

How do languages classify their nouns?
Cross-linguistic variation in the manifestation of the mass count distinction

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I have three goals in this paper: Empirically, I establish that nominal classification varies across languages. My second goal is an analytical one. I wish to show that Animacy in Blackfoot is not to be considered a Gender distinction. Instead I argue that it is formally identical to the mass/count distinction in Indo-European languages. My third and final goal is to argue that the two nominal classification devices (animacy and the mass/count distinction) are two instances of the same category, namely *nominal inner aspect*.

1 Nominal classification varies across languages

The empirical goal of this paper is to establish that languages differ in the way they classify their nouns. In particular, I compare the classification systems found in Blackfoot (Algonquian) with those of German and English. I demonstrate that we find three distinct systems: while Blackfoot classifies nouns in terms of animacy only, English classifies nouns in terms of the mass/count distinction, and in German we find a two-way classification in terms of both mass/count and gender. This is summarized in table 1.

	Blackfoot	English	German
mass/count	✗	✓	✓
Animacy	✓	✗	✗
Gender	✗	✗	✓

Table 1: Nominal classification across languages

I start with a discussion of the mass/count distinction, which functions as a classification system in German and English, but not in Blackfoot. This is not to say that Blackfoot nouns cannot refer to substances or individuals. There is still an ontological distinction but it does not serve as a formally grammaticized classification device. I will assume that the difference between an ontological distinction and a formal distinction correlates with a categorical difference, which is in turn reflected structurally. In particular, I assume that roots are

category-neutral (Marantz 1997) and are categorized by categorizing heads, in this case *n* (Marvin 2003, Steriopolo 2008). I further assume that roots are devoid of any grammatical features and consequently that formal properties are restricted to categorial heads, such as *n* or F in (1).

- (1) [_{FP} F [_{NP} n [_√root]]]
 Formal properties ontological properties

In what follows, I establish some diagnostics for a formally active mass/count distinction, which I will henceforth refer to as a *boundedness* distinction.

First, in a language with a grammaticized boundedness distinction, it is subject to *selectability*. Thus, certain determiners and quantifiers are sensitive to this distinction ((2) and (3)), pluralization targets count nouns only ((4) and (5)), and only mass nouns can function as bare arguments (6).

- (2) a. *the/a/this/that/one/every/each/no/ tree*
 b. *these/those/two/several/some/many/no/all tree-s*
 c. **much/*little tree(s)*
- (3) a. *? the/*a/this/that/*one/*every/no wood*
 b. ** these/*those/*two/*several/*some/*many woods*
 c. *some/no/all/much/little wood*
- (4) a. *There is a snowflake in my garden.*
 b. *There are snowflakes in my garden.*
- (5) a. *There is snow in my garden.*
 b. ** There are snows in my garden.*
- (6) a. *I saw snow.*
 b. *I saw snowflakes.*
 c. ** I saw snowflake.*

Another criterial diagnostic for a formal boundedness distinction is the existence of *mismatches*. In particular, the value of the formal boundedness distinction is not always predictable from ontological properties. The nouns in (7) denote individuals (rather than substances) but formally behave like mass nouns.

- (7) *furniture, silverware, grass, homework, luggage....*

And finally, if a language has a formal boundedness distinction for nouns it has *strategies for reclassification*. For example, English has classifiers naming the unit of natural occurrence of a substance and such classifiers turn mass nouns into count phrases.

- (8) a. *I didn't see many drops of water.* (*I didn't see much water.*)
 b. *I didn't see many grains of sand.* (*I didn't see much sand.*)

Having established three diagnostics for a formal boundedness distinction (selectability, mismatches, reclassification strategies), we can now turn to

Blackfoot which lacks such a distinction. First, to the best of my knowledge there are not determiners or quantifiers sensitive to a boundedness distinction. For example the universal quantifier *ohkan* ('all') and the modifier *i'nák* (small, little) can combine with both substance and individual nouns (which I take to be the prototypical candidates to express a boundedness distinction).

