property $[\![_{\text{inst}}\ \text{N}]\!]_{\text{CLS}}$.
- $[\![_{\text{inst}}\ \text{N}]\!]_{\text{CLS}}$ consists of sums of a single kind.

3. $[\![_{\text{inst}}\ \text{meat}]\!] = [w_1 \rightarrow$  $]$

4. $[\![_{\text{inst}}\ \text{meat}]\!]_{\text{CLS}} = [w_1 \rightarrow$  $]$

Analysis: Classified sub-property



- $\mathcal{R}$ partitions P only if every instance of P instantiates some Q ∈ $\mathcal{R}$
- A set consisting of (1-2) meets this condition for (4).
- Appealing to the classified sub-property results in the following condition of subkind-countability.

Analysis: Classified sub-property

- N is a noun in language L whose intension under the instance reading is $[\![_{\text{inst}}\ \text{N}]\!]$. N can count subkinds iff
    1. $[\![_{\text{inst}}\ \text{N}]\!]_{\text{CLS}}$ is partitioned by a (non-singleton) set of properties $\mathcal{R}$ s.t.
    2. every Q $\in \mathcal{R}$ is denoted by a noun in L
- *Meat* can count subkinds because English has enough nouns to denote properties in a set that partitions $[\![_{\text{inst}}\ \text{meat}]\!]_{\text{CLS}}$.
    - e.g. *beef*, *pork* (sl.31)
- This condition accounts for the previous data (sl.24-25).
- Next, we attend to the subking-countability of *pet* and *sport* (sl.20).

Analysis: Spreading over

- Reflecting that *pet* and *sport* can count subkinds is achieved by appealing to spreading over instead partition (aka disjoint cover).
- P is a property, $\mathcal{R}$ is a set of properties
  Everything that P instantiates is instantiated by some Q ∈ $\mathcal{R}$

1. $\mathcal{R}$ covers P iff for every Q ∈ $\mathcal{R}$, Q ⊂ P
   Q is a strict sub-property of P
2. $\mathcal{R}$ spreads over P iff for every Q ∈ $\mathcal{R}$, Q ∩ P ≠ λw.∅
   Q overlaps with P

Analysis: Spreading over

1. ⟦$_{inst}$ bird⟧ = [w_1 → {𓅪$_{pet}$, 𓅪$_{wild}$}]
2. ⟦$_{inst}$ rabbit⟧ = [w_1 → {𓃹$_{pet}$, 𓃹$_{wild}$}]
3. ⟦$_{inst}$ pet⟧ = [w_1 → {𓅪$_{pet}$, 𓃹$_{pet}$}]

- (1) is not a strict sub-property of (3) due to 𓅪$_{wild}$, and (2) is not a strict sub-property of (3) due to 𓃹$_{wild}$, so a set consisting of (1-2) does not cover (3). (sl.33)
- (1) overlaps with (3) due to 𓅪$_{pet}$, and (2) overlaps with (3) due to 𓃹$_{pet}$, so a set consisting of (1-2) spreads over (3). (sl.33)

Analysis: Spreading over

- Reflecting that *pet* and *sport* can count subkinds is achieved by appealing to spreading over instead partition (aka disjoint cover).
- P is a property, $\mathcal{R}$ is a set of properties
  Everything that P instantiates is instantiated by some Q ∈ $\mathcal{R}$

1. $\mathcal{R}$ covers P iff for every Q ∈ $\mathcal{R}$, Q ⊂ P
   Q is a strict sub-property of P
2. $\mathcal{R}$ spreads over P iff for every Q ∈ $\mathcal{R}$, Q ∩ P ≠ λw.∅
   Q and P overlap

- Appealing to spreading over results in our analysis of subkind-countability.

Analysis: Spreading over

- N is a noun in language L whose intension under the instance reading is $[\![_{\text{inst}}\ \text{N}]\!]$. N can count subkinds iff
  1. $[\![_{\text{inst}}\ \text{N}]\!]_{\text{CLS}}$ is spread over by a (non-singleton) set of properties $\mathcal{R}$ s.t.
  2. every $\text{Q} \in \mathcal{R}$ is denoted by a noun in L

a. *Pet* can count subkinds because English has enough nouns to denote properties in a set that spreads over $[\![_{\text{inst}}\ \text{pet}]\!]_{\text{CLS}}$.
   - e.g. *bird*, *rabbit* (sl.20)

b. *Sport* can count subkinds because English has enough nouns to denote properties in a set that spreads over $[\![_{\text{inst}}\ \text{sport}]\!]_{\text{CLS}}$.
   - e.g. *karate*, *swimming* (sl.20)

Analysis: Object mass nouns

1.	two ammunition(s)	× 'two units'	× 'two kinds'	(sl.4)
2.	két lőszer	× 'two units'	√ 'two kinds'	(sl.11)

- Also *üvegáru* 'glassware', *ruházat* 'apparel'.

