Animating the narrow syntax

Martina Wiltschko

Elizabeth Ritter

GLOW April 3rd, 2014

Goals

- **Empirical claim**
  - *Animacy* may or may not be part of the grammatical system of a language

- **Theoretical problem**
  - What does it mean for animacy to be part of the grammatical system?
  - And why isn't this universal?

Overview

1. **Effects of animacy** in natural language
    i) ontological underpinnings
    ii) when grammar rules

2. **Background** on narrow syntax and the universal spine

3. **Macro-variation** in grammatical animacy marking:
    to have or not to have animacy

4. **Micro-variation** in grammatical animacy marking:
    the locus of animacy

The cognitive importance of animacy

It is also the case that infants distinguish between inanimate objects and animates, namely humans, in important ways. For example, they recognize that humans are self-propelled while inanimate objects move only after contact with another object.

<div align="right">Kuhlmeyer, Bloom & Wynn 2004: 95</div>

…human thought is organized as a system. I explore the hypothesis that the cause of this difference is a grammatical way of structuring semantic information, and I present evidence that **the organization of grammar precisely reflects the organization of a specific mode of thought** apparently distinctive of humans.

<div align="right">Hinzen 2013: 1</div>

Overview

1. **Effects of animacy** in natural language
    i) when world knowledge matters
    ii) when grammar rules

2. **Background** on narrow syntax and the universal spine

3. **Macro-variation** in grammatical animacy marking:
    to have or not to have animacy

4. **Micro-variation** in grammatical animacy marking:
    the locus of animacy

Effects of animacy

Animacy, or the distinction between animate and inanimate entities, is so pervasive in the grammars of human languages that it tends to be taken for granted and become invisible.

… studies of animacy have […] concentrated on what has been called **the animacy hierarchy** […] **HUMAN>ANIMAL> INANIMATE**.

Hierarchies of this kind have been assumed by typologists to underlie various implicational universals.

Dahl 1999: 99

Effects of animacy

	Animate	Inanimate
AGENT, EXPERIENCER	✓	✗

(1)   a.   *The boy was scared.*
          b. *#The tree was scared.*

Effects of animacy

	Animate	Inanimate
INALIENABLE POSSESSION	✓	✓

(1)   *John has a broken arm*

(2)   *The oak tree has many branches*

Effects of animacy

	Animate	Inanimate
INALIENABLE POSSESSION	✓	✓
ALIENABLE POSSESSION	✓	✗

(1)   *John has a bird.*

(2) *#The oak tree has a family of birds*
(3)   *The oak tree has a family of birds in it*

Effects of animacy

Animacy **hierarchy** effects:

differential object marking

Case-marking	Human	Animate	Inanimate
Vietnamese	✗	✗	✗
Spanish	✓	✗	✗
Russian	✓	✓	✗
Hungarian	✓	✓	✓

From Haspelmath 2008

If any P is overtly case-marked, then all P's that are higher on the animacy scale, the definiteness scale, or the person scale are marked at least to the same extent.   Silverstein 1976

Effects of animacy

(1) Spanish

    a.   *El director busca el carro.*

       'The director is looking for the car'

    b.   *El director busca el perro*

       'The director is looking for the dog.'

    c.   *El director busca a su hijo*

       'The director is looking for his son.'

Haspelmath 2008

When world-knowledge matters

(1)   *Llamó   a la muerte*
call-PAST.3.s P the death
'S/he called out to death.'

(2)   *Llamó la   muerte.*

call-3.s   the death
'S/he called out to death.'

Hanssen 1945: p296 (via Karen Zagona, p.c.)

When world-knowledge matters

(1) *This tree is scared.*

When world-knowledge matters

(1) *This tree has a family of birds.*

When world-knowledge matters

Animacy is an ontological type (not a grammatical category)
Ramchand (2008), Folli & Harley (2008), Dahl (2008)

When world-knowledge matters

Hey guys! How's it hangin'?!

… what has been referred to in the literature as the animacy hierarchy is essentially a reflection of different ways of realizing grammatically **a fuzzy dichotomy,** at the base of which is the distinction between persons, that is, essentially human beings perceived as agents, and the rest of the universe. **The dichotomy is fuzzy because we have the possibility of sometimes treating inanimate entities as persons and, perhaps less often, human beings as non-persons, in one sense or the other.**

Dahl 1999: 99

Overview

1. **Effects of animacy** in natural language
   i) ontological underpinnings
   ii) when grammar rules: Blackfoot

2. **Background** on narrow syntax and the universal spine

3. **Macro-variation** in grammatical animacy marking:
   to have or not to have animacy

4. **Micro-variation** in grammatical animacy marking
   variation in the locus of animacy

Essential characteristics
of a grammatical category

'a **partitioning** of a syntactic category into subclasses that are marked (at least partially) morphologically and that are relevant to syntax, most notably by being involved in agreement operations'

<div align="right">Danon 2010: 149</div>

The partitioning is **categorical**
    any given noun is categorized as either animate or inanimate

The partitioning is **sensitive to AGREE** and **SELECT**

Blackfoot

ALLIED NATIONS OF THE
BLACKFOOT CONFEDERACY
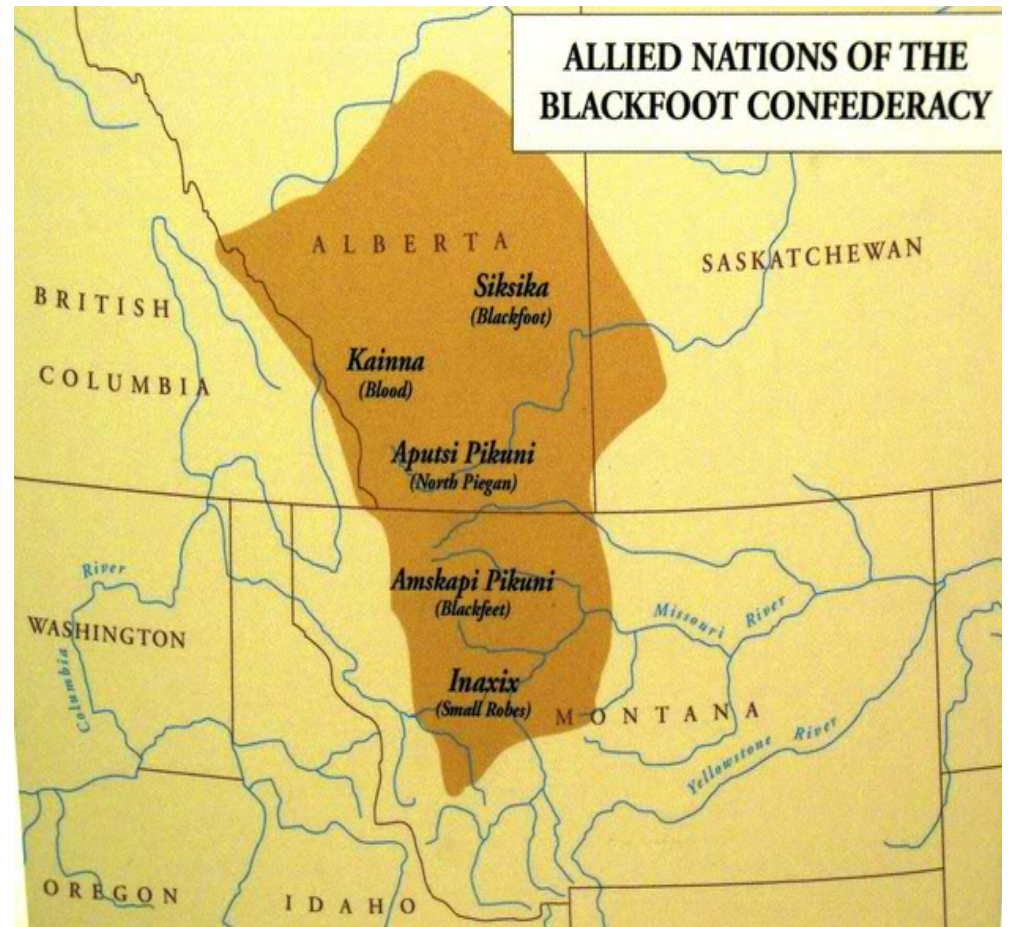
Effects of animacy in Blackfoot

Obligatory categorical partitioning

aakíí	nan	Woman
aakíí.	nan	woman/queen (card); **aakííksi** women; see *kipitáaakii* old woman;
aakiika'ksímii	nin	fringed sage, *Artemisia frigida; **aakííka'ksimiiyistsi** fringed sages; also **aakiika'ksimo**; cf. aakii+ka'ksimo
aakííkoan	nan	Girl
aakííkoan.	nan	girl; **i'nákaakííkoaiksi** little girls; **nitáákiikoama** my girlfriend.
aakíípasskaan	nin	women's dance; **aakíípasskaanistsi** women's dances; also paisskaan; see also *o'taksipasskaan*; cf. aakii+ipasskaan.
ááksi'ksaahko	nin	bank, embankment, cliff; **sspáksi'ksááhkoistsi** high cliffs/ cut banks.
aamio'kakiikinaatts i	nin	muskrat root (bitter root), *Acorus calamus; **áámio'kakiikinaattsiistsi** muskrat roots; also *omio'kakiikinaattsi*; cf. mamii+o'kakiikin+inaattsi.
aamsskáápipikani	nan	South Peigan (band of the Blackfoot tribe); **Amsskáápipikaniikoaiksi** Southern Peigan persons; cf. waamsskaap+piikani

When grammar rules

Grammatically animate nouns for ontologically inanimate things

Meaning	[Animate] noun
'pipe'	*kippiaapi*
'blood clot'	*katoyis*
'stove'	*po'táa'tsis*
'finger'	*mookítsis*
'blanket'	*si'káán*
'wagon'	*áinaka'si*

F&R: 1995

Effects of Animacy in Blackfoot

AGREE

(1) a. *Oma*   *sááhkomaapiwa*   *ííksspitaawa.*

      om-wa   saahkomaapi-wa   iik-sspitaa-wa

      DEM-PROX   boy-PROX   INTNS-be.tall.AI-PROX

      'That boy is tall.'

   b. *Omiksi*   *sááhkomaapiks*   *ííksspitaawa.*

      om-**iksi**   saahkomaapi-**iksi** iik-sspitaa-wa

      DEM-PL   boy-PL   INTNS-be.tall.AI-PL-3PL.PRN

      'Those boys are tall.'

