THE DESTINY OF ROOTS
IN BLACKFOOT AND LITHUANIAN

by

Solveiga Armoskaite

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Abstract

Roots and their categorization constitute a fundamental aspect of knowledge about the structure of language. Essentially, the categorization of roots serves to classify linguistic information. In this dissertation I explore the categorization of roots in Blackfoot (Algonquian) and Lithuanian (Baltic), languages which are unrelated typologically or genetically.

Relying on the interaction between roots and affixes, I develop language specific diagnostics necessary to establish the categorial affiliation of a given root. I show that all Blackfoot roots are uniquely associated with a particular category, i.e. they are categorized. Meanwhile, Lithuanian roots split into two types: some are categorized, and some are category-neutral. This variation in the categorization of roots requires an explanation.

I propose that the categorial destiny of a root is determined by (i) a category intrinsic feature ***c*** (such as e.g., animacy, gender, transitivity, and degree); and (ii) the categorization structure hosting the feature *c*.

There are two sources of variation: i) the origin of the feature *c;* and ii) the content of the feature ***c***. Roots that are endowed with the feature ***c*** prior to syntax are of a unique category; roots that attain their feature ***c*** in syntax are category-neutral. In addition, the content of feature ***c*** may differ across languages.

According to this proposal, the notion of *category* is not a primitive but a construct.

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Abbreviations

ACC	accusative case
ADJZ	adjectivizer
ADV	adverb
AN	animate
DET	determiner
DIM	diminutive
DAT	dative case
COM	common
CAUS	causative
FUT	future
FEM	feminine
FREQ	frequentative
IMP	imperfective
IMPER	imperative
INF	infinitive
IN	inanimate
INT	intransitive
INTS	intensifier
MASC	masculine
MED	medial
NOM	nominative
NOMZ	nominalizer
NONAFIRM	nonafirmative
LOCALIZER	localizer
OBV	obviation
PARTC	participle
PAST	past
PL	plural
POSS	possessive
PREF	prefix
PROX	proximate
REFL	reflexive
SG	singular
SUF	suffix
SUF_A	adjectival suffix
SUF_D	degree suffix
SUF_{PR}	pronominal suffix
SUF_N	nominal suffix
SUF_V	verbal suffix
TA	transitive animate
TI	transitive inanimate

Acknowledgements

All research is born out of dialogue, whether real or imaginary, and I am indebted to many people who have kept the dialogue going over the years, and to many more that have spoken to me from the pages of their writings. Forgive me if I miss your name – there are too many to tally.

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Skipping some years back in time, I am grateful to my mentors in my MA and BA studies. I blame **Carol Lord** for getting me interested in syntactic typology while insisting that I be practical. **Erika Sausverde** and **Vytas Karpus** introduced me to Akademia*:* even amidst a coup, while Russian tanks rolled through town, we still found time and guts to study Gothic and runes. And our gang of **Tea Lovers –** Agnė, Algis**,** Alma, Asta M., Asta Č., Gabrielė, Jolita, Karolis, Laima, Laurynas, Linara, Raimonda, Rokas, Mantas, Simas, Šarūnas... shared the lightness of being that only freshmen command.

Last but not least I learned of dissent at **Grazina Sluckaite's** home. I also learned the price one has to pay for it.

My family knows who they are because of what I put them through. ***Ačiū. Gracias***.

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To my children

Aisha (4 years): I know everything because I talk a lot.
Ignas (5 years): No one knows everything. Only the people who have ‘magination know everything. And if you do not have ‘magination, you are brain dead.

Chapter 1 Introduction: what determines the destiny of roots

The goal of this introductory chapter is twofold: (i) to contextualize the research question; and (ii) to give a brief of overview of the dissertation as a whole.

Section 1.1 introduces the research question: how are non-functional roots categorized as (nouns, verbs and adjectives)? Specifically, two kinds of roots are discussed: intrinsically categorized roots and category-neutral roots. Section 1.2 provides the context necessary to understand how the two notions of roots emerged. Section 1.3 introduces the proposal that recognizes both notions of root as valid based on cross-linguistic variation in root types. Section 1.4 provides a chapter by chapter overview of the thesis. Section 1.5 briefly explains the methodology used to obtain the data.

1.1 The controversy: two notions of roots

In this dissertation, I present two case studies of categorization. In particular, I study the patterns of categorization associated with roots in two unrelated languages: Blackfoot (Algonquian) and Lithuanian (Baltic).

The study has developed as an attempt to explain what determines the categorial identity of roots in the two languages, i.e., what makes a particular root a verb, a noun or an adjective? In trying to answer these questions, I will explore:

(i) the notion of root;
(ii) the notion of category;
(iii) the range of means available for diagnosing of categorial affiliation.

The notion "root" has at least two guises in current linguistic theory. Traditionally, a root is defined as the smallest, non-decomposable, non-functional (referring to the real world) part of a word endowed with an intrinsic category (Hockett 1958). More recently, the term root has come to refer to a more abstract notion. In particular, it refers to elements which contain conceptual meaning only, but which lack

any type of grammatical information, including category, argument-structure, event-structure, etc. (cf. Marantz 1997 et seq., Borer 2004, Arad 2005, among others). On this definition roots are intrinsically category-neutral, and obtain their categorial affiliation from particular syntactic environments.

The two notions of root are at odds with each other. Rather than settling for one definition, I have chosen to investigate which one captures the behaviour of Blackfoot and Lithuanian roots.

To distinguish the two notions throughout the thesis, I will use regular font to refer to roots in the traditional sense. In contrast, I will use small capitals to refer to the more abstract notion of roots which are by definition category-neutral.

(1) root **def** = non-decomposable conceptual part of a word with categorial information
ROOT def = simplex correspondence between sound and conceptual content, devoid of any grammatical information (including categorial information)[1]

Do we really need to recognize the two notions of roots? The questions I pursue in this dissertation are related: are all roots ROOTS, and if not, why are not all roots ROOTS? I show that the two notions cannot be equated: not all roots are also ROOTS; and consequently, roots do not universally display category-neutral behaviour.

The relation between roots and ROOTS is not usually discussed because in the languages that have been investigated the two notions overlap: for example, many roots in English do indeed display category-neutral behaviour and as such appear to simultaneously be ROOTS.

The development of the abstract notion of ROOT goes hand in hand with the assumption that categorization is essentially syntactic. In what follows I give a brief overview of the assumptions that have led to the notion of category-neutral ROOTS.

[1] This differs from the definition of a morpheme. Distinct morphemes may or may not encode grammatical information and/or conceptual content. I.e., all roots are also morphemes, but not all morphemes are roots.

1.2 A brief history of ROOTS and categories

Traditionally, categorial information is intrinsically associated with roots in the lexicon. The classic subdivision into parts of speech - where verbs are characterized as events, nouns as entities and adjectives as properties (e.g., Dionysius Thrax in Robins 1997:41) - applies not only to words but also to roots. It has been argued that syntax is sensitive to this categorial information: selection for a particular linguistic object is based on the categorial information that it encodes (Chomsky 1965). Hence the term categorial selection (henceforth, ***c***-selection). This view of syntax and the lexicon results in the following division of labour:

(2)	**Lexicon** contains linguistic objects[2] with categorial information	**Syntax** contains rules that are sensitive to categorial information

There are two consequences of this traditional approach. On the one hand, syntax does not have access to roots without categorial information. On the other hand, given that syntax sees categorial information, but not the root itself, there should be no distinction between derived categories and intrinsically categorized roots: both should pattern the same syntactically.

In the last half century, assumptions about the role the lexicon plays for categorization (and beyond) have changed. In the rule-based model of *Aspects* (Chomsky 1965) roots in the traditional sense as well as complex derived categories were re-written as N, V, A. In other words, word formation occurred in the lexicon, prior to syntax and syntax was viewed as handling linguistic objects with pre-packed categorial information.

(3)	**Lexical rules**	**Phrase structure rules**
	Roots:	
	N → father	NP → Det N
	V → dance	VP → V NP
	A → proud	AP → A PP

[2] 'Linguistic objects' is a cover term for morphemes and abstract features.

Complex forms:
N → fatherhood
V → classify
Adv → proudly

Word formation rules were viewed as occurring in a different component of grammar, namely the lexicon. Thus the lexicon was viewed as autonomous from syntax.

The Government & Binding (principles-based) model of the eighties (Chomsky, 1981a, 1981b) retained the separation between the lexicon and syntax. In this model, lexical categories are labels that play a role in the lexicon and in the syntax and thus mediate between lexical and syntactic information. In other words, categorial information drives the syntax-lexicon interface.

(4)

Lexicon:	**Syntax:**
Roots (and complex words) are intrinsically associated with categorial information	has access to the categorial information
$Root_N$ $Root_V$ $Root_A$	***c***-selects for N, V, A

Neither of these approaches differs significantly from the traditional assumptions: roots and complex forms cannot be distinguished, and roots cannot be accessed without categorial information, i.e. categorization is essentially lexical. Complex word formation including compounding, derivation and inflection is done prior to syntax, in a special component (morphology), which is part of the lexicon.