- (9) a. *nitohkanaissimatoo'p annihkayi aohkii*
 nit-**ohkan**-a-simatoo.vti-'p anni-hka-yi aohkii
 1-all-dur-drink.vti-2/1>in det-invis-in.sg water
 'I drank (up) all of that water.'
- b. *nitohkannainowayi anniksisk pookaiks*
 nit-**ohkan**-a-ino-aa-yi ann-iksi pooka-iks
 1-all-dur-see.vta-dir-pl det-pl. child-pl
 'I saw all the children.'
- (10) a. *i'náksikoo'nksko* b. *i'nákaohki* c. *i'nákónnikis*
 i'nák- kóónssko i'nák-aohki i'nák-ónnikis
 small-snow small-water small-milk/breast
 'a little bit of snow' 'a little bit of water' 'a little bit of mil'
- (11) a. *i'náksipokaa* b. *i'nakánao'kssi* c. *i'nákónnikis*
i'nák-pokaa **i'nák**-ánao'kssi **i'nák**-ónnikis
 small child small-halfdollar small-milk/breast
 'baby' 'quarter of a dollar' 'small breast'

Furthermore, virtually all Blackfoot nouns are associated with a lexical entry for plural in Frantz & Russell's 1995 dictionary. Below I list some examples of pluralized nouns denoting substance:

- (12) a. *sopo* *ikkináisopoistsi*
 'wind' 'soft winds'
- b. *aaapan* *aaapaistsi*
 'blood' 'bloods'
- c. *aiksinoosak* *aiksinoosakiksi*
 'bacon' 'bacon' (slabs or slices of)
- d. *isstsškáán* *isstsškááistsi*
 'dust' 'dust' (pl.)
- e. *isttsiksipoko* *isttsiksípokoistsi*
 'salt' 'salts'
- f. *kaatsi* *káatsiistsi*
 'driftwood' 'pieces of driftwood'
- g. *kokóto* *kokótoistsi*
 'ice' 'ice' (plural) Frantz & Russell 1995

And finally, the availability of bare arguments does not correlate with a distinction in boundedness. Neither substance nor individual nouns can function as bare arguments ((13) and (14)), but both can function as VP-internal (semantically incorporated) arguments ((15) and (16)).

- (13) a. *nitaissimatoop omi aohki*
 nit-a-simatoo.vti-‘p omi aohkíí
 1-dur-drink.vti-2/1>in dem water
 ‚I’m drinking that water.’
- b. **nitaissimatoop aohki*
 nit-a-simatoo.vti-‘p aohkíí
 1-dur-drink.vti-2/1>in water
- (14) a. *nitsinoaa oma piita*
 nit-ino-aa oma piita
 1-see.vta-dir det eagle
 I saw the eagle
- b. **nitsinoaa piita*
 nit-ino-aa piita
 1-see.vta-dir eagle
- (15) a. *nitaissimi aohki*
 nit-a-simi aohki
 1-dur-drink.vai water
 I drink water
- b. **nitaissimi omi aohki*
 nit-a-simi omi aohki
 1-dur-drink.vai det water
- (16) a. *nitsiyáapi piita*
 nit-yáapi piita
 1-see.vai eagle
- b. **nitsiyapi oma piita*
 nit-yáapi oma piita
 1-see.vai det eagle

Another striking fact about Blackfoot is that there does not seem to be a dedicated strategy for reclassification. This can already be seen in the examples in (10) and (11), which show that the same noun can be used to refer to a bounded or an unbounded individual. On several occasions I have asked my consultant how to say things like ‘several pieces of wood’ or ‘snowflake’ and she would consistently use nouns with a modifier that is compatible with both substance and individual nouns. Below are two more illustrative examples:

- (17) a. *iikakayi amostsi mistists*
 iik-aka-i amo-istsi mistis-istsi
 int-many-be wood-pl.inanim wood-pl.inanim
 ‚There is a lot of wood.’
 MW: “Is there a way to just say “piece of wood”?”
 BB: “No. We don’t get into this kind of stuff.”
- b. *iikakayimi amoksi mistiks*
 iik-aka-imi amo-iksi mistis-iksi
 int-many-be.anim wood-pl.anim wood-pl.anim

‘There are a lot of trees.’