Effects of Animacy in Blackfoot

AGREE

(1) a. *Omi*   *náápioyisi*   *ííksspiiwa*
    om-yi   naapioyis-yi   iik-sspii-wa
    DEM-INAN   house-INAN   INTNS-be.tall.AI-PROX
    'That house is tall.'

  b. *Omistsi*   *náápioyisists*   *ííksspiiyaawa*
    om-**istsi**   naapioyis-**istsi** iik-sspii-yi-aawa
    DEM-PL   house-PL   INTNS-be.tall.AI-PL-3PL.PRN
    'Those houses are tall.'

When grammar rules

(1) *ámostsi*   *pisátssaisskiistsi*   *iikí'taamssiiyaawa*
    amo-**(i)stsi**   pisatssaisski-**istsi**   iik-i'taam-ssi-y(i)-(y)aawa
    this-**IN.PL**   flower(in)-**IN.PL**   very-happy-be.AI-pl-pron
    'These (inanimate) flowers are happy.'

Even more animacy effects in Blackfoot

Verbal classification

		bring to town.
ihtsiiyimm	vta	admire; **ihtsííyimmisa!** admire her!; **áakihtsiiyimmiiwa** she will admire him; **iihtsííyimmiiwa** she admired her; **nítsstsííyimmoka** she admired me; **nitáíhtsiiyimmoka** she admires me.
ihtsiiyi'tsi	vti	admire, like; **ihtsííyi'tsit!** admire it (e.g. the chair)!; **áakihtsiiyi'tsima omi náápiooyisi** she will admire (the appearance of that house; **iihtsííyi'tsima** he liked it (e.g. the name he was given); **nítsstsiiyi'tsii'pa kisóka'sima** I admired your dress; Rel. stem: vai *ihtsiiyi'taki* admire.
ihtsikssi	vai	be sleepy; (*ihtsíkssit!* be sleepy!); **áakihtsikssiwa** she will be ...; **iihtsíkssiwa** he is sleepy; **nitáíhtsikssi** I am sleepy; **(ki)kátai'ihtsíksspa?** Are you sleepy?; **nítsstsikssi** I'm sleepy; **nitsíkihtsikssi** I'm very sleepy.
á'pai'piksi	vti	arrange; **a'páí'piksit!** re-arrange it!; **áaká'pai'piksima** she will arrange it; a'páí'piksima **anni sóópa'tsisi** he arranged the chair; **nitá'pai'piksii'pa** I arranged it; **á'pawai'piksima anniistsi sóópa'tsiistsi** he is arranging the chairs.
a'paisii	vii	it passes (said of time); **áaka'paisiiwa** time will pass; **a'páísiiwa** time passed; **stáma'paisiiwa** and time passed.
a'paisskin	vta	touch/manipulate the face of; **a'paisskinisa!** touch her face!; **áaka'paisskiniiwa** you will touch her face; **á'paisskiniiwa** he touched her whole face; **nitá'paisskinoka** she is manipulating my face; cf. *sski*.

Summary

- Empirical claim:
  - *Animacy* may or may not be part of the grammatical system of a language

	Ontological type	Grammatical category
English	✓	✗
Blackfoot	✓	✓

Goals

- **Empirical claim**
  - *Animacy* may or may not be part of the grammatical system of a language

- **Theoretical problem**
  - What does it mean for animacy to be part of the grammatical system?
  - And why isn't this universal?

Proposal

Animacy may enter the narrow syntax

Overview

What is *narrow syntax?*

…technically, the **mental-computational path** leading from a selection of a number of lexical items stored in long-term memory to a syntactic representation of "logical form" (LF) at the syntax-semantics interface (see Chomsky, 1995)

Hinzen 2013: 2
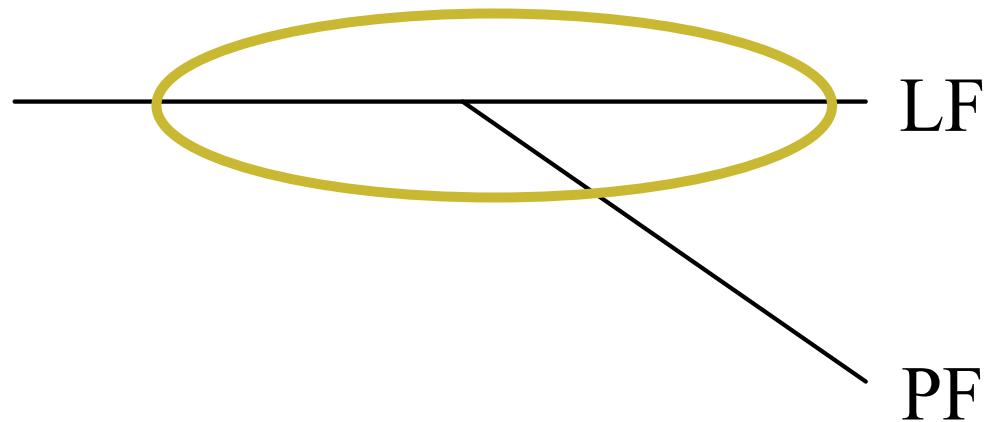
What is *narrow syntax?*

… **structure building** operation (MERGE)

… **relation-building** operations (SELECT, AGREE)
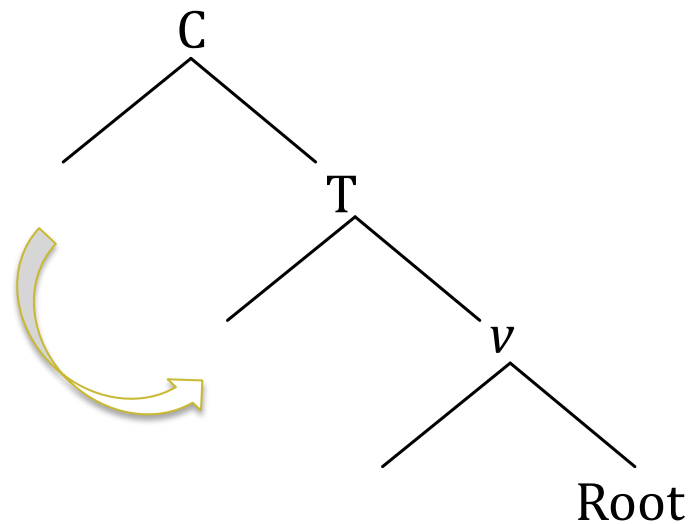
What is *narrow syntax?*

… invariant

The universal base hypothesis

The deep structures of all languages are identical, up to the ordering of constituents…
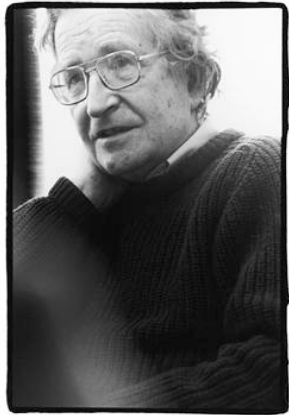
Ross 1970[1968]:260

C
├── C
└── T
    ├── T
    └── *v*
        ├── *v*
        └── Root
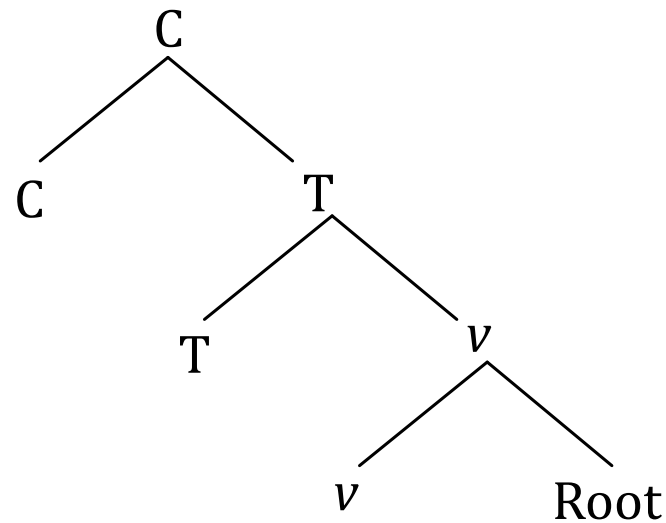
The problem

What does UG look like if languages can differ according to whether animacy is grammaticized?