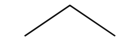
So how did the notion of *category-neutral ROOTS emerge?* I.e., how did *categorization become syntactic?*

Baker's (1988, 1996) syntactic approach towards noun-incorporation paved the path for a syntactic approach towards (some) word formation. Based on syntactic

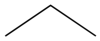
principles such as locality constraints (which state that syntactic relations should be local, restricted either by length or distance), Baker showed that noun-incorporation can be explained as a syntactic process. Along the same lines, Pollock (1989) argued that inflections of tense and agreement are each associated with their own syntactic functional head.

So if noun-incorporation (a form of compounding) is syntactic, and inflection is also syntactic, then maybe ***all*** word formation is syntactic. In other words, syntax reaches all the way down, and there is no boundary between syntax and the lexicon (Marantz 1997, Josefsson 1998, Arad 2005, Borer 2005, among others).

In a more radical version of the syntactic view, the category of a ROOT is contextually determined: if a ROOT appears in the context of tense (5)a, it is a verb; if it appears in the context of determiners (5)b, it is a noun.

(5) a. 

(= V)

b. 

(=N)

Thus the immediate functional context is responsible for the categorized behaviour of the category-neutral ROOTS, exemplified here by ***clear*** which can surface in any category:

(6) a. The banker goes to sleep with a **clear** conscience. Adjective
b. The banker wants to **clear** his name. Verb
c. The fraud charges are dropped, and the banker is in the **clear**. Noun

Note that one could argue that these examples are cases of zero derivation. However, as noted by Borer (2005, cf. Arad 2005), zero derivation should not be restricted to roots, yet derived forms do not display category-neutral behaviour[3]:

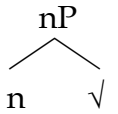
[3] Note that by 'derived forms' I have in mind derivation with affixes. There are examples that may appear complex but in fact contain simplex roots at the right edge. For example, both ***pocket*** and ***pick<u>pocket</u>*** contain the same root ***pocket***, which can be used nominally and verbally whether it forms a compound with ***pick*** or not;

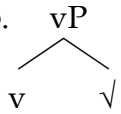
(i) a. Nick has a pocket in his jacket. b. Nick is world's fastest pickpocket.
(ii) a. Nick pocketed the money. b. Nick can teach you to pickpocket.

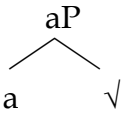
(7) a. #The banker goes to sleep with a **clarity** conscience. Adjective
b. *The banker wants to **clarity** his name. Verb
c. The fraud charges are dropped, and the banker appreciates the **clarity** of the decision. Noun

Derivational morphology fixes the category. This is an argument to recognize that category-neutrality at the root level is different from covert and overt derivational morphology[4].

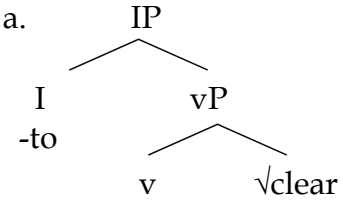
The radical version of categorization as determined by the root insertion site has a moderate version. Categorization can be captured as a structure with a functional head of its own. More specifically, each category may be given a syntactic position: v, n and a (Marantz 1997, Arad 2005, Marvin 2002). Thus, categorization occurs when a ROOT merges with a functional head n, v, or a, respectively:

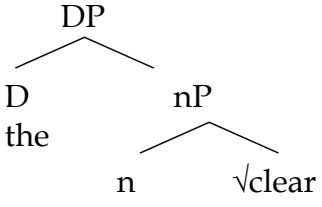
(8) a. 

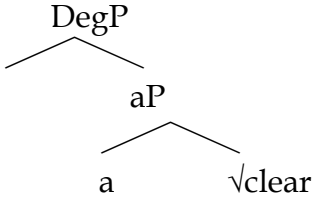
b. 

c. 

The assumption that ROOTS are not intrinsically associated with a categorial identity elegantly accounts for cases like English ***clear*** in the example (6) above. Assuming syntactic categorization, these examples are analyzed as in (9)[5].

(9) a. 

b. 

c. 

[4] Whether zero morphology is restricted to particular contexts or particular roots remains to be seen. Thus far, I could not find any particular pattern.

[5] To keep the focus on categorization, the syntactic trees are simplified here in the sense that there may be more functional projections available within these trees.

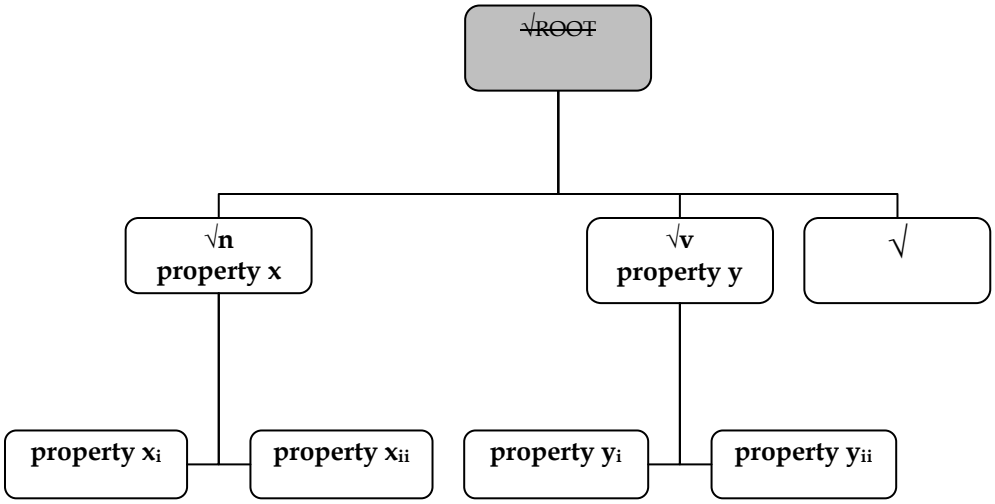
Thus once a ROOT combines with a categorial head, its categorial destiny is determined. But the root itself is NOT associated with categorial information (although there may be some exceptions, see Embick 2000[6]). If one takes this view, then one would expect to find that this is a property of Universal Grammar: all roots should be ROOTS, otherwise the formation of categories becomes a problem for the syntactic approach. Existing studies that look at English (Marantz 1997, Borer 2005), Swedish (Josefsson 1998) and Hebrew (Arad 2005) argue for ROOTS. My investigation of Blackfoot and Lithuanian distribution of roots shows that the beahvior of roots in the two languages does not fit the pattern of ROOTS. Based on this finding, I claim that not all roots are ROOTS . Then I propose how to reconcile the existence of two root types.

1.3 A synopsis of the proposal

Findings. Based on patterns of categorization, I show that in Blackfoot roots are intrinsically associated with grammatical information (chapter 2). Consequently, in this language roots cannot be equated with ROOTS (henceforth, the symbol √ is used to refer to either type of root in syntactic trees). Blackfoot roots encode whichever property is inherent to the root (such as, e.g., particular animacy or transitivity). Schematically, I represent the categorial system associated with Blackfoot roots as follows:

[6] To the best of my understanding, the issue of how small/big the number of exceptions is forms a part of active research agenda.

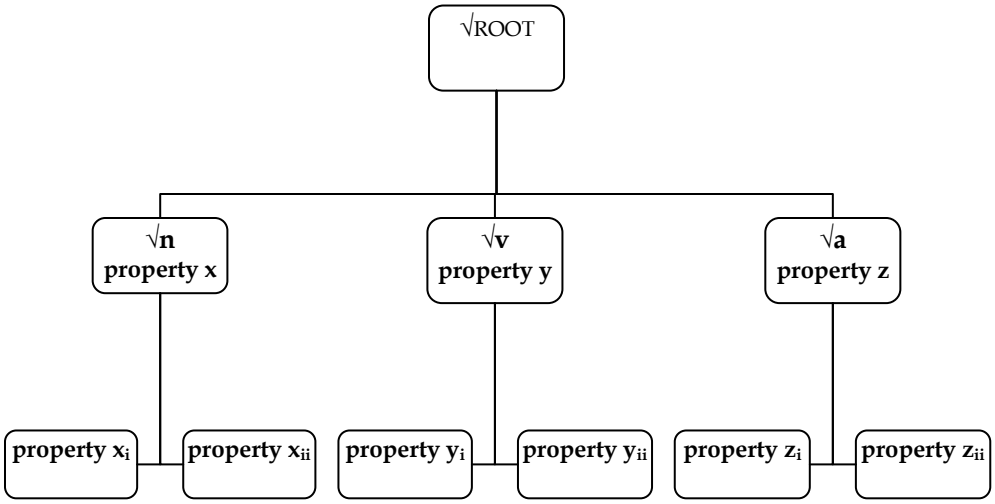
(10)



The lack of ROOTS in Blackfoot is indicated by shading and strikethrough. In addition, Blackfoot lacks adjectives as a category: there are no intrinsic properties to adjectives nor are the subcategories of adjectives. Instead, Blackfoot has what I refer to as *attributive modifiers*: these are roots of undeterminable category. In that sense, attributives are the elsewhere category in Blackfoot.