This much establishes that Blackfoot does not formally classify its nouns along a distinction in boundedness. This does however not mean that nouns cannot refer to either substances or individuals, just that this ontological distinction does not map onto a formal classification system.

2 Blackfoot animacy

My next goal is to analyze the pervasive nominal classification device Blackfoot does make use of, namely *animacy*. I first identify the analytical challenge we are facing (2.1), then I show that Blackfoot animacy is not a gender distinction of the German type (2.2). Instead I argue that it is formally equivalent to a boundedness distinction (2.3).

2.1 Is animacy like gender or like boundedness?

Consider again the distribution of nominal classification devices across the three languages under investigation. German has both a distinction in terms of gender and boundedness. The two classification devices are independent of each other, as evidenced by the fact that the boundedness distinction cuts across the gender distinction: we find bounded and unbounded nouns across all three genders as shown in table 2:

	[+bounded] (count)	[-bounded] (mass)
[masc]	<i>viele Bäume</i> ‘many trees’	<i>viel Wein</i> ‘much wine’
[fem]	<i>viele Birnen</i> ‘many pears’	<i>viel Musik</i> ‘much music’
[neut]	<i>viele Autos</i> ‘many cars’	<i>viel Wasser</i> ‘much water’

Table 2: German nouns are classified in terms of gender and boundedness.

This pattern suggests that there are at least two layers of nominal classification: one for gender and one for boundedness as schematized in (18).¹

$$(18) \quad [{}_{nP} \quad {}_{n2}[\pm\text{bounded}]] \quad [{}_{nP} \quad {}_{n1}[\text{gender}]] \quad [\sqrt{\text{root}}]]$$

If there are indeed two layers of nominal classification made available by universal grammar (UG), then the question arises as to which of these two layers Blackfoot animacy is associated with? In other words, does Blackfoot animacy behave formally like gender as in (19) or like boundedness as in (20).

$$(19) \quad [{}_{nP} \quad {}_{n2}[\pm\text{bounded}]] \quad [{}_{nP} \quad {}_{n1}[\text{gender}/\pm\text{animate}]] \quad [\sqrt{\text{root}}]]$$

$$(20) \quad [{}_{nP} \quad {}_{n2}[\pm\text{bounded}/\pm\text{animate}]] \quad [{}_{nP} \quad {}_{n1}[\text{gender}]] \quad [\sqrt{\text{root}}]]$$

¹ For now I simply assume that boundedness is associated with the higher position. I return to this issue in section 3.

In this paper I present evidence for the view that animacy is the formal equivalent of the mass/count distinction. The first argument is a typological one. We observe that in the (admittedly limited) sample of languages under consideration, animacy and boundedness are in complementary distribution, while gender and boundedness are not. Taking complementarity to be the hallmark of identity as in the structuralist tradition (see also Borer 2005) we have a first argument against animacy as a form of gender. In the next subsection I present evidence that animacy is formally distinct from gender.

2.2 Blackfoot animacy is not a form of gender

The view that animacy is gender corresponds to the traditional Algonquianist view (Dahlstrom 1995, Darnell & Vanek 1976, Goddard 2002, Greenberg 1954, Hockett 1966, Joseph 1979). A contrastive examination of German Gender and Blackfoot animacy reveals that the two classification devices differ in formal and functional properties. For example Kilarski 2007: 334 points out that “*the principal differences between Algonquian and Indo-European gender, apart from the different number of genders — usually two or three in Indo-European — involve the type of assignment criteria: in contrast to Algonquian, semantic criteria in Indo-European are usually weaker, being combined with formal ones (morphological or phonological). Furthermore, sex, rather than animacy, is the primary distinction [...].*”

Here I am mainly concerned with the formal differences suggesting that we are dealing with two distinct nominal classification devices. I present two pieces of evidence. First, in German, all nominalizing suffixes are classified for gender; this is not true for Blackfoot animacy. Second, in German all nouns are associated with a unique value for gender; in contrast, there are numerous Blackfoot nouns that are associated with different values for animacy.

2.2.1 Classification of nominalizing suffixes

Nominalizing suffixes in German are all associated with a unique value for gender. The suffix *-ik* attaches to roots (which do not exist as independent words) and derives feminine nouns (21). The suffix *-er* attaches to roots and derives masculine nouns (22).