How do you have a fixed structure but variable content
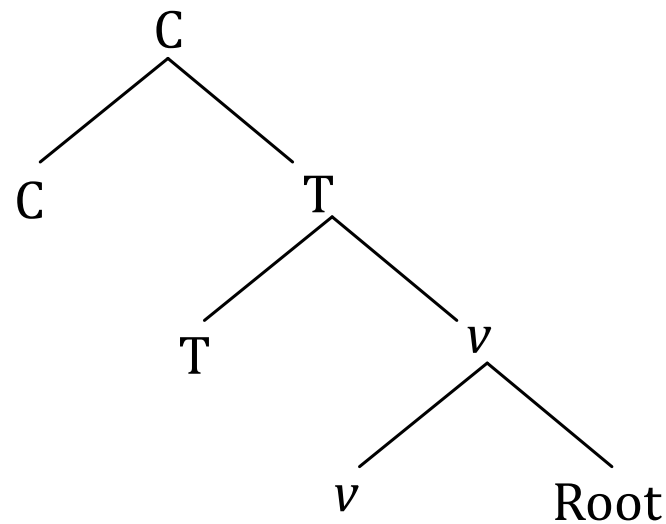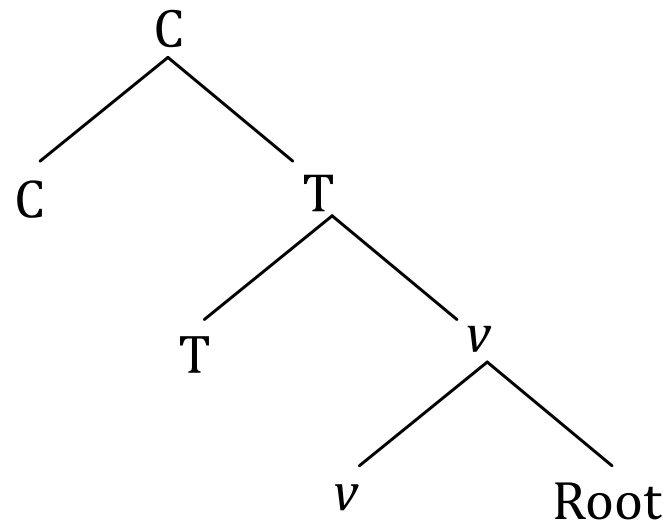
The problem

Universals and variation

i. There is evidence for the universality of categories
ii. Languages vary in their categorial inventories

	Ontological type	Grammatical category
English	✓	✗
Blackfoot	✓	✓

The problem

The problematic assumption:
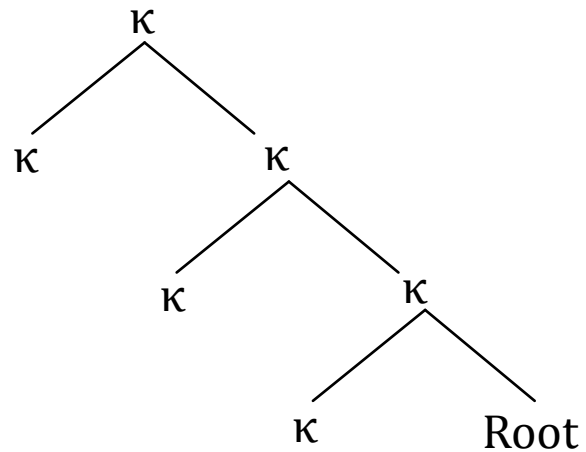The set of universal categories is a repository of grammatical categories
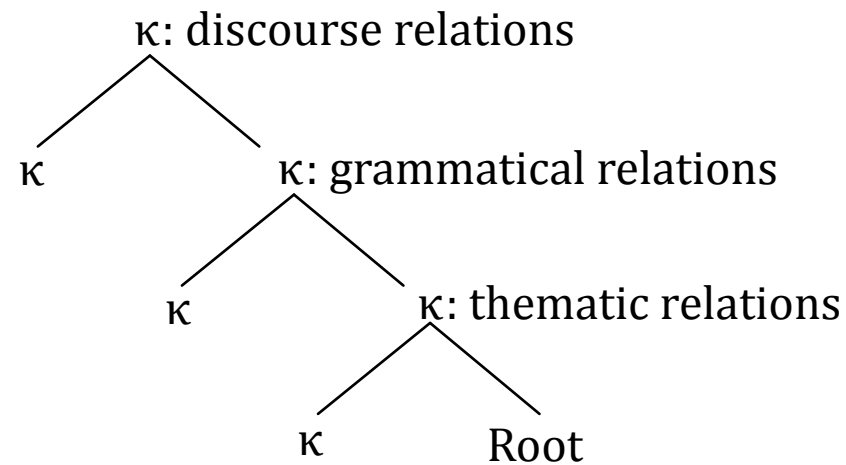
Towards a solution

Getting rid of labels??

No pre-fabricated labels for categories
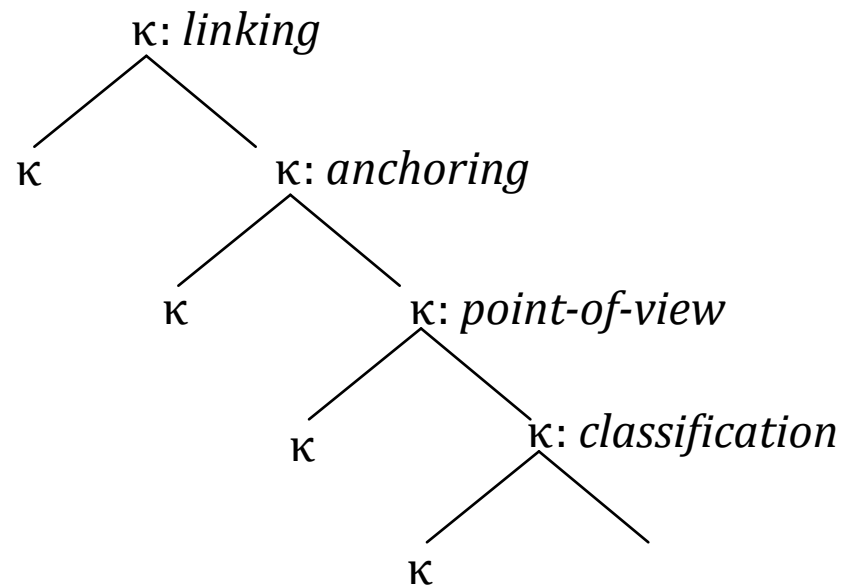
(Chomsky 1995; Collins 2002)

Towards a solution
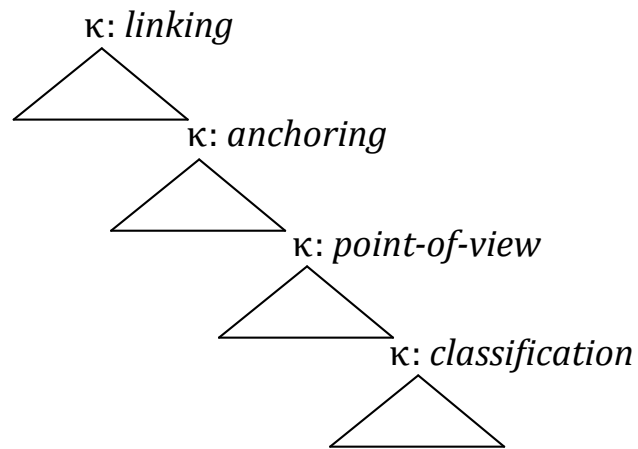
A universal hierarchy of relations

κ: discourse relations
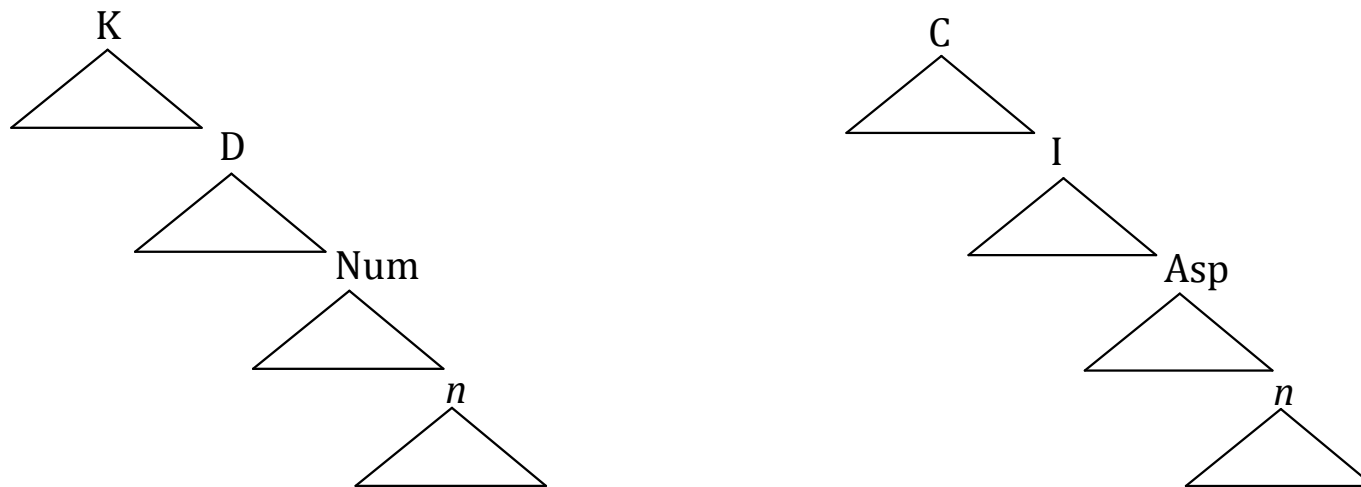
κ   κ: grammatical relations