In contrast to Blackfoot, Lithuanian roots come in two guises: some are categorized and others are category-neutral (chapter 3). Thus in Lithuanian a subset of roots can be equated with ROOTS. In addition, Lithuanian has adjectives as a category. Diagram in (11) shows how Lithuanian roots are organized. Thus, Lithuanian roots are of a mixed stock: both roots and ROOTS are attested.

(11)



Based on the similarities and differences of roots in Lithuanian and Blackfoot, I argue that having or lacking an intrinsic property determines the categorial affiliation of roots.The tool I use to determine the categorial status of roots is ***c***-selectional restrictions that suffixes obey. Although the diagnostic suffixes are language specific, the principle is the same: particular suffixes select for particular subsets of roots.

Analytical challenge. The contrast between the Blackfoot and Lithuanian data forces us to recognize the variation in the patterns of categorization associated with roots, condensed in table 1:

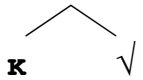
Table 1. Variation in root types

	roots	ROOTS
Blackfoot	✓	✗
Lithuanian	✓	✓

The analytical challenge is to account for the observed variation. Specifically, we first need to find a way to motivate the existence of different root types. Then we need to explain how roots and ROOTS coexist in one language (Lithuanian), yet ROOTS are lacking in another language (Blackfoot).

Proposal I propose that there exists a universal syntactic structure for categorization, where a categorizing head (henceforth **ĸ**) combines with a root:

(12)



I diverge from Marantz (1997) in that I argue that the content of the structure is subject to variation (in line with Ritter & Wiltschko 2009). In other words, there is variation in the content that fills **κ**: animacy, degree, transitivity and the like. The variance is determined by (i) the absence or presence of a category-specific property; and (ii) and which category specific property (if any) is present. Thus some roots are indeed category-neutral ROOTS, but other roots are not. In this case, roots encode some grammatical information and are not associated just with a simple sound-meaning correspondence.

1.4 A detailed overview of the thesis

In what follows I provide a synopsis of the chapters to follow thereby outlining the gist of the analysis in detail.

In **chapter 2**, I explore what determines the categorial affiliation of Blackfoot roots. I show that (i) roots that intrinsically encode animacy are nouns; (ii) roots that intrinsically encode transitivity are verbs; (iii) and roots that lack an intrinsic grammatical property are attributives. Thus, I propose that all Blackfoot roots (except for attributives) fall into categories based on a category-specific intrinsic property. My claims are supported by language internal tests: category-specific suffixes are sensitive to the property intrinsic to roots and c-select for particular roots based on that property. The category-specific property of nouns is animacy. The category-specific property of verbs is transitivity. Thus, nominal suffixes select for roots that encode animacy; while verbal suffixes select for roots encoding transitivity. The selectional restrictions of the suffixes are specific enough to pick out the range of manifestations possible within each category. To the best of my knowledge there are no suffixes that would attach to roots

of all categories, without category specific restrictions. For example, nominal suffixes select for either animate or inanimate nouns, while verbal suffixes select for either transitive or intransitive verbs. In other words, the distribution of suffixes also reveals subcategories within each category. The existence of empirically selectable sub-categories indicates that we are likely to find an overarching category. Lastly, I show that attributive roots are the elsewhere category in Blackfoot. Roots that do not encode any intrinsic selectable property and have no subcategories are attributive. In addition, attributive roots cannot be re-categorized into other categories because re-categorizers are category specific, too. Namely, all suffixes are sensitive to a property intrinsic to roots, so attributives cannot be c-selected due to lack of such an intrinsic property. Hypothetically, re-categorizing suffixes could be (i) either sensitive to a root intrinsic property and assign a property of a different category, (ii) or just assign a property of a different category to any root, its intrinsic property notwithstanding. It so happens that Blackfoot suffixes are sensitive to the properties intrinsic to roots. Hence in the case of the attributives, re-categorization fails. While it were plausible to expect that in the absence of an intrinsic properties attributive roots could be ROOTS, this is not the case due to properties of the suffixes. Thus, ROOTS are unattested in Blackfoot.

An interesting byproduct of the proposed analysis concerns the morpho-syntax of transitivity suffixes. In particular, verbs in the Algonquian literature have thus far been classified based on the traditional Algonquian template that relies on stems (discussed in more detail in 2.2). In this dissertation, I demonstrate that verbal roots must also be classified as such. This is shown on the basis of selectional restrictions associated with transitivity suffixes.

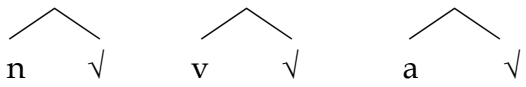
In **chapter 3**, I show how Lithuanian roots are categorized. In contrast to Blackfoot, Lithuanian has both roots and ROOTS. I first explore roots. To that end, I use the c-selectional restriction of suffixes. I show that some suffixes select for roots which intrinsically encode gender. These roots are nouns. Other suffixes select for roots that intrinsically encode transitivity. These roots are verbs. Lastly, I show that some suffixes

select for roots that intrinsically encode gradability. These roots are adjectives. Then I show that c-selection fails on ROOTS: ROOTS can combine with any suffixes and be of any category (albeit not of all subcategories). In that sense, the absence of diagnostics for ROOTS provides us with evidence for their existence.

In **chapter 4**, I propose an account for the categorization of Blackfoot and Lithuanian roots as well as Lithuanian ROOTS. This analysis allows us to understand the cross-linguistic variation in the categorization of roots. The proposal is couched within the principles and parameters framework in its minimalist incarnation (Chomsky 1995, 2002). In particular, I assume that syntax is driven by abstract features (Adger 2003; Embick 2000; Pesetsky & Torrego 2006, among many others). For derivations to proceed, uninterpretable features have to be valued. I propose that category-specific properties can be cast as the feature *Category* (henceforth feature ***c***)**.** I further adopt the Universal Base Hypothesis (Kayne 1995, Cinque 1999) according to which there is a universally fixed hierarchy of syntactic projections. I argue that the feature ***c*** has its own universally available syntactic head **ĸ** which belongs to the universally available Base. However, in contrast to Cinque (1999), I assume that the substantive content associated with functional projections is subject to variation (Ritter & Wiltschko 2009). Thus, while the feature ***c*** is [Animacy] for Blackfoot nominals, the feature ***c*** for Lithuanian nominals is [Gender].

I adapt the aforementioned categorization structure proposed by Marantz (1997) for Lithuanian ROOTS. Only are assigned their category by the independent functional elements n, v and a.

(13) a. nP b. vP c. aP



Marantz's proposal cannot however accommodate Blackfoot and Lithuanian roots. To account for the category-intrinsic property I use the abstract categorization feature ***c***. Thus a ROOT merges with a categorizer first, and then with the feature ***c*** (as in (14)a) or feature ***c*** merges with a root first, and then with the categorizer **ĸ** (as in (14)b):

(14) a. b.

feature ***c***

The categorization structure as well as the feature ***c*** are universal, in line with the Universal Base Hypothesis. However, its content may vary, e.g., the content of the nominal feature ***c*** is [Animacy] in Blackfoot, while it is [Gender] in Lithuanian.

In addition, the origin of the feature ***c*** varies with different root types. ROOTS and the feature ***c*** may be independent of each other and combine in syntax; while in case of roots the feature ***c*** becomes an intrinsic part of a root prior to syntax, i.e. the root and the feature enter syntax bundled up as an atom.

Finally, a given root may lack a category intrinsic feature ***c*** altogether. I argue that this is the case with Blackfoot attributives. The lack of the categorial feature results in the lack of the category adjectives, and consequently, the lack of categorization structure for these roots.

The chapter concludes with a prediction: if the feature ***c*** is a part of grammar, then one would expect to find independent evidence of its existence outside the domain of root categorization. This prediction is borne out, as shown in chapter 5.

Chapter 5 presents further evidence for the existence of the feature ***c***. Specifically, I demonstrate that ***c*** is found in re-categorization environments: when a linguistic object of one category shifts into another category, the feature ***c*** of the new category is added. Thus, for example, Blackfoot deverbal nouns are derived adding the feature [Animacy], while Lithuanian denominal verbs are derived adding the feature [Gender].

Re-categorization also confirms categorial restrictions of categorization in that one cannot derive either nouns or verbs from Blackfoot attributives. This is expected because Blackfoot lacks adjectives as a category. Given the absence of feature ***c***, categorization is not possible because Blackfoot category-specific suffixes c-select for

roots with a particular feature ***c.*** Re-categorization is not possible either, since the re-categorizing suffix cannot select for a root without a category.

Lastly, **chapter 6** concludes and raises further questions.

1.5 A note on methodology

Two sources have been used to obtain the data from both languages: published texts and fieldwork elicitation.

Textual data. For both languages, I have relied on data in published dictionaries and grammars.

For Blackfoot, Frantz & Russell's (1995) dictionary has been the primary source of many examples, indicated by page number and F&R 1995 whenever cited. The dictionary is particularly valuable because it has been organized syntactically into stems, roots and affixes. Questions and observations raised in the dissertations of Taylor (1969) and Frantz (1971), as well as Frantz (1991) have inspired many elicitations on the categorial affiliation of roots.