- | | | | | | |
|-----------------|-----------------------|----|--------------------|----|--------------------|
| (21)- <i>ik</i> | → [fem] | | | | |
| a. | <i>die Grammat-ik</i> | b. | <i>die Graf-ik</i> | c. | <i>die Mus-ik</i> |
| | det.f grammar | | det.f graphic | | det.f music |
| | ‘the grammar’ | | ‘the graphic’ | | ‘the music’ |
| (22)- <i>er</i> | → [masc] | | | | |
| a. | <i>der Lehr-er</i> | b. | <i>der Fahr-er</i> | c. | <i>der Gärt-er</i> |
| | det.m teach-er | | det.m driv-er | | det.m garden-er |
| | ‘the teacher’ | | ‘the driver’ | | ‘the gardener’ |

There is evidence that the gender of the resulting noun is in fact dependent on the suffix rather than being determined by the root. There are some nominalizing suffixes that attach to existing nouns (as apposed to roots) which are already associated with gender. When suffixed with the nominalizer *-in* the resulting noun is of a different gender as shown in (23) suggesting that it is the suffix itself which determines the gender of the newly derived noun.

- (23) *-in* [masc] → [fem]
- | | | | | |
|----|------------|------------------|------------|------------------------|
| a. | <i>der</i> | <i>Architekt</i> | <i>die</i> | <i>Architekt-in</i> |
| | det.m | architect | det.f | architect-f |
| | | ‘the architect’ | | ‘the female architect’ |
| b. | <i>der</i> | <i>Lehrer</i> | <i>die</i> | <i>Lehrer-in</i> |
| | det.m | teacher | det.f | teacher-f |
| | | ‘the teacher’ | | ‘the female teacher’ |
| c. | <i>der</i> | <i>Student</i> | <i>die</i> | <i>Student-in</i> |
| | det.m | student | det.f | student-f |
| | | ‘the student’ | | ‘the female student’ |

The pattern in (21)-(23) suggests that nominal suffixes are associated with gender, and to the best of my knowledge, this is the case for all such suffixes. Note that this pattern also suggests that gender is associated with the lowest layer of nominal classification, as in (24).

- (24) $[_{nP} \ n_2[\pm\text{bounded}]]$ $[_{nP} \ n_1[\text{gender}]]$ $[\sqrt{\text{root}}]$

If gender was associated with the higher position, we may expect nouns and nominalizing suffixes that do not uniquely determine the gender of a noun. This is precisely the pattern we observe in Blackfoot, as I will now show.

The Blackfoot nominalizing suffix *a'tsis* can derive [+animate] nouns as in (25) as well as [-animate] nouns as in (26). (Since in Blackfoot, plural marking varies with the value for animacy I use it as a diagnostic throughout this paper.)

- (25) *a'tsis* → [+animate]
- | | | |
|----|-------------------------------|-------------------------------------|
| a. | <i>saa'kssoyaa'tsis</i> | <i>saa'kssóyaa'tsiiksi</i> |
| | <i>saa'kssoya-a'tsis</i> | <i>saa'kssóya-a'tsis-iksi</i> |
| | ‘poison ivy’ | ‘poison ivy plants’ |
| b. | <i>aawápsspiinao'sa'tsis</i> | <i>sikawapsspiina'sa'tsiiksi</i> |
| | <i>aawápsspiinao's-a'tsis</i> | <i>sikawapsspiina's-a'tsis-iksi</i> |
| | ‘eye-glasses’ | ‘black eye-glasses’ |
| c. | <i>ippotsísoohsa'tsis</i> | <i>ippotsísoohsa'tsiiksi</i> |
| | <i>ippotsísoohs-a'tsis</i> | <i>ippotsísoohs-a'tsis-iksi</i> |
| | ‘pants, overalls’ | ‘pants, overalls’ |
- (26) *a'tsis* → [-animate]
- | | | |
|----|-------------------------|-----------------------------------|
| a. | <i>isoohkamaa'tsis</i> | <i>poksisoohkamaa'tsiisti</i> |
| | <i>isoohkama-a'tsis</i> | <i>poks-isoohkama-a'tsis-isti</i> |
| | ‘container’ | ‘little storage bags’ |

- | | | |
|----|--|---|
| b. | <i>issáana'kima'tsis</i>
issáana'kim- a'tsis
candle, lit: fat lamp; | <i>issáana'kima'tsiistsi</i>
issáana'kim- a'tsis-istsi
'candles' |
|----|--|---|

For completeness note that it is not the underlying form which determines the gender of the derived form. The suffixation of *a'tsis* to a [+animate] nouns results in a [-animate] noun, as shown in (27).