κ   κ: thematic relations

κ   Root

The universal spine

A universal hierarchy of abstract functions

κ: *linking*

κ

κ: *anchoring*

κ

κ: *point-of-view*

κ

κ: *classification*

κ

The universal spine

κ: *linking*

κ: *anchoring*

κ: *point-of-view*

κ: *classification*

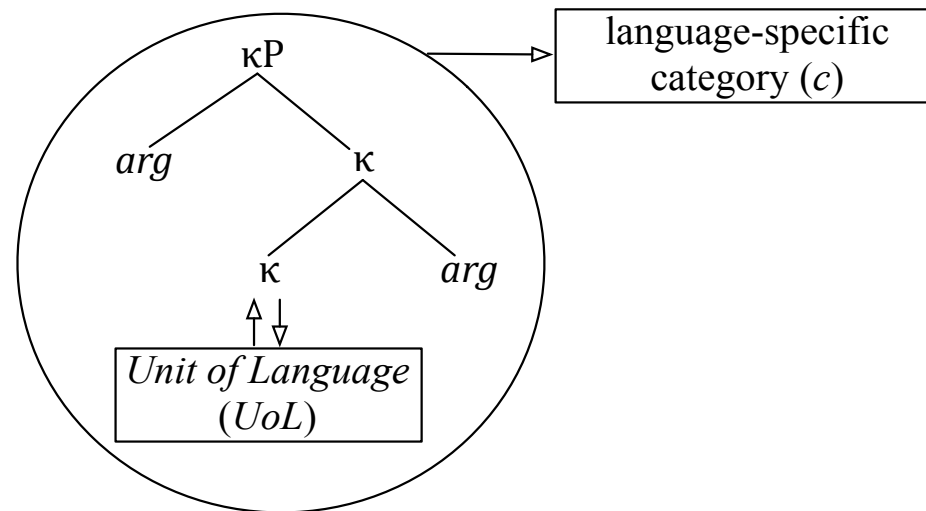**Nominal and verbal instantiations**

K

D

Num

n

C

I

Asp

n

Variation in categorial inventories

Language specific categories are constructed

$$c = \kappa + \textbf{UoL}$$

The content of language specific categories may vary.

Goals

- **Empirical claim**
  - *Animacy* may or may not be part of the grammatical system of a language

- **Theoretical problem**
  - What does it mean for animacy to be part of the grammatical system?
  - And why isn't this universal?

Overview

1. **Effects of animacy** in natural language
   i) ontological underpinnings
   ii) when grammar rules

2. **Background** on narrow syntax and the universal spine

3. **Macro-variation** in grammatical animacy marking:
   to have or not to have animacy

4. **Micro-variation** in grammatical animacy marking
   variation in the locus of animacy

The category of animacy

• Which category of Bf (but not English, Spanish, etc.) is constructed by association with formal content representing animacy?

kP

kP
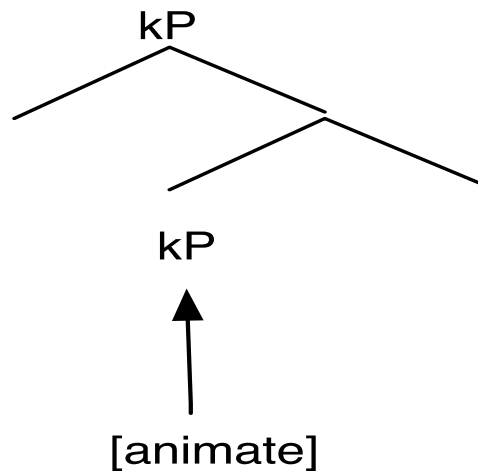
[animate]

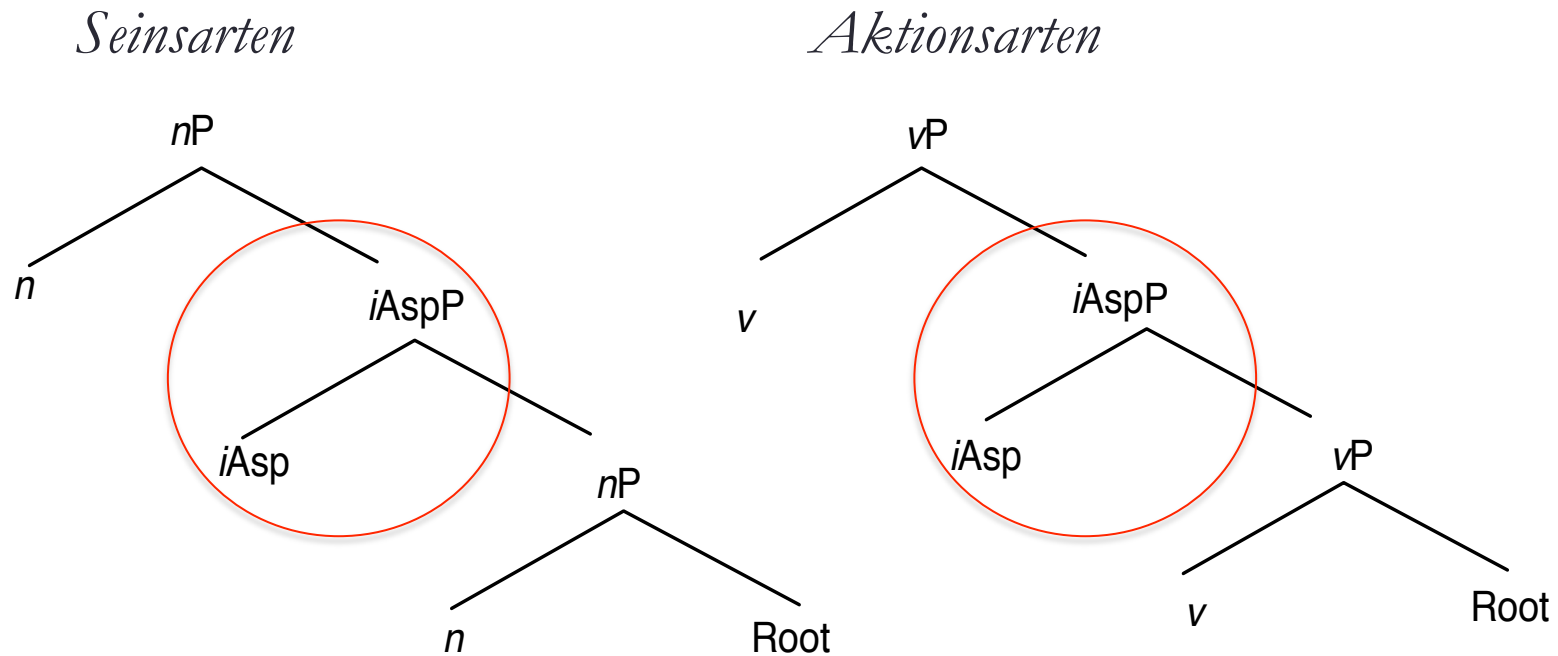# A footnote on notation

Animate   vs.   Inanimate

[animate]   (*non-animate*)