For Lithuanian, I used the Dictionary of the Lithuanian Language (Naktinienė et al.), available online at www.lkz.lt (and cited as a web source throughout the text). The twenty volumes of the Dictionary make up about 22,000 pages, comprising half a million entries. I also used Ambrazas et al (1997) grammar of Lithuanian.

The textual data from both languages have been used to in two ways: (i) either to discern existing patterns in the distribution of roots and affixes; (ii) or to identify gaps in the data and prepare prompt materials for elicitation sessions with speakers.

Elicitations. Fieldwork with native speakers has been conducted to compile data either not found in the dictionaries or to obtain ungrammatical data needed to support the claims.

For speakers of both Blackfoot and Lithuanian, I used two methods to obtain data: ***question-translation*** and ***constructed prompt***. I explain each methods in turn.

Questions translation is formulated as 'How would you say x in your language?', where x is an embedded target construction. For example, if the targeted construction is formation of deadjectival nouns, I would ask 'How would you say 'softness' in your language?'.

Constructed prompt is an example of a particular construction – either grammatical or deliberately ungrammatical - assembled by me, and provided to the speaker to judge for grammaticality . For example, if the target construction would be 'One can say 'king-dom, wis-dom…' . Can one say 'women-dom, silly-dom'? To my best capacity, both questions and prompts would be presented providing a particular empirical context such that grammaticality judgements would not be affected by producing the targeted construction out of the blue.

Speakers. In case of Blackfoot, Beatrice Bullshields has been my consultant. Beatrice is a female native speaker in her sixties from ***Kainai*** (or ***Blood***) Nation, located in Lethbridge (Alberta, Canada). I have worked with Beatrice for over three years, in b-weekly elicitations. Given that I worked only with one speaker, I re-elicited the same material twice or more, on several distinct occasions so that the consistency of grammaticality judgements would be ensured. In case of Lithuanian, I did not have one dedicated consultant. This is because there is so much published material available. Occasionally, when published material was not immediately available, I used my own native speaker judgements always complemented with linguistically naïve judgements of other native speakers, male or female in their forties or older.

Chapter 2 Blackfoot roots

This chapter explores the patterns of categorization in Blackfoot. In particular I investigate whether roots have an intrinsic categorial identity and if so, how this categorial identity can be established.

The chapter is organized as follows. First, I provide some general background on the Blackfoot language and a sketch of its grammatical characteristics necessary to understand the data discussed in this thesis (2.1). Next, I establish the categorial identity of Blackfoot roots through language-specific tests. First I discuss verbs, and argue that transitivity sets them apart as a class (2.2)[7]. Then I address nouns, and conclude that animacy is the basis of nounhood (2.3).

Finally, I propose that due to the lack of any property, attributives are the elsewhere class of the lexical categories (2.4). I conclude that Blackfoot roots have a unique categorial identity. I discuss the absence of ROOTS in Blackfoot (2.5). Finally, in section 2.6, I conclude and raise further questions.

2.1 Background on Blackfoot

2.1.1 Blackfoot language: a profile

Geographical location The Blackfoot Nation consists of four bands: Siksiká (Blackfoot), Aapátohsipikani (North Piikani), Aamsskáápipikani (South Piikani), and Kainai (Blood). The South Piikani are in U. S. territory, and are known as the Blackfeet of Montana. The other three bands are on three southern Alberta reserves (the Siksiká Reserve is near Gleichen, east of Calgary; the Piikani Reserve is at Brocket, west of Fort Macleod; and the Blood Reserve is north of Cardston). Although the bands have slightly different dialects, they are mutually intelligible (for more details see

[7] Relational nouns are excluded from this study. It is an interesting question how they differ from transitive verbs: both need arguments.

http://people.uleth.ca/~frantz/blkft.html). The distribution of the latest estimated speaker population of these four bands is summarized in Table 2, from Russell & Genee 2006.

Table 2. Blackfoot: estimated speaker population

Band	Population
Siksika (Calgary, Canada)	2,750
Piikani (Lethbridge, Canada)	1,535
Kainai (Lethbridge, Canada)	3,810
Blackfeet (Montana)	10,100

Russell & Genee 2006

Vitality status Blackfoot is considered an endangered language due to the low numbers of children learning it. The number of speakers is on the decline, especially among the younger generation, as table 3 illustrates (shaded column). All speakers are also fluent in English, that is, there are no known mono-lingual Blackfoot speakers.

Table 3. Blackfoot: speaker age versus speaker number

Age group	All	0-4	5-14	15-24	25-34	34-44	45-54	55-64	65+
Number of speakers	4,315	100	345	350	545	1,210	830	565	375
Percentage of total speakers	100%	2,3%	8%	8.1%	12.6%	28%	19.2%	13.1%	8.7%

Russell & Genee 2006

Genetic affiliation Blackfoot belongs to the Algonquian language family. The parent Proto-Algonquian language is posited based on the regular correspondences of sounds and grammatical structures when Algonquian languages are compared to one another (Bloomfield 1946; Proulx 1989; Siebert 1941; 1967, among others).

Typological classification Based on its morphological structure, Blackfoot is traditionally classified as an **agglutinative** language, although it has features of a **fusional** language, as well (for discussion on language classification see, for example, Lyovin 1997). Fusional and agglutinative languages are both synthetic languages, which are defined by their morphologically complex word formation. An agglutinative language typically displays a high degree of synthetic word formation, where most words are formed by joining morphemes together, and where each morpheme carries only one meaning. In contrast, one and the same morpheme can be associated with

more than one meaning or function in a fusional language. Consider a typical example from Blackfoot (1):

(1) nimaatááksskohtoistotoohsspa
nit -maat-yaak-sskohto -istot -o -ohsi-hpa
1SG-NEG –FUT -spitefully-make-TA-REFL -NONAFFIRM
'I will not kill myself.'

Most morphemes in Blackfoot have exactly one meaning, i.e., there is a 1:1 correspondence between form and meaning (or grammatical function). In (1), ***maat-*** encodes negation, ***-ohsi*** marks the predicate as reflexive and so on. However, there are morphemes which encode more than one function. That is, the 1:1 correspondence between form and function is not found across the board. In (1), the suffix ***–o*** encodes (i) the transitivity of the verb, as well as (ii) the animacy of its object. Thus, Blackfoot is not a purely agglutinative language. Some grammatical functions may not be associated with overt morphology or else they may be obscured by synthetic morphemes.

Lithuanian is an example of a fusional language. Consider the example in (2):

(2) Gyvenimas - puikus.
gyv -en-im-as puik-us
live-VERBZ-NOMZ- MASC.NOM.SG wonderful- MASC.NOM.SG
'Life is wonderful.'

The morpheme ***-as*** encodes nominative case, singular number and masculine gender. Thus, the distinction between an agglutinative and a fusional language is often not sharp (as already noted by Sapir 1921). Although Blackfoot falls somewhat closer to the agglutinative end of the continuum, fusional morphemes are also common, as in Lithuanian. Throughout this thesis, I will compare Blackfoot and Lithuanian to gain insight into linguistic universals and variation in the context of categorization of roots (see section 3.4 for more discussion).

Research on Blackfoot. To date, there are five major sources on the grammar of Blackfoot. Uhlenbeck (1938) compiled the first descriptive grammar and a dictionary. The subsequent grammars by Taylor (1969) and Frantz (1971, 1991) considerably

advanced the documentation of Blackfoot through in-depth investigations of the language within the framework of modern linguistic theory. Frantz & Russell's (1995) Blackfoot dictionary has been a particularly valuable source for research reported in this dissertation. In many examples I cite this source as F & R 1995; when there is no source cited data comes from own fieldwork. The research reported in this thesis draws heavily on these grammars and dictionaries.

Recently, the study of Blackfoot has been invigorated by a number of linguists in Canada. Here, research on Blackfoot is conducted at three universities: Lethbridge (Donald Frantz, Ingee Genee), Calgary (Darin Flynn, Sara Johansson, Kim Meadows and Elizabeth Ritter) and British Columbia (Heather Bliss, Joel Dunham, Jennifer Glougie, Meagan Louie, Amelia Reis Silva, Abigail Scott and Martina Wiltschko, among others).

2.1.2 A brief sketch of Blackfoot grammar

In this section, I provide a brief sketch of Blackfoot grammar, which will provide enough background to understand the data presented in this dissertation. In particular, I will introduce the necessary ingredients of a minimal independent (i.e., free-standing) clause. The notion "minimal clause" refers to a clause which consists of those ingredients which are necessary and sufficient for the clause to be accepted as grammatical.

The only obligatory ingredient of a Blackfoot clause is the verb - or **verbal complex,** as it is often referred to in the Algonquian literature (see the discussion in Brittain 2003). The term **verbal complex** captures the fact that Blackfoot roots cannot occur bare, as illustrated in (3).