- (27) *a'tsis* **[+anim] → [-anim]**
- | | | |
|----|--|--|
| a. | <i>issitsimaan</i>
issitsímaan
baby | <i>issitsimaaniksi</i>
issitsímaan- iksi
babies |
| b. | <i>issitsímaa'tsis</i>
issitsíma- a'tsis
'baby thing' | <i>nitssitsímaa'tsiistsi</i>
nits-issitsíma- a'tsi-istsi
'my baby things' |

We can understand the lack of animacy specification of *a'tsis* if we assume that this nominalizer is associated with the lower nominal layer and that animacy is a higher nominal classification device as shown in (28).

- (28) [_{nP} n₂[±animate] [_{nP} n₁[-*a'tsis*] [...]]]

2.2.2 Classification of nouns

The second argument that animacy in Blackfoot is formally distinct from German gender stems from the fact that some nouns are associated with two values, with a different albeit related meaning. Consider the example in (29). The same form *miistsis* can be used as a [-animate] noun to mean stick or branch or as a [+animate] noun to mean tree.

- (29) a. [-animate] *miistsis* *miistsíistsi*
 miistsis *miistsíis-istsi*
 branch branch-pl.inanim
 'stick, branch' 'branches'
- b. [+animate] *miistsis* *miistsíiksi*
 miistsis *miistsíis-iksi*
 tree tree-pl.anim
 'tree' 'trees'

This particular example is famous for it shows that animacy is not a notion which necessarily depends on the ontological properties of the referent. However, the general pattern appears to be moderately productive. That is, in Frantz & Russell's 1995 dictionary there are several such examples.

What is of interest in the present context is that the Blackfoot animacy specification differs from the German gender specification in precisely this respect. There are no nouns that are associated with two distinct genders and still

related in meaning.² If a given form has two possible genders associated with it is for one of the following two reasons. We are either dealing with accidental homophony or else gender is in free variation and does not correlate with a meaning difference.

I conclude that Blackfoot animacy is not a form of gender. It displays formal properties different from those associated with German gender: not all nominal suffixes are classified for animacy, and some nouns can be associated with two values. This is summarized in table 3 below.

	German Gender	Blackfoot Animacy
all nominal suffixes are classified	✓	✗
some nouns can have two values	✗	✓

Table 3: Differences between German Gender and Blackfoot animacy

2.3 Blackfoot animacy is like the boundedness distinction

In this section I show that Blackfoot animacy formally behaves like the boundedness distinction which gives rise to a formal mass/count distinction in Indo-European languages.

In contrast to Gender, the mass/count distinction is not always uniquely determined for a given noun. Consider the German nouns in (30)-(31). They can all be used as mass nouns, in which case they denote an unbounded substance, as in (30). When pluralized, these nouns must be interpreted as denoting bounded individuals, as in (31). In all these cases the bounded form is the special form in that its meaning is not completely compositional: the bounded form of water for example can be used to denote the little liquids used in a salon or spa (which may not even contain water). The bounded form of bread is used for sandwiches and the bounded form of light can be used for Christmas lights.

(30) [-bounded]

- a. *viel Wasser* ‘much water’
- b. *viel Brot* ‘much bread’
- c. *viel Licht* ‘much light’

(31) [+bounded]

- a. *viele Wässer* ‘many waters’ (i.e., in a hairsalon)
- b. *viele Brote* ‘many breads’ (i.e., sandwiches)
- c. *viele Lichter* ‘many lights’ (i.e., christmas lights)

This pattern is reminiscent of a pattern we find associated with Blackfoot animacy marking on nouns. There are many cases where the [-animate] form

² The so called common gender of Russian differs in this respect (see Steriopo 2008, Steriopo & Wiltschko, in press for discussion).

denotes the general referent, while the [+animate] is the special form. In this case it is often a culturally newer item.