The category of animacy
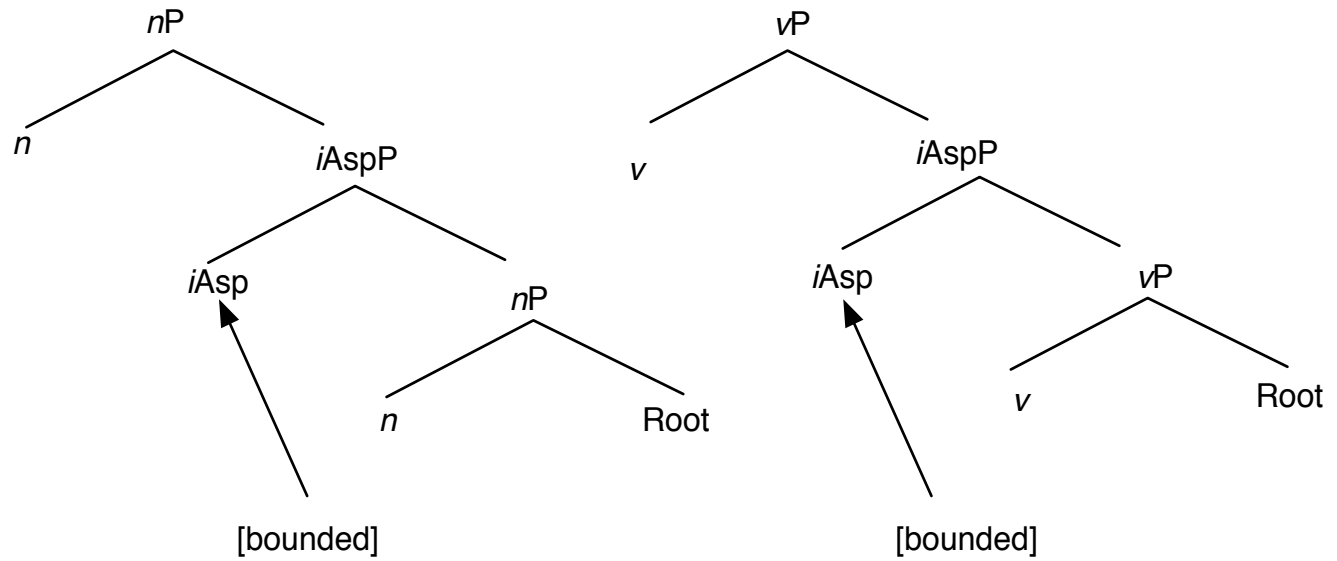
- Inner Aspect (iAsp) – lexical aspectual classification

*i*Asp in English

	Seinsart	*Aktionsart*
[bounded]	count	telic
(*non-bounded*)	mass	atelic

*n*P
  n   *i*AspP
      *i*Asp   *n*P
                n   Root
      [bounded]

*v*P
  v   *i*AspP
      *i*Asp   *v*P
                v   Root
      [bounded]

Prediction - Complementarity

if *i*Asp is associated with [animate], it is not also associated with [bounded]:

NO evidence of [bounded] in nominal *i*Asp:

➔NO grammaticalized count-mass distinction

NO evidence of [bounded] in verbal *i*Asp:

➔NO grammaticalized telic-atelic distinction

No grammaticalized count-mass distinction in Bf

- Wiltschko (2009, 2012): Blackfoot lacks a grammaticalized count-mass distinction:
  - *all* nouns can be pluralized, including nouns that refer to substances
  - determiners are not sensitive to distinction between count & mass nouns
  - no strategies for reclassifying mass nouns (e.g. two *drops* of blood)
  - availability of bare NP arguments is not correlated with count-mass distinction

No grammaticalized telic-atelic distinction in Bf

- English: transitivity alternations → alternations in telicity
  - (1)   a.   She ate the fish in an hour/*for an hour.
  -        b.   She ate (fish) for an hour/*in an hour.

- Blackfoot: verbs are overtly marked for (in)transitivity
  - (2)   na-oo-**wat**-yii-wa   amo   mamii   `   transitive
    - PST-eat-**TA**-DIR-3SG   DEM   fish.AN
    - 'S/he ate this fish.'

  - (3)   na-oo-**yi**-wa   (mamii)   "intransitive"
    - PST-eat-**AI**-3SG (fish.AN)
    - 'S/he ate (fish).'

  ...but this is not correlated with telicity

No grammaticalized telic-atelic distinction in Bf

- Ritter & Rosen (2010): telicity tests indicate no difference between verb classes:

	Transitive TA/TI	Intransitive AI/AI+O
aspectual verb 'finish'	✓	✓
durative adv 'in X time'	✓	✓
time frame adv 'for X time	✓	✓
imperfective paradox	✓	✓

- alternation between transitive (TA/TI) and intransitive (AI/AI+O) verbs does not signal a shift between telic and atelic predicates

Prediction - Lexical Aspectual Classes

If *i*Asp is associated with [animate], then all lexical aspectual classification is animacy based - *Aktionsarten* as well as *Seinsarten:*

Participant-based *Aktionsarten* in Bf

- Algonquian morphological verb classes (Bloomfield 1946) are *Aktionsarten* (Louie 2008)

Verb Class	Transitivity	Animacy
Transitive Animate (TA)	yes	animate
Transitive Inanimate (TI)	yes	inanimate
Intransitive Animate (AI)	no	animate
Intransitive Inanimate (II)	no	inanimate

Temporal-based *Aktionsarten*

- Vendler verb classes defined by temporal properties of the predicate:

Verb Class	Process	Boundedness
Accomplishments	yes	bounded
Activities	yes	unbounded
Achievements	no	bounded
States	no	unbounded

↑ ↑

dimensionality   delimiting argument

Participant-based *Aktionsarten* in Bf

- Algonquian morphological verb classes (Bloomfield 1948) are *Aktionsarten* (Louie 2008)

Verb Class	Transitivity	Animacy
Transitive Animate (TA)	yes	animate
Transitive Inanimate (TI)	yes	inanimate
Intransitive Animate (AI)	no	animate
Intransitive Inanimate (II)	no	inanimate

↑   ↑

dimensionality   delimiting argument

Dimensionality

- **Temporal**:   Does the event occur over a period of time?
  <u>English test</u>: progressive (= Vwpt Aspect)

(1)   a.   John is walking/building a house.
      b.   #John is liking the show/realizing his mistake.

Participant: Does the event have more than one DP argument?
  <u>Blackfoot test</u>: direct/inverse (= Vwpt Aspect)

(2)   na-oo-**wat**-yii-wa   amo   mamii   (3)   na-oo-**yi**-wa
      PST-eat-**TA**-DIR-3SG DEM fish.AN   PST-eat-**AI**-3SG
      'S/he ate this fish.'   'S/he ate (sthg).'

Delimiting arguments

Temporal: Is there an argument that marks the temporal endpoint of a [bounded] event?
English: various strategies to derive [bounded] accomplishments from activities ... all require the addition of a [bounded] object.

(1) a. Terry thought for an hour/*in an hour.

b. Terry thought **up** an answer in an hour/*for an hour.

(2) a. Terry sang for an hour/*in an hour.

b. Terry sang a ballad in an hour/*for an hour.

Animate delimiting arguments

Participant: Is there an argument whose action or reaction delimits an [animate] event?

<u>Blackfoot</u>: various strategies to derive [animate] TA verbs … all require the addition of an [animate] object

(1)   an-wa   Rosie   **nit**-o't-omo-ok-wa   nit-inika'siniki
      DEM-PROX   R   1-take-TA.BEN-3:1.3SG   1-CAR
      'Rosie took my car from **me**.'   (Bliss 2010)

(2)   nit-ohpok-ooyi-**m**-yii-wa   **ann-wa**   **Pokaakii**   pisátsi'nsimaan-iksi
      1-with-eat-TA.ACCMP-DIR-3SG DEM-PROX   Pokaakii   vegetable-IN.PL
      'I, together with **Pokakii,** ate vegetables; ≠I ate Pokaakii with vegetables.)

(Meadows 2010)

[animate] vs [bounded] – Consequences

- dependency between feature of *i*Asp and higher functional categories:

	*i***Asp**	**Phi**
count nouns	[bounded]	[plural] or (*non-plural*)
mass nouns	(*non-bounded*)	default (*non-plural*)
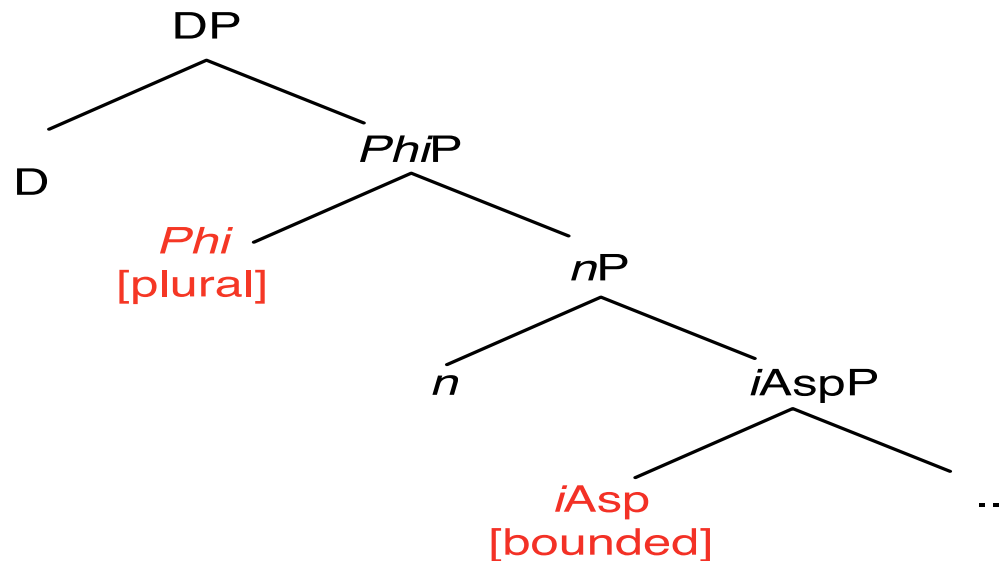
[animate] vs [bounded] – Consequences

- In Blackfoot interaction between OBVIATION (reference tracking) and animacy:

(1) a. om-**yi**   saahkomaapi-**yi**   b. om-**wa**   saahkomaapi-**wa**

DEM-OBV   boy.-OBV   DEM-PROX   boy-PROX

'that boy (OBV)'   'that boy (PROX)'