(3) a. nitssínaaki
nit- sina-aki
1SG-write/draw- INT
'I drew/wrote.' F & R 1995:164

b. *sina
write/draw

In (3), *nit-* signals that the participant is first person singular. ***sina-*** names the event as one of *drawing* or *writing.* And finally, ***-aki*** signals that the verb is morphologically *intransitive* and syntactically *pseudo-intransitive.* The term *pseudo-intransitive* is used by Frantz (1971) to refer to verbs with optional direct objects. The optionality of the object cannot be easily shown because Blackfoot is a pro-drop language. That is, even though the object itself may be lacking in syntactically obligatory transitive verbs as well, the morphemes within the verbal stem encode the presence of an object, specifically, transitivity suffixes indicate the animacy of an (optionally omitted) object . The difference between syntactically transitive and syntactically pseudo-intransitives is as follows. A pseudo-intransitive predicate may not be followed by a nominal phrase introduced by a determiner (i.e. a DP). This is shown in the examples in (4) (see Frantz 1991, Glougie 2000 for a detailed discussion).

(4) a. nitssínaaki (sináákia'tsis)
nit- sina-aki sina -aki -a'tsis
1SG-write/draw- INT write/draw- INT -NOMZ
'I drew/wrote (a book).'

b. *nitssínaaki omi sináákia'tsis
nit- sina-aki omi sina-aki-a'tsis
1SG-write/draw- INT DET write/draw-INT -NOMZ
Intended: 'I drew/wrote the book.'

Pseudo-intransitive verbs contrast with transitive verbs which require a DP object if the object is overt. In this case a different transitivity suffix is used instead of *-aki*, namely***-i*** This is shown in (5).

(5) a. Nitssínaip omi sináákia'tsis
nit-sina-i-p omi sina-aki-a'tsis
1SG-write/draw- TI-DIR DET write/draw-INT -NOMZ
'I drew/wrote the book.'

b. *Nitssínaip sináákia'tsis
nit- sina-i-p sina-aki-a'tsis
1SG-write/draw- TI-DIR write/draw- INT -NOMZ
'I drew/wrote the book.'

Thus, although overt DPs are generally optional, transitive predicates can still be distinguished from pseudo-intransitives. When the object is overt, transitives require it to be a DP while pseudo-intransitives require it to be a bare NP (see Glougie 2000 for more discussion).

The affixes on the verb encode arguments and their animacy, and the mapping of arguments (direct or inverse)., Let me go over the relevant affixes in order.

With transitive verbs – but not with intransitives - the transitivity suffixes signal the presence of the object and are sensitive to the animacy of the object. This is illustrated in (6), where ***–o*** marks a transitive verb with an animate object, while ***–i*** marks a transitive verb with an inanimate object.

(6) a. áaksikííht**o**waatsiks?
ø-yaak-iki-iht-**o**-waatsiksi
3SG-FUT-3SG-do/happen-to-TA-3.NONAFFIRM
'What will she do to her?'

b. áaksikííhts**i**waatsiks?
ø-yaak-iki-iht-**i**-waatsiks
3SG -FUT-do/happen-to-TI-3.NONAFFIRM
'What will she do to it?'

The direct/inverse marking reflects the salience of arguments in the discourse. The hierarchy typically assumed for the Algonquian languages is given in (7):

(7) Direct/Inverse Hierarchy
1st / 2nd > 3rd PROX > 3rd OBV

Thus the direct/inverse suffixes map arguments to thematic roles, functioning analogously to active/passive voice systems (Bliss 2005:61-62). Consider examples in (8):

(8) a. Kitááwayakio
kit-aawayaki-**o**
2-hit-**1:2**
'I hit you.'

b. Kitááwayakioki
kit-aawayaki-**oki**
2-hit-**2:1**
'You hit me.'

1st > 3rd:

c. Nitááwayakiaa	d. Nitááwayakioka
nit-aawayaki-**a**-(w)a	nit-aawayaki-**ok**-(w)a
1-hit-**DIR**-PROX	1-hit-**INV**-PROX
'I hit him.'	'He hit me.'

2nd > 3rd:

e. Kitááwayakiaa	f. Kitááwayakioka
kit-aawayaki-**a**-(w)a	kit-aawayaki-**ok**-(w)a
2-hit-**DIR**-PROX	2-hit-**INV**-PROX
'You hit him.'	'He hit you.'

3rd PROX > 3rd OBV:

g. Ááwayakiiia	h. Otááwayakioka
aawayaki-**(y)ii**-(w)a	ot-aawayaki-**ok**-(w)a
hit-**DIR**-PROX	OBV-hit-**INV**-PROX
'He hit her.'	'She hit him.'

Bliss 2005:62

If the higher ranking argument on the animacy hierarchy is the agent, then the clause is direct, and a direct suffix is used (e.g. suffixes in examples c, e, g). Conversely, when a lower ranking argument is the agent, the clause is inverse, and an inverse suffix ***-ok*** appears on the verb (e.g., d, f, h).

In the Algonquian literature, the verbal complex is traditionally analyzed as conforming to the template as in (9):

(9) preverb-root-medial- final

The preverb position hosts pronominal, modal, temporal, aspectual and modifying prefixes. Suffixes that signal the transitivity (i.e., number of arguments) of the verb are classified as finals. Medials are modifying suffixes (mostly encoding manner). Preverbs and medials are not present in every verbal complex, while roots and finals are always required. In the Algonquian tradition, roots are simplex sound-meaning correspondences that finals and medials attach to when a stem is formed. As such, roots are essentially defined by their morpho-syntactic position under the traditional Algonquian view. For the purpose of this investigation I continue to use this definition, though I will revise it as we proceed (see the conclusion of chapter 2 and chapter 3).

In (10)b, I illustrate how a predicate like that in (10)a conforms to this template[8].

(10) a. áakaaminnima
yaak-yaam-inn-i-wa
FUT-twisted-MED-TI-3>3
'She will twist it.' F&R 1995:205

b. $yaak_{preverb}$-$yaam_{root}$-inn_{medial}-i_{final}

In the Algonquianist tradition, the template has served as a tool for classification of individual morphemes as well as for the phrases that these morphemes compose. It also captures the linear order of morphemes within the verbal complex. For example, Taylor's (1969) thesis lists Blackfoot verbal morphemes assuming the template as a sorting tool.

Following the Algonquian tradition, Frantz (1971, 1995) as well as Frantz & Russell (1995) classify verbal stems as transitive animate (TA), transitive inanimate (TI), animate intransitive (AI), and inanimate intransitive (II) (for a detailed discussion, see section 2.2). However, little research has been devoted to the question as to ***what determines*** the internal structure of the verbal stem (for a brief discussion on abstract and concrete finals, see Frantz' grammar 1991:99-110). Taylor's 1969 thesis, for example, gives a list of at least 20 finals but it does not explore how these finals relate to each other or to roots[9]. Specifically, it is not addressed why and when particular roots combine with particular finals, or why Blackfoot has more than one final of a particular type, e.g., why there are so many transitivity finals and how these finals interact with each other. One of the goals of this thesis is to fill this gap. In particular, I investigate the distribution of a subset of finals. Since their function is to signal the transitivity of the predicate, I sometimes refer to them as transitivity suffixes.

[8] Medials are not as frequently used in Blackfoot as in other Algonquian languages, such as Cree (see, for example, MacKenzie et al 2004).
[9] Taylor (1969) gives a list of suffixes without any comment on their distribution or allomorphy. The exact number of entries depends on the criteria of counting. For example, one could consider transitive animate and transitive inanimate suffixes allomorphs or one could treat every suffix as a separate morpheme.

We now turn to a brief sketch of Blackfoot nouns. Nouns are distinguished from other categories in terms of their morphological and syntactic distribution. They are obligatorily classified in terms of animacy; they can be marked for number and possession; and they may be preceded by determiners. We discuss each of these distributional characteristics in turn.

All nouns are classified as either animate or inanimate. This classification is however not overtly marked on the noun. Rather, the animacy specification of nouns is visible only in the context of plural marking. As summarized in table 3, ***-istsi*** is the plural marker for inanimate nouns while ***-iksi*** is the plural marker for animate nouns. Singularity is morphologically unmarked[10].

Table 4. Nominal animacy marking in Blackfoot

Animacy	noun	singular form	plural form
inanimate	napayin 'bread'	napayin	napayin**istsi** napayin-**istsi** bread-IN.PL
animate	pokon 'ball'	pokon	pokon**iksi** pokon-**iksi** ball-AN.PL

When nouns are marked for possession, a possessive prefix is added, as shown in (11)[11]:

(11) nottsíístsi
n-ottsis-istsi
1POSS-guts-IN.PL
'my guts' F & R 1995:101

Relational nouns as well as inalienably possessed nouns (mostly body parts) are obligatorily prefixed by a possessive marker. When the possessor is unknown, the general possessive prefix ***m-***is used:

[10] According to Frantz (1991:8) singular number is marked as well. Animate singular nouns are marked with the suffix ***–wa***, while singular inanimate nouns are marked with the suffix***–yi***. However, he also states that many younger speakers do not use it (1991:8, footnote 5). Non-marking was the choice of my consultant, too. But see a further brief discussion in 2.3 on the findings of Bliss & Glougie (2009).
[11] See Bliss & Gruber (2011) for a morphosyntactic analysis of Blackfoot proclitics. See Proulx (1989) for a diachronic phonological analysis of the same forms.