- (32) a. [-animate] *ihtáísinaakio'p* *ihtáísinaakio'pistsi*
pencil, pen pencils/pens
b. [+animate] *ihtáísinaakio'p* *ihtáísinaakio'piksi*
camera cameras
- (33) a. [-animate] *ko's* *kó'sistsi*
dish (earthenware) dishes
b. [+animate] *ko's* *kó'siksi*
dish (tin/ metal) dishes
- (34) a. [-animate] *ksisáiki'taan* *ómahksiksisáiki'taanistsi*
arrowhead arrowheads
b. [+animate] *ksisaiki'taan* *ksisaiki'taaniksi*
cartridge cartridges

While I have nothing to say about the mechanism that would underly this pattern, it is of interest in the present context that animacy marking behaves like the boundedness distinction in German and not like the a gender distinction. In this context, an example from Fox cited in Goddard 2002 is of interest.

- (35) a. [-animate] *owi:ya:si* “meat, flesh”
b. [+animate] *owi:ya:sa* “a piece or cut of meat”
(Goddard 2002: 213)

In (35), the [-animate] form refers to a substance, while the [+animate] form refers to the bounded version of the substance. As such animacy marking seems to play a role in individuation. This is consistent with the claim that it occupies the same position as the boundedness distinction in Indo-European languages.

A second piece of evidence for animacy patterning with the boundedness distinction stems from the fact that animacy marking is subject to selectability. As mentioned above, Blackfoot singular and plural marking is sensitive to animacy marking. As illustrated in Table 4, *-wa* and *-iksi* are singular and plural markings associated with [+animate] nouns while *-yi* and *-istsi* are associated with [-animate] nouns.

	singular	plural
[+animate]	ponoká-wa ‘elk-sg’	ponoká-iksi ‘elk-pl’
[-animate]	í'ksisako-yi ‘meat-sg’	í'ksisako-istsi ‘meat-pl’

Table 4: number marking is sensitive to animacy

I interpret the sensitivity of number marking to animacy as an indication of selectability, one of the formal diagnostics for the boundedness distinction.

Another diagnostic we have identified in section two concerned mismatches between the meaning of the root and the nominal classification associated with it. That is, we have seen that the value of the boundedness distinction is not

always predictable from ontological properties. The same holds for the animacy distinction in Blackfoot: it cannot always be predicted on the basis of the ontological properties of the root.³ We have already seen instances of this in (29) and (32)-(34). But such mismatches between ontological and grammatical properties are not restricted to nouns associated with both values. There are also ontologically inanimate nouns that are grammatically classified as [+animate] as in (36). These nouns do not have a corresponding [-animate] noun.

- (36) a. pokón 'ball' d. moápssp 'eye'
 b. issk 'pail' e. naató'si 'sun'
 c. istoán 'knife' f. ksisíis 'thorn'

A final way in which animacy behaves formally like the boundedness distinction in Indo-European concerns its interaction with verbal aspect. It is well known that in English the boundedness distinction interacts with the verb to determine the telicity of the resulting VP. While an unbounded object (either mass or bare plural) derives an atelic VP, a bounded one derives a telic VP.

- (37) a. Yesterday's sun melted **a snowflake** (#but there is still some left)
 b. Yesterday's sun melted **snow** (but there is still some left).
 c. Yesterday's sun melted **snowflakes** (but there are still some left).

In contrast in Blackfoot, it is the animacy distinction that interacts with the classification of verbal phrases. Like other Algonquian languages, Blackfoot verb stems are sensitive to the animacy of the object (in case of transitive verbs) or to the animacy of the subject (in case of intransitive verbs). This is summarized in table 5 (see Armoskaite in prep for a more fine-grained analysis).