(2) a. om-**yi**   naapioyis-**yi**   b. *om-**wa**   naapioyis-wa

DEM-OBV   house-OBV   DEM-PROX   house-PROX

'that house'   'that house'

[animate] vs [bounded] – Consequences

- dependency between feature of *i*Asp and higher functional categories:

	*i***Asp**	**D**
animate nouns	[animate]	[proximate] or *(non-proximate)*
inanimate nouns	*(non-animate)*	default *(non-proximate)*
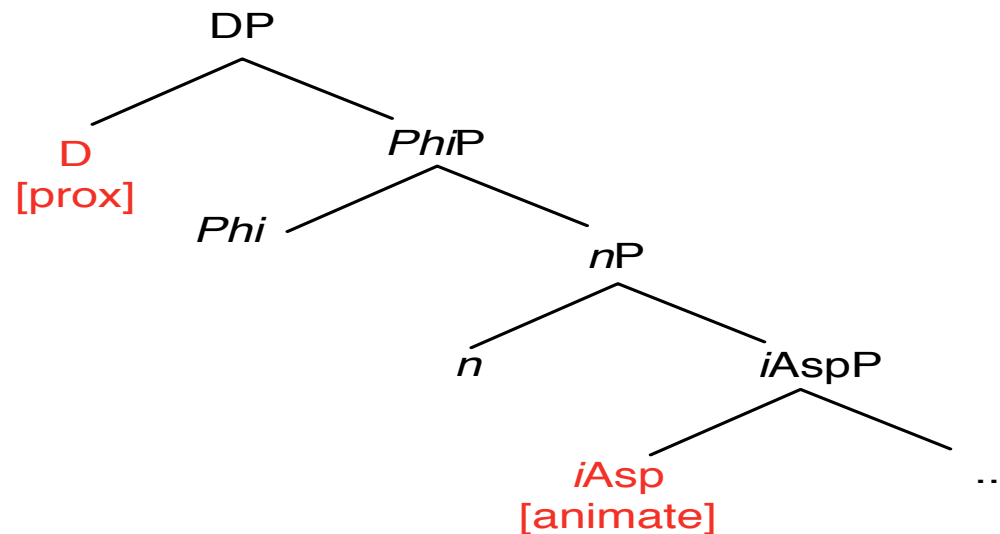
Overview

1. **Effects of animacy** in natural language
   i) ontological underpinnings
   ii) when grammar rules

2. **Background** on narrow syntax and the universal spine

3. **Macro-variation** in grammatical animacy marking:
   to have or not to have animacy

4. **Micro-variation** in grammatical animacy marking:
   variation in the locus of animacy

The "happy flower" puzzle

• How do you talk about fictional worlds where inanimate objects think, act and feel?

	The flower	is happy.
Strategy	**Subject**	**Predicate**
Mismatch	(*non-animate*)	[animate]
Reclassify DP	[animate]	[animate]
Reclassify predicate	(*non-animate*)	(*non-animate*)

... different Algonquian languages make different choices

The "happy flower" puzzle

- How do you talk about fictional worlds where inanimate objects think, act and feel?

		The flower	is happy.
Strategy		Subject	Predicate
Mismatch	Blackfoot	(*non-animate*)	[animate]
Reclassify DP	Plains Cree	[animate]	[animate]
Reclassify predicate	Unattested	(*non-animate*)	(*non-animate*)

The "happy flower" puzzle

(1) **Blackfoot:**

amo-**istsi**   pisatssaisski-**istsi**   iik-**i'taamssi**-y(i)-(y)aawa

this-**IN.**PL   flower-**IN.**PL   very-happy-be.**AI**-PL-PRON

'These flowers are happy.'

(2) **Plains Cree:**

awa   wāpikwaniy   **kisiwāsi**-w

this.**AN.**SG flower.**AN.**SG   be.angry.**AI**-3.SG

'This flower is angry.'

(Johansson 2008)

65

When grammar rules

Grammatically animate nouns of ontologically inanimate things

Meaning	[Animate] noun
'pipe'	kippiaapi
'blood clot'	katoyis
'stove'	po'táa'tsis
'finger'	mookítsis
'blanket'	si'káán
'wagon'	áínaka'si

F&R: 1995

When grammar rules

- "pipe" nouns have morphosyntactic properties of grammatically animate nouns
    - same nominal inflection as prototypical animate nouns:
    - may be subject of AI (not II) verb
    - may be object of TA (not TI) verb

(1) a.   póósa-wa/-yi/-iksi   b.   kippiaapi -wa/yi/iksi

            cat.AN-PROX/OBV/AN.PL   pipe.AN-PROX/OBV/AN.PL

(2)   ann-wa   ainaka'si   yaak-it-ipoyi-wa   ann-yi   kssahko-yi

       dem-PROX   wagon.AN   FUT-LOC-stand.AI-3   DEM-OBV ground-OBV

       'The wagon will be standing on the ground.'   (Kim 2014)

... but is it *i*Asp?

- **no ontological motivation** for classification of "pipe" nouns as [animate]
  - not capable of self-propelled motion
  - don't hold cognitive states
  - don't have physical properties of animate beings
- "pipe" nouns **don't** bear roles that require a **semantically animate** DP
  - *agent of transitive verb
  - *point-of-view holder
- set of "pipe" nouns is **arbitrary**
  - varies unpredictably across Algonquian languages

The category of animacy – a 2nd option?

• Which category of Bf (but not English) is constructed by association with formal content representing animacy?

kP
kP
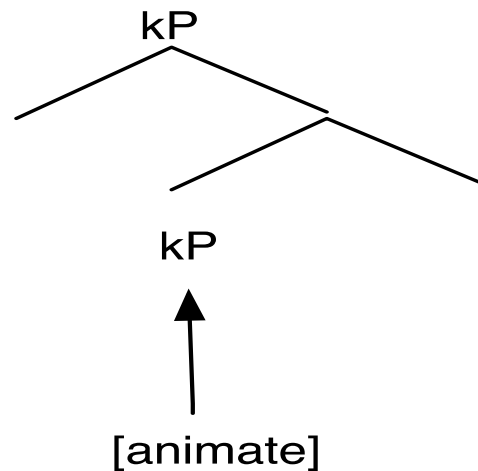
[animate]

The category of animacy – a 2ⁿᵈ option?

A universal hierarchy of abstract functions
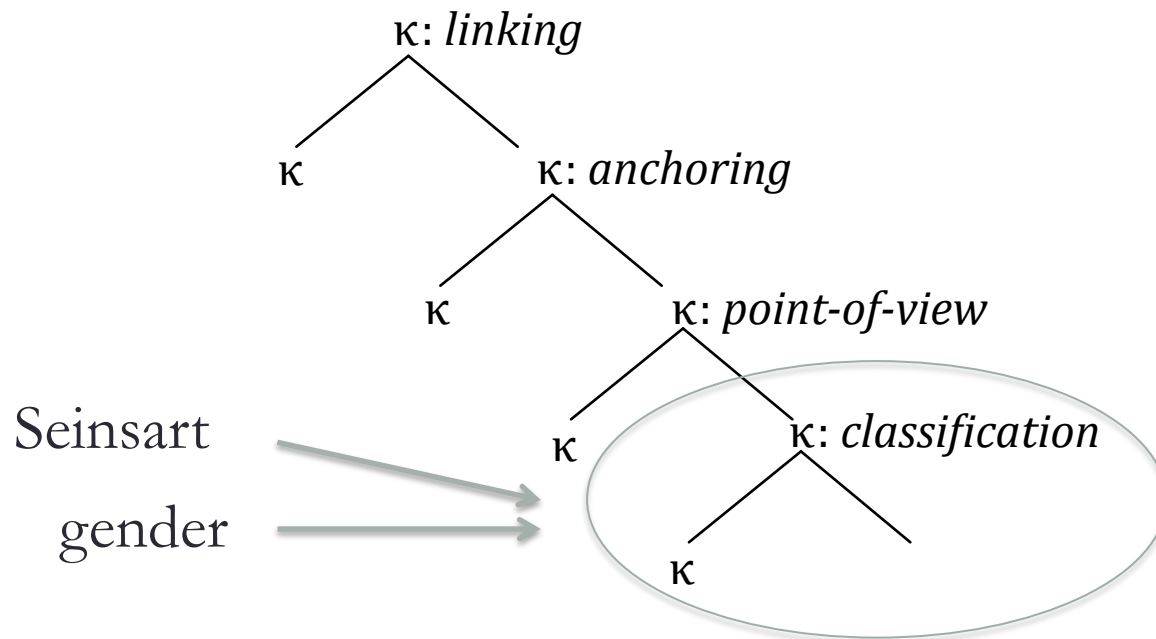
The category of animacy – a 2nd option?