(12) mottsíístsi
m-ottsí-ístsi
POSS-guts-IN.PL
'someone's guts'

When nouns are used as arguments, they must be preceded by a determiner. This holds for common nouns as well as proper names. The only exceptions to this generalization is in the context of pseudo-intransitives, which only allow bare NPs as their objects (Glougie 2000).

There are several classes of determiners: some encode familiarity, some encode visibility, and some encode distance relative to the speaker or addressee (Uhlenbeck 1938, Frantz & Russell 1995). The Blackfoot determiner system requires further investigation.

Finally, attributive modifiers may optionally be added to the Blackfoot verb and noun phrase, in the prefixal position. I use the term 'attributive modifier' to better capture their function rather than their category. These are lexical roots that (optionally) modify a root selected by category specific suffixes. The modifiers are either category-less or their category is undeterminable (no functional elements allowed). The modfiers come in two guises: bound (roots) and free (verb complexes).

Morpho-syntactically complex modifiers (discussed in Uhlenbeck 1938:221-230), are illustrated in (13), where ***waist-*** and ***waapat-*** are modifiers:

(13)	aistoohtsi	apatoohtsi	
	waist-o-ohtsi	waapat-o-ohtsi	
	closer-?-LOCALIZER	behind-?-LOCALIZER	
	'closer'	'behind'	F&R 1995:198,191[12]

Bound attributive modifiers are simplex forms (i.e., bound roots) and as such they are part of the present investigation[13]. They attach as prefixes to either a nominal or a verbal

[12] These entries are cited in the dictionary based on the underlying forms.
[13] There is another set of bound roots, the so called Medials. I do not investigate their categorial properties in this study. Suffice it to say that they have different distributional properties and do not occupy the root position.

complex (verb or noun root plus affixes). When the modifier is prefixed to a noun, it functions like an adjective. This is illustrated in (14) where the parentheses indicate the optionality of the attributives:

(14) **Noun modification**

a. (ikkini)óhpokoniks
ikkina -oh-pokon-iksi
soft/slow-?-ball-AN.PL
'soft balls'

b. (ikkina)í'ksisakoists
ikkina-í'ksisako-istsi
soft/slow-meat-IN.PL
'soft meats'

When the same modifier is prefixed to a verb, it functions like an adverb:

(15) **Verb modification**

a. (ikkiná)í'poyit!
ikkina-í'po -y-i-t
soft/slow-speak-EPEN-P.INT-IMPER
'speak slowly/clearly!'

b. (ikkiní)ístotsit!
ikkina-istot-i-t
soft/slow-do-TI-IMPER
'soften it!' F&R 1995:34

Although many modifiers can be used to modify either nouns or verbs, it remains to be established whether *all* can be used in this way. Note that this is not the case of category neutrality in the sense discussed throught this thesis – namely the quality to be of any category and be selected by the suffixes of any category. Rather, these modifiers attach to phrasal level of noun and verb complexes.

2.2 Blackfoot verbs

The goal of this section is to show that there is a set of roots which can be uniquely identified as verbal (henceforth √verb**;** nominal and attributive roots are represented as √noun and √attributive respectively). Traditionally, Algonquian verbs – including Blackfoot verbs (Taylor 1969) – are classified at the stem level: transitive animate (TA) transitive inanimate (TI), animate intransitive (AI), and inanimate intransitive(II). This is illustrated in (16):

(16) **Traditional classification of verbal stems in Algonquian**
(Preverb) [Root (Medial) Final] $_{TA}$
(Preverb) [Root (Medial) Final] $_{TI}$
(Preverb) [Root (Medial) Final] $_{AI}$
(Preverb) [Root (Medial) Final] $_{II}$

With transitive verbs, animacy restrictions apply to the object while with intransitive verbs the animacy restrictions apply to the subject.

This traditional classification accounts for the distribution of stems. It does not, however, account for the distribution of roots. That is, the classification in (16) implies that *any* √verb (i.e. the root in the template) could surface in *any* of the four classes. According to this template, a √verb does not carry any grammatical information. I show that this is not the case in Blackfoot. Based on a detailed study of the distribution of a subset of transitivity suffixes (the *finals*), I show that there exist some unexpected gaps. I conclude that √verbs are also classified. I further argue that the intrinsic property which defines Blackfoot √verbs and which serves as their classification device is transitivity. That is, I will show that all √verbs are uniquely subcategorized as transitive, intransitive, and pseudo-transitive as illustrated in (17):

(17) **The classification of verbal roots in Blackfoot**
(Preverb) [√verb $_{TRANS}$ (Medial) Final]
(Preverb) [√verb $_{INTRANS}$ (Medial) Final]
(Preverb) [√verb $_{PSEUDO\text{-}TRANS}$ (Medial) Final]

I further show that the subcategories based on transitivity uniquely define selectional relations of √verbs to other functional morphemes such as the transitivity suffixes.

I develop the argument as follows. I first show that transitivity is indeed the defining feature of √verbs (2.2.1). I then establish that √verbs fall into subcategories based on their intrinsic transitivity (2.2.2).

2.2.1 Diagnosing Blackfoot √verbs

2.2.1.1 All and only √verbs are marked for transitivity

In this section, I demonstrate that transitivity suffixes attach only to √verbs, and exclude √nouns and √attributives (or the 'elswehere' case). Consider for example (18). The transitive suffixes ***–at, -atoo,*** and ***-aa*** combine with the √verb ***ohpomm*** 'buy' and form grammatical predicates.

(18) a. Nítohpomm**at**a ómi nítoaki
nit-ohpomm-**at-**a-wa omi nitoaki
1SG-buy -**TA**-DIR-1>3 DET chicken
'I bought that chicken.'

b. Nítohpomm**atoo**'p óma napayín
nit –ohpomm-**atoo** –'p oma napayin
1SG-buy -**TI**-1>3 DET bread
'I bought that bread.'

c. Nítohpomm**aa** (napayín)
nit –ohpomm-**aa** napayin
1SG-buy -**INT** bread
'I bought (bread).'

If, however, these suffixes are attached to √nouns, the result is ungrammatical in all instances as shown in (19) where the suffixes ***-atoo,*** and ***-aa*** are suffixed to the √noun ***ksaahko*** 'land'[14].

(19) a.*Anna Sam ksaahkow**atoo**ma omi aipottaa
anna Sam ksaahko-**atoo**-ma omi a-ipott-aa-ø
DET Sam land-TI-DIR-3>3 DET IMP-fly-INT-NOMZ
Intended: 'Sam landed the airplane.'
Context: learning to fly an airplane

[14] √Nouns are discussed in 2.3, and appendix B contains all √nouns tested in the context of this study. Section 2.5 discusses more examples of this kind in relation to the absence of category-neutrality.

b. *Oma aipottaa ksaahk**aa**
oma a-ipott-aa-ø ksaahko-**aa**
DET IMP-fly-INT-NOMZ land- INT
Intended: 'The airplane landed.'

Next, I show that transitivizing suffixes may not attach to √attributives either. For example in (20), ***–atoo*** and ***-aki*** are suffixed to ***iksikk*** 'clean, white', which results in ungrammaticality.

(20) a. *nitsiiksikk**aki**
nit-ii-ksikk-**aki**
1SG-?-clean- INT
Intended: 'I cleaned/whitened.'

b. *nitsiiksikkk**atoo**'p óma iitáísooyo'p
nit –ii- iksikk –atoo-'p oma iit-a-oo-o'p
1SG –?-clean- -**TI** -1>3 DET there-IMP-eat-NOMZ
Intended: 'I cleaned that table.'

Note that there is no semantic restriction that would rule out these examples. This can be seen on the basis of the fact that the corresponding periphrastic constructions with the same roots and with the same transitivity suffixes are possible (see section 2.5). We have now seen that neither √nouns nor √attributives can combine with transitivity suffixes directly. This much establishes that transitivity suffixes select for √verbs only and exclude roots of other categories. Table 5 sums up the distributional pattern of the transitivity suffix ***-atoo***, representative of all transitivity suffixes.

Table 5. Selectional restrictions of *-atoo*

Transitivity suffix	**√noun**	**√verb**	**√attributive**
-atoo	✖	✓	✖

2.2.1.2 √Verbs cannot be used as √nouns

As briefly introduced in section 2.1.2, √nouns can be marked for plural by adding a plural suffix (see also section 2.3 below). What is relevant for the purposes of category distinctions is that plural marking can affix to √nouns only, but not to √verbs. This is illustrated with two examples below. ***Ottak*** 'give a drink' is a √verb. We know this because it is obligatorily suffixed with the transitivity suffix, in this case, ***-o*** or ***-i*** :

(21) a. ottak**o**yííwa
ottak-o-yíí-wa
give a drink-TA-DIR-3SG
'He gave her a drink.'

b. áakottak**i**wa
yaak-ottak-i-wa
FUT- give a drink- INT-3SG
'He will serve drinks.'