- Our analysis of subkind-countability correlates this with Hungarian but not English having general number. (Corbett 2000, Paul 2012)

Analysis: General number

- Assume: The set-denotation of nouns is revealed by predicative uses.

1. Ez a két golyó golyó. *true*
   this the two bullet bullet
   ’These two bullets are bullets.’
2. These two bullets are #(a) bullet. *false*

- Conclusion: The basic set-denotation of (notionally) count nouns (e.g. *golyó* and *bullet*) is
  1. Cumulative in Hungarian. (cf. Rullmann & You 2006:ex.19)
  2. Not cumulative in English. (quantized or disjoint, analysis-dependent)

Analysis: General number

- Conclusion: The basic set-denotation of (notionally) count nouns is
  1. Cumulative in Hungarian. (cf. Rullmann & You 2006:ex.19)
  2. Not cumulative in English. (Quantized or disjoint, analysis-dependent.)
- The bullets in w_1 are , and

1. $[\![\text{bullet}]\!]_{w1} = \{ , , \}$ *non-cumulative*
2. $[\![\text{golyó}]\!]_{w1} = \{ \ \mathrm{V}\mathrm{V} \quad \mathrm{V} \quad \mathrm{V} \quad \mathrm{V} \ \}$ *cumulative* (cf. Rullmann & You 2006:ex.19)

- This difference makes it harder for object mass nouns in English to meet the condition of subkind-countability (sl.36).

Analysis: Object mass nouns, English

1. $[\![_{inst}$ hollow-point bullet$]\!]$ = [w_1 → {}]
2. $[\![_{inst}$ soft-point bullet$]\!]$ = [w_1 → {$_1$, $_2$}]

- $[\![_{inst}$ soft-point bullet$]\!]_{w1}$ is non-cumulative, i.e. it precludes $_1$V$_2$, following English lacking general number (sl.39).

Analysis: Object mass nouns, English

1. $[\![_{inst}$ hollow-point bullet$]\!] = [w_1 \rightarrow \{\ \}]$
2. $[\![_{inst}$ soft-point bullet$]\!] = [w_1 \rightarrow \{\ _1,\ _2\}]$
3. $[\![_{inst}$ ammunition$]\!] = \left[w_1 \rightarrow \left\{\begin{array}{ccc} & \vee\ _1 \vee\ _2 & \\ \vee\ _1 & \vee\ _2 & _1 \vee\ _2 \\ & _1 & _2 \end{array}\right\}\right]$

- $[\![_{inst}$ ammunition$]\!]_{w1}$ is cumulative, following the standard analysis of mass nouns having cumulative extensions. (sl.28)
  - (Quine 1960:§19, Link 1983, Krifka 1989, 2007)

Analysis: Object mass nouns, English

1. $[\![_{inst}$ hollow-point bullet$]\!] = [w_1 \rightarrow \{\ \}]$
2. $[\![_{inst}$ soft-point bullet$]\!] = [w_1 \rightarrow \{\ _1,\ _2\}]$
4. $[\![_{inst}$ ammunition$]\!]_{CLS} = \left[w_1 \rightarrow \left\{\ \ \begin{array}{c} _1 \vee\ _2 \\ _1 \quad\ _2 \end{array}\right\}\right]$

- $\mathcal{R}$ spreads over P only if every instance of P instantiates some Q ∈ $\mathcal{R}$
  - (sl.33)
- A set consisting of (1-2) does not spread over (4) due to $_1 \vee\ _2$ not instantiating (1) or (2).

Analysis: Object mass nouns, English

- N is a noun in language L whose intension under the instance reading is $[\![_{\text{inst}}$ N$]\!]$. N can count subkinds iff
    1. $[\![_{\text{inst}}$ N$]\!]_{\text{CLS}}$ is spread over by a (non-singleton) set of properties $\mathcal{R}$ s.t.
    2. every $Q \in \mathcal{R}$ is denoted by a noun in L
- Object mass nouns in English cannot count subkinds because

1. They have cumulative reference, so their classified sub-property instantiates plural sums of a single kind (e.g. $_1 \vee _2$).
2. Too many subkinds are named by count nouns, which in English do not range over such sums (sl.39).
    - e.g. $[\![_{\text{inst}}$ soft-point bullet$]\!]$ does instantiate $_1 \vee _2$ (sl.41).