Participants	participant inanimate	participant animate
final participant unmarked	II	AI
final participant marked	TI	TA

Table 5: Interaction of animacy with verbal classification

I am not aware of any such interaction between gender and verbal classification. Again, this makes Blackfoot animacy formally more similar to the boundedness distinction than to a gender distinction as illustrated in table 6

³ This is a pervasive property of animacy marking across the Algonquian language family and has attracted much attention in the literature. In particular, it has served as a major argument in the claim that animacy is a formal property (Bloomfield 1933, Black 1969, Dahlstrom 1995, Darnell & Vanek 1976, Goddard 2002, Greenberg 1954, Lehmann 1958) though attempts have been made to at least account for (if not predict) these apparent mismatches in semantic terms (Hallowell 1960, Black-Rogers 1982).

	Blackfoot	German	English
{Boundedness, Animacy}	✓	✓	✓
Gender	✗	✓	✗

Table 6: Nominal classification device

I thus conclude that Blackfoot gender is the formal equivalent of the mass/count distinction and as such is associated with the higher layer of nominal classification as illustrated in (38).

$$(38) \quad [{}_{nP} \ n_2[\pm\text{bounded}/\pm\text{animate}]] \quad [{}_{nP} \ n_1[\text{gender}]] \quad [\sqrt{\text{root}}]]$$

This leaves us with the question as to how two classification devices that appear very different in substantive content (animacy vs. boundedness) can be formally identical. I turn to this question in the next section.

3 Animacy as nominal inner aspect

Having established that Blackfoot animacy is formally equivalent to Indo-European boundedness we need to ask what the formal category underlying these two distinctions is. In other words, can we identify the categorial identity of n_2 such that we can unify both animacy and boundedness? In what follows, I argue that the answer is positive and that the underlying category is that of nominal aspect, in the sense of Rijkhoff 1991 (his *Seinsart*) (see also Muramatso 1998). In particular, I assume that it is the nominal equivalent of verbal inner aspect (in the sense of Travis 2000, see also MacDonald 2009). So just like there is an aspectual phrase between two layers of verbal categories as in (39), there is an aspectual phrase between two layers of nominal categories, as in (40).⁴

$$(39) \quad [{}_{VP} \ v \ [{}_{AspP} \ Asp[Asp]]] \quad [{}_{VP} \ V \ [\sqrt{\text{root}}]]$$

$$(40) \quad [{}_{nP} \ n \ [{}_{AspP} \ Asp[Asp]]] \quad [{}_{nP} \ n \ [\sqrt{\text{root}}]]$$

English: [±bounded]

Blackfoot [±animate]

I further propose that the difference between English and Blackfoot can be accounted for under the parametric substantiation hypothesis according to which Universal Grammar (UG) provides abstract functional categories which can be associated with different substantive content (Ritter & Wiltschko 2009). In particular, nominal inner Aspect is associated with the substantive content [±bounded] in English, and with [±animate] in Blackfoot. In this system animacy and boundedness compete for the same syntactic position, namely Asp. It thus follows that they are in complementary distribution. Consequently

⁴ I assume without further discussion that the nominal layer above AspP is responsible for the marking of relational nouns in Blackfoot.

Blackfoot lacks a grammaticized mass/count distinction while English lacks a grammaticized animacy distinction. The concepts bounded and animate can still be expressed at the root level within languages that do not grammaticize them.

4 Conclusion

I have argued that languages differ in the nominal classification devices they make use of. We have shown that a grammaticized mass/count distinction is not available as a nominal classification device across all languages: English makes use of it, Blackfoot does not. Instead Blackfoot uses animacy as its classification device. We have furthermore seen that languages can make use of more than one nominal classification device: German makes use of gender and a distinction in boundedness. This observation has raised the question as to whether Blackfoot animacy is more like German gender or like a boundedness distinction. The distributional properties of Blackfoot animacy indicate that it is formally more like the German mass/count distinction than like German gender. This casts some doubt on the traditional Algonquianist assumption that animacy is a form of gender. While this assumption appears to do justice to the notional similarity between the two categories, it doesn't capture its formal dissimilarities. Assuming that syntactic categories are defined in terms of their formal (and thus distributional) properties we are led to the opposite conclusion. In fact this assumption is at the core of the parametric substantiation hypothesis: functional categories cannot be identified by their content, precisely because their content can vary across languages.

5 References

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