F&R 1995:145

This root cannot be affixed with a plural suffix whether the plural marking is animate -***iksi***, or inanimate -***istsi***:

(22) a. *ottakiksi
ottak -iksi
give a drink -AN.PL
Intended: 'bartenders'

b. *ottakistsi
ottak -istsi
give a drink -IN.PL
Intended: 'bartenders'

Nominalization of both ***ottak*** and ***sokin*** is possible, but only beyond the root level, as illustrated in (23).

(23) a. áóttakiiksi
a-ottak-i-ø-iksi
IMP-give a drink- INT-NOMZ-AN.PL
'bartenders' F&R 1995:6

b. [a-[ottak]$_{root}$]-i]$_{stem}$ -ø-iksi

c. ásokinnakiiksi
a-sok-yinn-aki-ø-iksi
IMP-good-handle- INT-NOMZ-AN.PL
'doctors' F&R 1995:6

d. [a-[sok]-[yinn]$_{root}$]-aki]$_{stem}$ -ø-iksi

That these nominalizations do indeed involve verbal forms above the root level can be seen on the basis of the fact that they include transitivity suffixes as well as the imperfective prefix ***a-***. I assume that there is a phonologically silent nominalizer at the stem level. That is, the nominalizer selects for complex verbs (VPs) rather than verbal roots (√verbs). I assume that there is a zero nominalizer because nominal plural morphemes alone do not suffice for nominalization. (For more discussion on nominal plurals, see section 2.3 and for nominalization, chapter 5).

2.2.1.3 √Verbs cannot be used as √attributives

Characteristically, √attributives surface in light verb constructions, such as ***-ssi/ii*** 'be', which is not productive or by ***-a'pssi/a'pii*** 'be in specified way', which is productive. What I call √attributives and light verb constructions are discussed in 2.4. √Verbs which participate in transitivity alternations are not found in the constructions which select for √attributives (transitivity alternations are described in 2.2.1.1 and 2.2.2.1). Thus √verbs like ***ksimsst*** 'think' or ***oo*** 'eat' are not acceptable with either ***-ssi/ii*** 'be' or by ***-a'pssi/a'pii*** 'be in specified way'. If √verbs are used in these constructions, the result is ungrammatical:

(24)	a. *ksimst**ssi**	b. *ooy**ii**
	ksimst **-ssi**	oo-y-**ii**
	think -be.AN	eat-EPEN-be.IN
Intended:	'be thoughtful'	'be edible'

(25)	a. *ksimsts**a'pssi**	b. *oow**a'psii**
	ksimst -a'pss**i**	oo-w-**a'pii**
	think - be.AN	eat-EPEN- be.IN
Intended:	'thoughtful'	'edible'

In Blackfoot, these meanings are conveyed by different constructions, which involve either derivation beyond the root level or periphrastic constructions. For example, to convey the concept 'thoughtful', the speaker offers the example in (26):

(26) Anna Ana ííksikkinaa'piipitsi
anna Ana íík-ikkina-a'p-ii-ipitsi
DET Ana INTS-gentle-about-be.IN-HAB
'Ana cares for just anyone, is thoughtful.'

In (26), the √attributive ***ikkina*** 'gentle' first combines with the light root ***a'pii-*** 'be in a specific way', and then it combines with the verbal habitual suffix ***–ipitsi***.

An example of paraphrase is the construction used for 'edible'. In this case, the speaker suggests 'one can eat this':

(27) ámo napayín akohkóttsoatoo'p
amo napayin yaak-ohkott-oo-atoo-o'p
DET bread FUT -able -eat-TI-UNREAL
'This bread is edible.'

Here, the prefix ***ohkott-*** 'able' conveys the desired meaning, comparable to English suffix ***-able***. Crucially, the √verb ***oo-*** 'eat' does not undergo a shift in category and remains a verb, as the presence of the transitivity affix ***–atoo*** shows.

Thus, √verbs are not found in characteristically attributive environments. The desired meaning can be attained by other means.

2.2.1.4 Some Blackfoot roots are intrinsically verbal

We have identified a class of roots which are best analyzed as √verbs. I now show that these √verbs are also uniquely subcategorized. That is, a given √verb cannot be used across different transitivity classes.

2.2.2 √Verbs are subcategorized

2.2.2.1 Classification of Blackfoot verbal stems versus Blackfoot √verbs

In many languages, transitivity – i.e., the ability to take an object – serves as the basis for the classification of verbs. In a language like English, one can find transitive and intransitive verbs yet the distinction cannot be tied to any overt marker but rather to the syntactic behaviour of the verbs. For example, ***sleep*** is intransitive while ***catch*** is transitive. We know this, because the latter is grammatical with an object while the former is not:

(28) a. Sam sleeps. b. *Sam sleeps the baby.
c. *Sam catches. d. Sam catches mice.

From the perspective of English, Blackfoot verbal stems appear straightforward to parse: the difference in transitivity is marked by suffixes. The expression of transitivity via suffixes is described in the literature on Algonquian languages (e.g., Wolfart 1973, Valentine 2001), including the literature on Blackfoot (Uhlenbeck 1938, Taylor 1969, Frantz 1971). In particular, verbal stems are subcategorized as intransitive if they are grammatical without an object and are marked with a particular intransitive suffix. For example, 'sleep' is an intransitive predicate whose intransitivity is marked with suffix ***–aa***.

(29) Anná Sam áyo'k**aa**
anna Sam a-yo'k-aa-wa
DET Sam IMP-sleep-INT-3SG
'Sam is sleeping.'

In contrast, verbal stems are subcategorized as transitive if they require an object and a particular transitive suffix, in these examples ***–at*** (for an animate object) and ***-atoo*** (for an inanimate object).

(30) a. Anná Sam iiw**át**siiwa ómi nítoaki
anna Sam ii-oo-at-ii-wa-yi omi nítoaki
DET Sam ?-eat-TA-DIR-3SG-3>3 DET chicken
'Sam ate the chicken.'

b. Anná Sam iiw**átoo**ma ómi napayín
anna Sam ii-oo-atoo-ma omi napayin
DET Sam ?-eat-TI-3>3 DET bread
'Sam ate the bread.'

In addition to being classified in terms of transitivity, verbal stems in Blackfoot are further sub-classified on the basis of the animacy of their argument. In particular, all transitive stems are distinctly marked depending on whether their object is grammatically animate or inanimate, as in (30) above. Similarly, intransitive verbs are traditionally sub-classified depending on the animacy of their subject. This results in the following classification:

(31) **Traditional classification of verbal stems in Algonquian**
(Preverb) [Root (Medial) Final] TA
(Preverb) [Root (Medial) Final] TI
(Preverb) [Root (Medial) Final] AI
(Preverb) [Root (Medial) Final] II

But what determines the transitivity within a stem: preverbs, roots, medials, or finals? I start by ruling out preverbs and medials (which encode properties other than transitivity, such as the manner or time of an event).

Preverbs are optional and do not encode transitivity and as such are left out of the discussion[15].

Medials are often optional, too. In (32), we see how a medial ***–ika*** 'foot' (bolded) is part of the verb in (a), yet it can be omitted without changing grammaticality or transitivity in (b):

[15] Unless one takes into account ***linkers*** (Frantz 1991, Frantz & Russell 1994) also labeled ***relative roots*** such as ***itap-*** 'towards', which may introduce an argument, e.g., ***oo*** 'move' versus ***itapoo*** 'move toward something'. I assume that these are indeed a kind of category-less roots (akin to prepositional prefixes in Slavic languages, which also introduce an argument), yet they are never selected by the categorial suffixes and appear only in preverb position. Since their distribution differs from the rest of the roots, I leave this issue to further research.

(32) a. áíssi**ika**awaatsimi
á-ssi-**ika**-atsi-m-yii
IMPF-wipe-**foot-** FIN-TA-DIR
'she is washing his feet.' Dunham 2009:10

b. áíssiwaatsimi
á-ssi-atsi-m-yii
IMPF-wipe- FIN-TA-3>3-IMPF
'she is washing him.' Dunham 2009:10

In the cases where the medial is not optional, its contribution is that of manner, not transitivity. In (33), the medial ***inn*** 'by hand' remains constant while the change in the transitivity suffixes (bolded) correlates with a change in transitivity.

(33) ssinn TA 'break with the hand/cause to go bankrupt'
ss-yinn-**ø**
break-by.hand-TA

ssinn**i** TI
ss-yinn-**i**
break-by.hand-TI

ssinn**aki** INT
ss-yinn-**aki**
break-by.hand- INT F&R 1995:173

Thus, the only obligatory elements for stem formation and their classification are roots and transitivity suffixes. But which of these two elements determines the transitivity of the stem?

We first observe that the transitivity suffixes decide the transitivity of the stem as a whole. The subdivision of stems in terms of transitivity and animacy of their objects is reflected in the organization of the verbal entries in Frantz & Russell's (1995) dictionary. A typical entry from the dictionary is given in (34), emphasis mine.