Analysis: Object mass nouns, Hungarian

- N is a noun in language L whose intension under the instance reading is $[\![_{inst}\ N]\!]$. N can count subkinds iff
  1. $[\![_{inst}\ N]\!]_{CLS}$ is spread over by a (non-singleton) set of properties $\mathcal{R}$ s.t.
  2. every $Q \in \mathcal{R}$ is denoted by a noun in L
- $_{\text{(Notionally)}}$ count nouns in Hungarian have cumulative reference. (sl.38)
- Subkinds being named by such nouns does not prevent object mass nouns from satisfying the condition.

Analysis: Object mass nouns

- N is a noun in language L whose intension under the instance reading is $[\![_{\text{inst}}\ \text{N}]\!]$. N can count subkinds iff
  1. $[\![_{\text{inst}}\ \text{N}]\!]_{\text{CLS}}$ is spread over by a (non-singleton) set of properties $\mathcal{R}$ s.t.
  2. every $\text{Q} \in \mathcal{R}$ is denoted by a noun in L

a. *Lőszer* can count subkinds because Hungarian has enough nouns to denote properties in a set that spreads over $[\![_{\text{inst}}\ \text{lőszer}]\!]_{\text{CLS}}$.

b. *Ammunition* cannot count subkinds; English lacks enough nouns to denote properties in a set that spreads over $[\![_{\text{inst}}\ \text{ammunition}]\!]_{\text{CLS}}$.

- English lacks enough nouns which name kinds of ammunition and range over plural sums of a single kind (e.g. $_1$ V $_2$).

Analysis: Further issues

- The next slides address the following questions.

1. What is the source of the condition of subkind-countability?
2. What is its purpose?
3. Why does it appeal to nouns?
4. What are its cross-linguistic predictions?

Analysis: Source

- Proposal: The condition of subkind-countability is
- a definedness-condition on the output of a covert element roughly-synonymous with *kind*, notated SUBK.
- The same condition holds in Hungarian and English, but the difference in general number makes it so that

1. SUBK($[\![_{\text{inst}}$ ammunition$]\!]$) is undefined
2. SUBK($[\![_{\text{inst}}$ *lőszer*$]\!]$) is defined

Analysis: Purpose

- Proposal: The purpose of the condition of subkind-countability is
- Preventing the output of SUBK from being the empty set.
- If a language has enough nouns to denote properties in a set that spreads over $[\![_{\text{inst}}\ \text{N}]\!]_{\text{CLS}}$, then
- SUBK($[\![_{\text{inst}}\ \text{N}]\!]$) is guaranteed to be non-empty.
- A defined output of SUBK can include kinds that are not named by nouns. (contra Carlson 1980:§6.1-2)
    1. Caged birds are a popular **pet** in Afghanistan. [γ]
    2. Filled pastries are a common **snack** in Mexico. (enTenTen13)

Analysis: Appeal to nouns

- Proposal: The condition appeals to nouns to prevent triviality.
- (1-2) are denoted by nouns, (3) is not.
  1. $[\![_{inst}\text{ hollow-point bullet}]\!] = [w_1 \rightarrow \{\ \}]$ (sl.45)
  2. $[\![_{inst}\text{ soft-point bullet}]\!] = [w_1 \rightarrow \{{}_1, {}_2\}]$ (sl.45)
  3. $[w_1 \rightarrow \{{}_1 \vee {}_2\}]$
  4. $[\![_{inst}\text{ ammunition}]\!]_{CLS} = \left[w_1 \rightarrow \left\{\ \ \begin{matrix} {}_1 \vee {}_2 \\ {}_1 \quad\ {}_2 \end{matrix}\right\}\right]$ (sl.45)
- (4) is spread over by a set consisting of (1-3).
- Appealing to nouns constrains an otherwise trivial condition.

Analysis: Appeal to nouns

- Under the hypothesis that nouns but not NPs correspond to concepts,
    - (Carlson 2010:§4, McNally 2017)
- The condition of subkind-countability checks whether the concept-correlate of the noun has enough sub-concepts in the language.
- In other words, it checks whether the concept-correlate of the noun is conceptually well-founded in the language.
- Thus, we say that subkind-countability is licensed by conceptual well-foundedness rather than disjointedness.
    - Contra Sutton & Filip (2018).

Analysis: Prediction

- The prediction concerns languages with (near-)synonyms that differ in instance-countability, e.g. Hungarian and English.

1. If the language has general number (e.g. Hungarian), then
   in each pair, members should have identical subkind-countability.
   - Either both can count subkinds or neither can.