(1) [animate] as gender

nP

n Root

↑

[animate]

"pipe"

(2) [animate] as lexical aspect
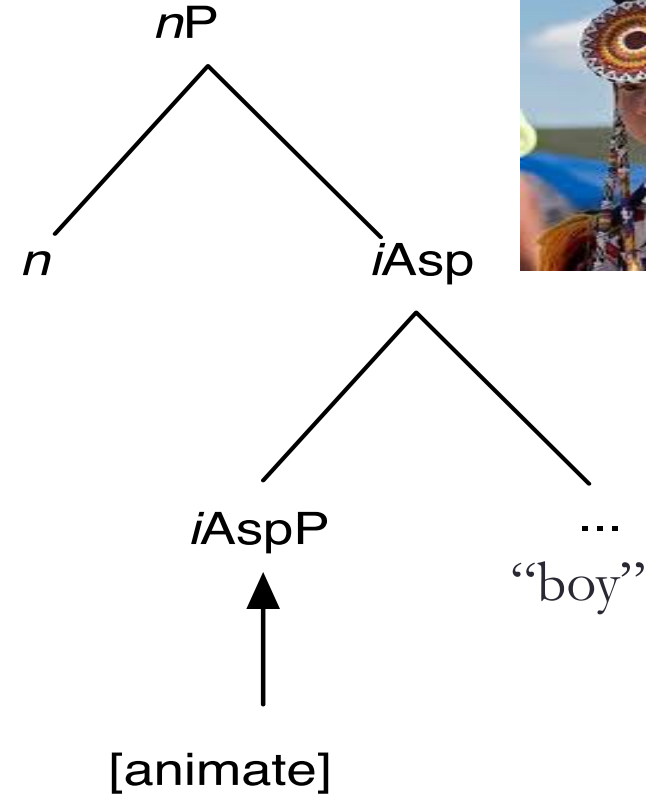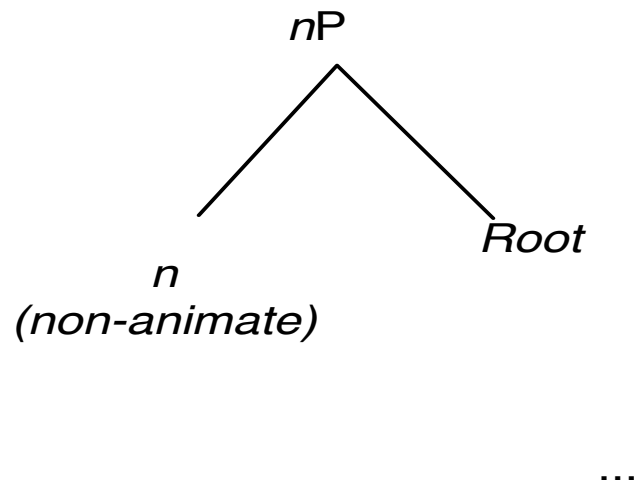
nP

n iAsp

iAspP   ...

↑

[animate]   "boy"

Two options for inanimate nouns

(1) inanimate as gender

nP
┌──────┴──────┐
n   Root
(non-animate)

...

(2) inanimate as lexical aspect

nP
┌──────┴──────┐
n   iAspP
      ┌──────┴──────┐
    iAsp   ...
(non-animate)

Two options for inanimate nouns

(1) inanimate as gender

(2) inanimate as lexical aspect

nP
├── n (non-animate)
└── Root
    ...

Blackfoot

nP
├── n
└── iAspP
    ├── iAsp (non-animate)
    └── ...
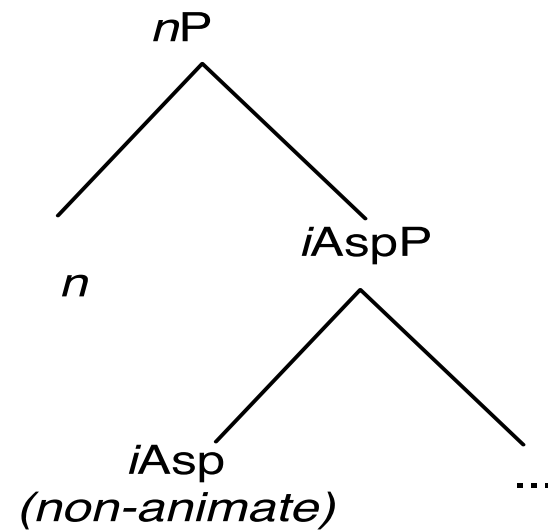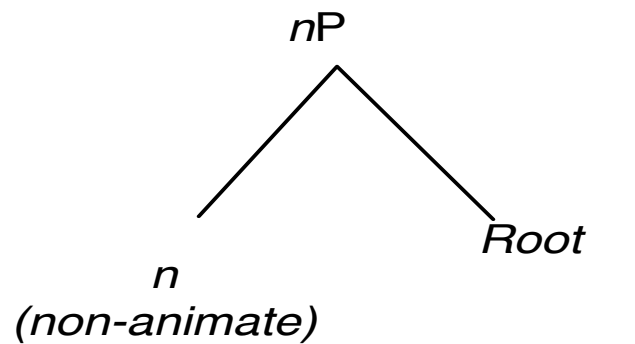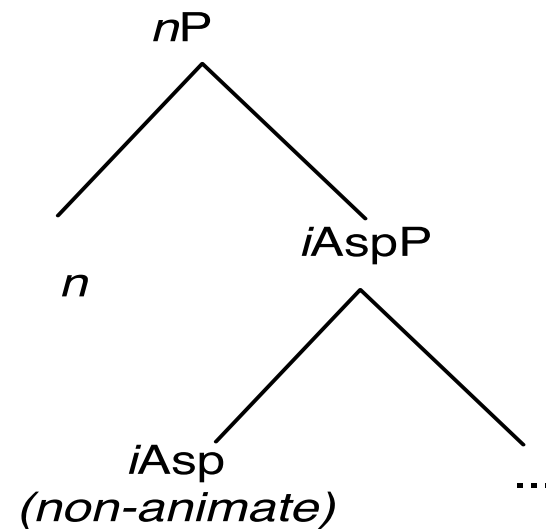
Plains Cree

Two options for "happy flowers"

(1) inanimate as gender

(2) inanimate as lexical aspect

*n*P
  n
  (non-animate)
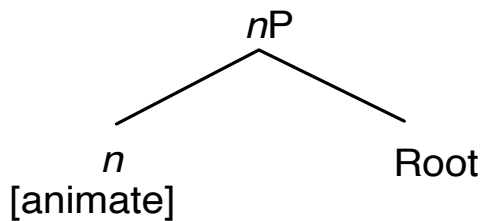 *Root*

...

*n*P
  n
  *i*Asp
    *i*AspP
      [animate]
    ...
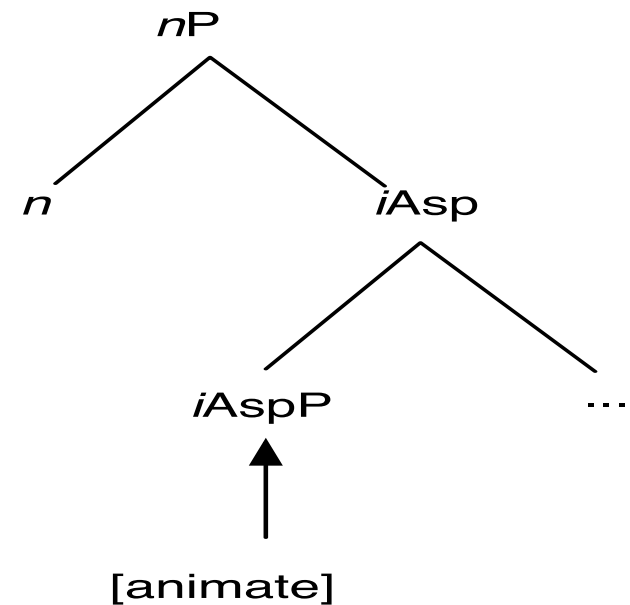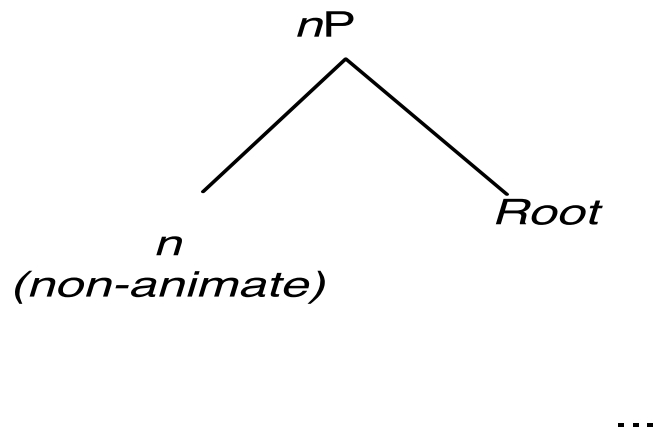
Blackfoot:

-no change
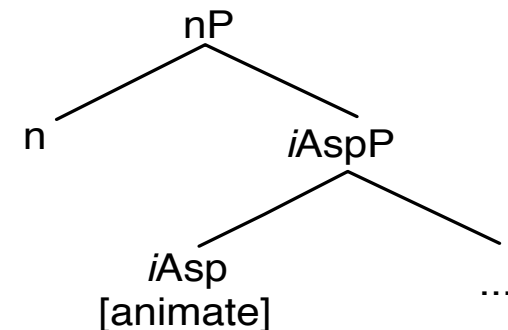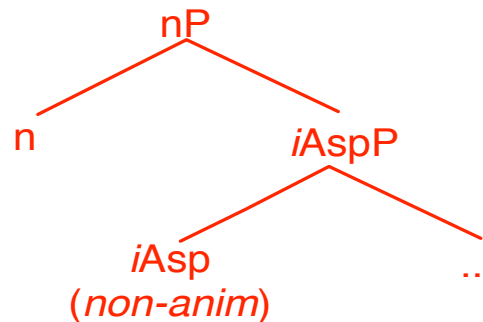
Plains Cree
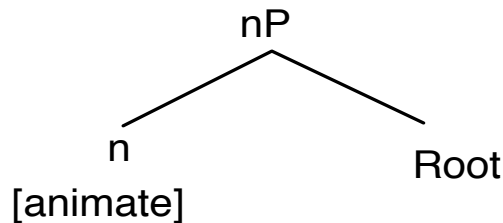
add [animate]

Microvariation in the representation of inanimate nouns:

Blackfoot: All nouns that denote (normally) inanimate entities lack *i*AspP
       Rigid, arbitrary animacy specification = gender in *n*
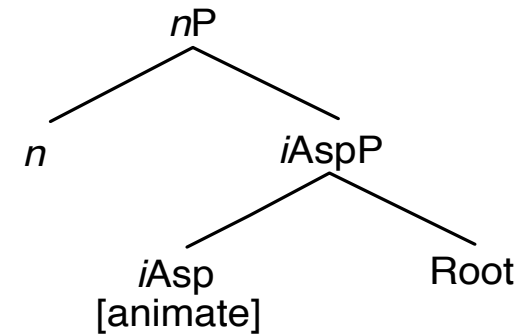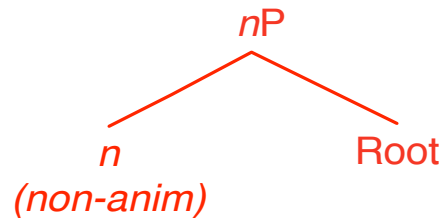
Plains Cree: Only "pipe" (animate) DPs lack *i*AspP;
       Flexible, non-arbitrary animacy specification = *Seinsart* in *i*ASp

Goals

- **Empirical claim**
  - *Animacy* may or may not be part of the grammatical system of a language

- **Theoretical problem**
  - What does it mean for animacy to be part of the grammatical system? [animate] associates with the universal spine.
  - And why isn't this universal? Languages vary in their feature inventories.

Thank you.

Extending the analysis:
Flexible mass nouns in English

- English **flexible** mass nouns (e.g. *chocolate*) are like Plains Cree inanimates:

    -flexible, non-arbitrary boundedness specification

    →compatible with both count and mass syntax
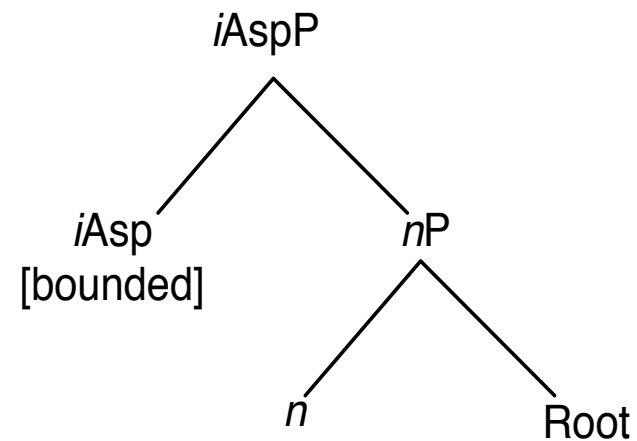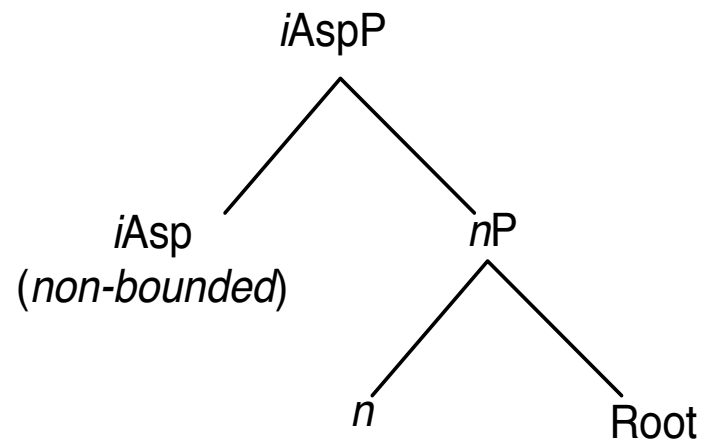
The cognitive importance of animacy

It is also the case that infants distinguish between inanimate objects and animates, namely humans, in important ways. For example, they recognize that humans are self-propelled while inanimate objects move only after contact with another object.

<div align="right">Kuhlmeyer, Bloom & Wynn 2004: 95</div>

…human thought is organized as a system. I explore the hypothesis that the cause of this difference is a grammatical way of structuring semantic information, and I present evidence that **the organization of grammar precisely reflects the organization of a specific mode of thought** apparently distinctive of humans.

<div align="right">Hinzen 2013: 1</div>

Variation in categorial inventories

κ: *linking*

κ: *anchoring*

κ: *point-of-view*

κ: *classification*

UoL
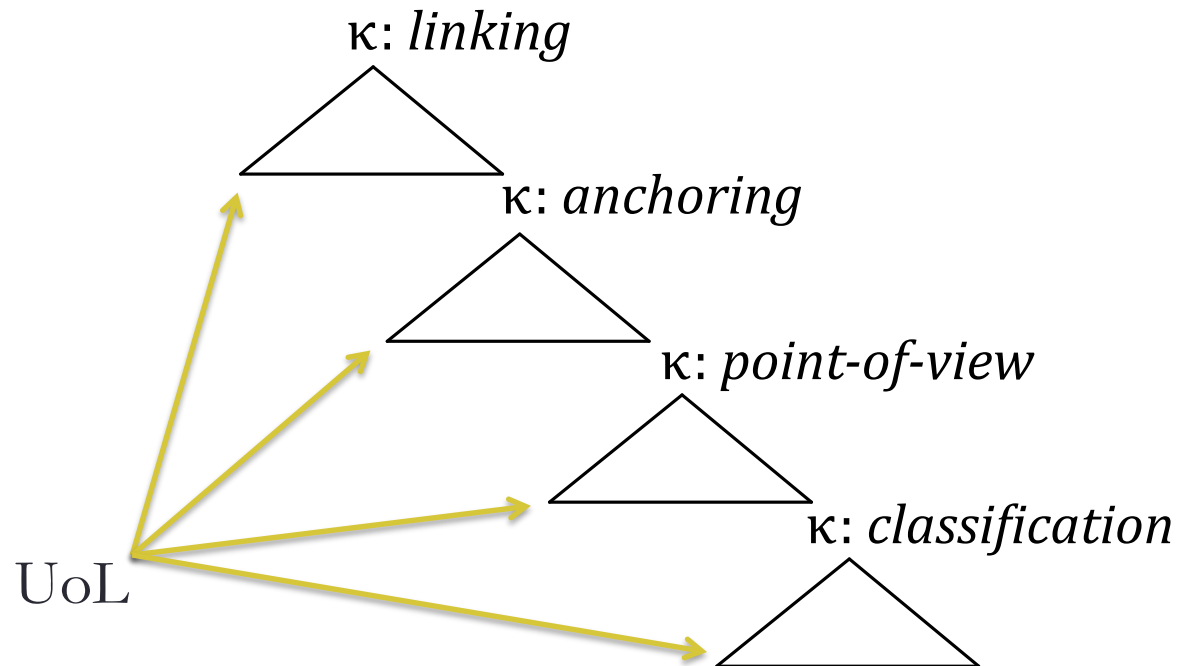
Distributional and functional properties of categories may vary despite similar content

No grammaticalized count-mass distinction in Bf

- Blackfoot: bare NP arguments must be objects of morphologically intransitive (AI+O) verb

(1)   na-ooyi-wa   (*ani)   mamii/akoopis

          NA-eat.**AI**-3SG   DEM   fish.an/soup.IN

          'S/he ate (fish/soup).'

(2)   na-oowatoo-m-wa   *(ani)   akoopis

          NA-eat.**TI**-TH-3SG   DEM   soup.IN

          'S/he ate *(that) soup.'

Animate delimiting arguments

<u>Blackfoot</u>:   underived TA verbs: ✓ non-core [animate] objects
underived TI verbs: ✗ non-core (*non-animate*) objects

(1) a.   nit-ohpommo-a-wa   **om-wa**   **aakiikoan** amo-istsi   asoka'sim-istsi
1-buy.TA-dir-3sg   DEM-PROX girl   DEM-PL   dress-PL
'I bought from **that girl** these dresses.'

b.   nit-it-ohpommatoo-'p-yaawa   **amo-istsi**   **asoka'sim-istsi**
1-there-buy.TI-1:iIN-3SG   DEM-PL   dress-PL
om-yi   iitaophomao'p-yi
DEM-OBV   store-OBV
'I bought **these dresses** from the store.'   (Bliss 2010)