- Borne out in that both members of each pair can count subkinds.

	cannot count instances		can count instances	
a.	lőszer	‘ammunition’	golyó	‘bullet’
b.	üvegáru	‘glassware’	poharat	‘(drinking) glass’
c.	ruházat	‘apparel’	ruha	‘garment’

Analysis: Prediction

- The prediction concerns languages with (near-)synonyms that differ in instance-countability, e.g. Hungarian and English.

1. If the language has general number (e.g. Hungarian), then
   in each pair, members should have identical subkind-countability.
2. If the language lacks general number (e.g. English), then
   in some pairs, the two sorts of countability should pattern together.

- Borne out in pairs like *bullet* and *ammunition*, where
  1. *Bullet* can count instances and subkinds. (sl.4)
  2. *Ammunition* lacks both sorts of countability. (sl.4)

Analysis: Prediction

- The prediction concerns languages with (near-)synonyms that differ in instance-countability, e.g. Hungarian and English.

1. If the language has general number (e.g. Hungarian), then
   in each pair, members should have identical subkind-countability.
2. If the language lacks general number (e.g. English), then
   in some pairs, the two sorts of countability should pattern together.

- Thus far, the analysis has made correct predictions for Dutch (De Belder 2013), Hebrew, Japanese and Brazilian Portuguese (in prep).

Conclusion

- Subkind-countability is licensed by conceptual well-foundedness, not disjointedness. contra Sutton & Filip (2018)
- Two seemingly unrelated facts about Hungarian are correlated.

1. Bare (notionally) count nouns range over singularities and pluralities. (Farkas & de Swart 2003)
2. At least three object mass nouns can count subkinds, unlike their English counterparts.
    - *lőszer* ‘ammunition’, *üvegáru* ‘glassware’, *ruházat* ‘apparel’

Thank you!

The independence of instance and subkind countability

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15th International Conference on the Structure of Hungarian

August 26th 2021, 9:40-10:20, University of Pécs

Data: Hungarian

- Elicitation sessions with four native speaking Hungarian adult consultants (born and raised in Hungary in Hungarian speaking households; three from Budapest, one from Pécs).
- English was used as the meta-language. (Matthewson 2004)
- Consultants were asked to provide felicity judgments on a seven-point Likert scale from 1 (`very unnatural') to 7 (`very natural’).
- They were invited to provide any thoughts that they had about the context and target item.

Data: Hungarian

- *Lőszer* ‘ammunition’ can count subkinds but not instances (sl.11).
- The same goes for *üvegáru* ‘glassware’ and *ruházat* ‘apparel’.
- That these nouns cannot count instances is not due to their dictionary meaning; they have (near-)synonyms that can.
  - (cf. Wisniewski et al. 1996, Casey 1997)

	cannot count instances		can count instances	
1.	lőszer	‘ammunition’	golyó	‘bullet’
2.	üvegáru	‘glassware’	poharat	‘(drinking) glass’
3.	ruházat	‘apparel’	ruha	‘garment’

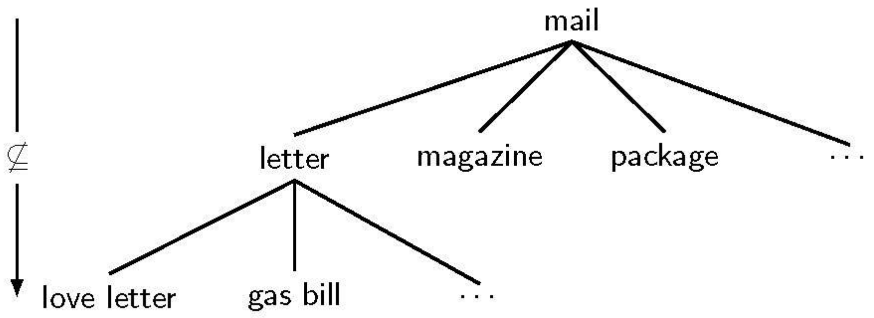
Data: Hungarian

- *Lőszer* ‘ammunition’ can count subkinds but not instances (sl.11).
- The same goes for *üvegáru* ‘glassware’ and *ruházat* ‘apparel’.
- That these nouns cannot count instances is not due to their dictionary meaning; they have (near-)synonyms that can.
  - (cf. Wisniewski et al. 1996, Casey 1997)
- These (near-)synonyms can both count subkinds.

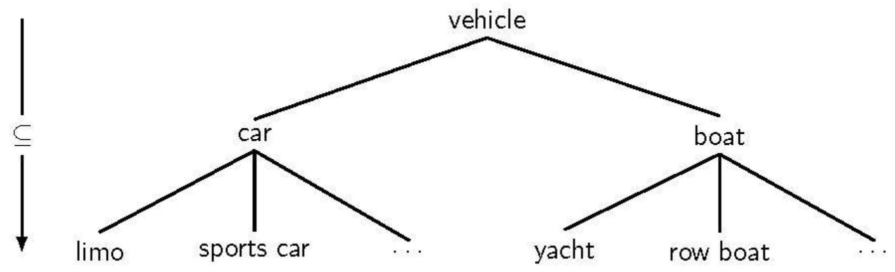
1.	két golyó	√ ‘two bullet units’	√ ‘two kinds of bullets’
2.	két lőszer	× ‘two units of ammo’	√ ‘two kinds of ammo’

Grimm & Levin (2017)

(14) Attempted Taxonomic Hierarchy for *mail*



(12) Taxonomic Hierarchy for *vehicle*



Analysis: Spreading over

- $\mathcal{R}_1$ covers $_{\text{(and partitions)}}$ $[\![_{\text{inst}}\ \text{pet}]\!]$, but its members are not denoted by *bird* or *rabbit* if w_1 has wild birds and wild rabbits.

1. Not every $Q \in \mathcal{R}_2$, $Q \subset [\![_{\text{inst}}\ \text{pet}]\!]$ $\qquad$ $\mathcal{R}_2$ does not cover $[\![_{\text{inst}}\ \text{pet}]\!]$
2. Every $Q \in \mathcal{R}_2$, $Q \cap [\![_{\text{inst}}\ \text{pet}]\!] \neq \lambda w.\emptyset$ $\qquad$ $\mathcal{R}_2$ spreads over $[\![_{\text{inst}}\ \text{pet}]\!]$

$\mathcal{R}_1$ = $\boxed{\{[w_1 \rightarrow \{🐦_{\text{pet}}\}],\quad [w_1 \rightarrow \{🐇_{\text{pet}}\}]\}}$

$[\![_{\text{inst}}\ \text{pet}]\!]$ = $[w_1 \rightarrow \{🐦_{\text{pet}}, 🐇_{\text{pet}}\}]$

$\mathcal{R}_2$ = $\boxed{\{[w_1 \rightarrow \{🐦_{\text{pet}}, 🐦_{\text{wild}}\}],\quad [w_1 \rightarrow \{🐇_{\text{pet}}, 🐇_{\text{wild}}\}]\}}$

Analysis: Spreading over, *pet*

- N is a noun in language L whose intension under the instance reading is $[\![_{inst}\ N]\!]$. N can count subkinds iff
  1. $[\![_{inst}\ N]\!]_{CLS}$ is spread over by a (non-singleton) set of properties $\mathcal{R}$ s.t.
  2. every Q $\in \mathcal{R}$ is denoted by a noun in L
- *Pet* can count subkinds because English has enough nouns to denote properties in a set that spreads over $[\![_{inst}\ pet]\!]_{CLS}$.
  - e.g. *bird*, *rabbit* (sl.20)
- CLS plays no role with *pet*, but it does with *sport*.

Analysis: Spreading over, *sport*

- N is a noun in language L whose intension under the instance reading is $[\![_{inst}\ \text{N}]\!]$. N can count subkinds iff
    1. $[\![_{inst}\ \text{N}]\!]_{CLS}$ is spread over by a (non-singleton) set of properties $\mathcal{R}$ s.t.
    2. every Q ∈ $\mathcal{R}$ is denoted by a noun in L
- $[\![_{inst}\ \text{sport}]\!]$ instantiates sums of karate and swimming, but no noun that names a kind of sport ranges over such sums.
- Thus, $[\![_{inst}\ \text{sport}]\!]$ is not spread over by a set of properties that are named by English nouns. (cf. sl.27)

Analysis: Spreading over, *sport*

- N is a noun in language L whose intension under the instance reading is $[\![_{\text{inst}}\ \text{N}]\!]$. N can count subkinds iff
  1. $[\![_{\text{inst}}\ \text{N}]\!]_{\text{CLS}}$ is spread over by a (non-singleton) set of properties $\mathcal{R}$ s.t.
  2. every $\text{Q} \in \mathcal{R}$ is denoted by a noun in L
- $[\![_{\text{inst}}\ \text{sport}]\!]$ instantiates sums of karate and swimming, but no noun that names a kind of sport ranges over such sums.
- Such sums are precluded from $[\![_{\text{inst}}\ \text{sport}]\!]_{\text{CLS}}$. (cf. sl.27)
- *Sport* can count subkinds because English has enough nouns to denote properties in a set that spreads over $[\![_{\text{inst}}\ \text{sport}]\!]_{\text{CLS}}$.
  - e.g. *karate*, *swimming* (sl.20)

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