(34) **Dictionary entry for a typical Blackfoot verb**
sisoyi **vai** cut (s.t.) into strips; sisóyit! cut!; iisisóyiwa she cut; nítssisoyi I cut; Ninaímsskaisisóyáakii Holy Medicine Pipe Cutting Woman; Náátsikapoyisisóyáakii Double Cutting Woman; also *isisoyi*; Rel. stems: **vti** *sisowatoo*, **vta** *sisowat* cut into strips. Frantz & Russell 1995:165

In (34), the abbreviations (in boldface) **vta** and **vti** refer to transitive animate and transitive inanimate verbs, respectively, while the abbreviations **vai** and **vii** refer to animate intransitive and inanimate intransitive verbs, respectively

In sum, the animacy and transitivity of the transitivity suffixes are the criteria for the sub-classification of verbal *stems*. However, I have shown in the previous section that √verbs are selectable. But what determines the selection? Are √verbs also subcategorized in terms of transitivity and animacy?

First, I show that √verbs are not subcategorized in terms of animacy. The transitivity markers on the verb agree with the object DPs in terms of animacy, but √verbs are not intrinsically animate or inanimate. We know this because the same √verb can be used with different markers depending on the animacy of the object. In (35), animate objects co-occur with ***–o*** (a) but not with ***–i*** (b), while inanimate objects co-occur with ***–i*** (c) but not with ***-o*** (d).

(35) **Verb agreement with Animate DPs**

a. Anná Sam inoyí ómiksi imitáíks.
anna Sam in -**o** -yi omi-iksi imitaa-iksi
DET Sam see-**TA**-3>3 DET-AN.PL dog- AN.PL
'Sam saw the dogs.'

b. *Anna Sam in**i**m omiksi imitaiks.
anna Sam in -**i** -m omi-iksi imitaa-iksi
DET Sam see-**TI**-3>3 DET-AN.PL dog- AN.PL
Intended: 'Sam saw the dogs.'

Verb agreement with Inanimate DPs

c. Anná Sam in**ím** ómistsi napayínísts.
anna Sam in **-i** - m omi-istsi napayín-istsi
DET Sam see-**TI**-3>3 DET-IN.PL bread- IN.PL
'Sam saw the loaves of bread.'

d. *Anna Sam in**o**yi omistsi napayínists.
anna Sam in **-o** -yi omi-istsi napayín-istsi
DET Sam see-**TA**-3>3 DET-IN.PL bread- IN.PL
Intended: 'Sam saw the loaves of bread.

The use of the same √verb with arguments of distinct animacy shows that only verbal stems but not √verbs can be classified in terms of the animacy of their arguments. As such, animacy does not reflect any intrinsic property of a √verb.

Let's see if verbs are subcategorized in terms of transitivity. First, let's hypothesize that transitivity suffixes determine the transitivity of a stem. (cf. Hirose on Cree 2000). In (36), we see the same √verb co-occurring with different transitivity suffixes (bolded):

(36)

√verb class 1, suffix set A		**√verb class 2, suffix set B**		
sisoy**i**	'cut'	ssinn**aki**	'break by hand'	
siso-**i**		ss-yinn-**aki**		
cut- **INT**		break-by.hand- **INT**		
sisow**atoo**		ssinn**i**		
siso-**atoo**		ss-yinn-**i**		
cut- **TI**		break-by.hand- **TI**		
sisow**at**		ssinn		
siso-**at**		ss-yinn-**ø**		
cut- **TA**		break-by.hand- **TA**		F&R 1995:165,173
ihkiit**aa**	'bake'	o't**aki**	'take'	
ihkiit-**aa**		o't-**aki**		
bake- **INT**		take- **INT**		
ihkiit**atoo**		o'ts**i**		
ihkiit-**atoo**		o't-i		
bake- **TI**		take- **TI**		

ihkiit**at**	o't**o**	
ihkiit-**at**	o't-**o**	
bake- **TA**	take- **TA**	F&R 1995:17, 143

A √verb like ***siso*** 'cut' combines with the transitivity suffixes ***-i, -at,*** and ***-atoo*** which are intransitive, transitive animate and transitive inanimate, respectively. A √verb like ***o't*** 'take' combines with ***–aki,-o,*** and ***-i*** which are also pseudo-transitive, transitive animate and transitive inanimate, respectively. On the basis of this, we may conclude that the use of a particular transitivity suffix determines the transitivity of the verbal complex. That is, both ***siso*** and ***o't*** combine with transitivity suffixes that encode the same value, such as, e.g. transitive animate. However, the hypothesis that the suffixes determine transitivity does not hold. Although the same √verb can occur with transitivity suffixes of the same value, these transitivity suffixes fall into distinct sets. Crucially, one cannot switch the sets of transitivity suffixes on these √verbs, as illustrated below.

(37)

*sisow**aki**[16]	'cut'	*ssinn**i**	'break by hand'
siso-**aki**		ss-yinn-**i**	
cut- **INT**		break-by.hand- INT	
*sisoy**i**		*ssinn**atoo**	
siso-**i**		ss-yinn-**atoo**	
cut- **TI**		break-by.hand- TA	
*siso		*ssinn**at**	
siso-**ø**		ss-yinn-**at**	
cut- **TA**		break-by.hand- TA	
*ihkiit**aki**	'bake'	*o't**aa**	'take'
ihkiit-**aki**		o't-**aa**	
bake- **INT**		take- **INT**	

[16] The hypothetical switch in the quality of the epenthetic glides y~w is based on the actual examples in other verbs, e.g., oo**y**i~oo**w**at~oo**w**atoo.

*ihkiits**i**	*o′t**atoo**
ihkiit-**i**	o′t-**atoo**
bake- **TI**	take- **TI**
*ihkiit**at**	*o′t**at**
ihkiit-**at**	o′t-**at**
bake- **TA**	take- **TA**

This is how the attempt at switching transitivity suffixes would look like in clausal context:

(38) a. nítssisoy**i**
nit-i-siso-**i**
1SG-?-cut- **INT**
'I cut something.' F&R 1995:1965

b. *nitsisow**aki**
nit-i-siso-**aki**
1SG-?-cut- **INT**
Intended: 'I cut something.'

c. nitó't**aki**
nit-ó't-**aki**
1SG-take- **INT**
'I took something.' F&R 1995:139

d. *nitó't**aa**
nit-ó't-**aa**
1SG-take- **INT**
Intended: 'I took something'

(38)a-c shows ***siso*** and ***o't*** with their respective intransitive suffixes. (38)b-d shows that the suffixes cannot be switched, i.e. the intransitive suffix of ***siso*** cannot be used on ***o't*** and vice versa.

The speaker only allows for a particular set of transitivity suffixes on a particular √verb. If indeed transitivity suffixes alone were to determine the transitivity of the verbal complex, the ungrammaticality of these examples would be unexpected.[17] Why can it not be a simple case of allomorphy of the transitivity suffixes conditioned by verb class? I did not find evidence for classes of allomorphy. In what follows, I present some of the arguments against allomorphy.

It would be plausible to hypothesize that particular lexical classes of √verbs may determine the use of particular suffixes. This is not the case. The conceptual content (i.e., the ontological meaning) of a √verb is not the determining factor. For example, the roots

[17] See Appendix A for the list of verbs I have tested.

o'kaas 'grab' and ***o't*** 'take' could be considered as being ***verbs of obtaining*** (in the sense of Levin 1993:141). However, they combine with different sets of suffixes:

(39)	TA	TI	I	
	o'kaas-**at**	o'kaas-**at**	o'kaas-**i**	F&R 1995:118
	o't-**o**	o't-**i**	o't-**aki**	F&R 1995:139

It would also be plausible for the phonological form to condition the use of a particular suffix. This is not the case either. In other words, I was not able to find a pattern that would relate the use of a particular suffix to a particular string of sounds. For example, both ***iksisskahk*** 'nudge' and ***inaamaahk*** 'acquire gun' end in /hk/, yet the two forms are used with different set of suffixes:

(40)	TA	TI	I	
	iksisskahk-***o***	iksisskahk-***i***	iksiskahk-***aki***	F&R 1995:42
	inaamaahk-***at***	inaamaahk-***atoo***	inaamaahk-***aa***	F&R 1995:47

If the selectional restrictions are not based either on meaning or sound we must conclude that we are dealing with an abstract formal property. I conclude that there must be some other factor determining the co-occurrence restrictions between √verbs and transitivity suffixes. I propose that the relevant property is *transitivity*. In particular, I argue that we can identify subcategories of √verbs based on their intrinsic transitivity. Thus, the distribution of transitivity suffixes not only reveals the categorial identity of √verbs, but also reveals patterns of subcategorization associated with √verbs.

I conclude that √verbs as well as verbal stems are subcategorized for transitivity. They differ, however, relative to animacy. √Verbs are not subcategorized for the animacy of the relevant argument whereas verbal stems are.

2.2.2.2 Transitivity suffixes are not homogenous

The fact that one set of transitivity suffixes cannot be substituted for another set of transitivity suffixes means that both √verbs and the transitivity suffixes are further classifiable. I hypothesize that that there are two types of suffixes and two classes of √verbs based on the transitivity intrinsic to (i) √verbs**,** and (ii) transitivity suffixes. In particular, I will show that one set of √verbs (let us call them √verb 1) may only combine with one set of transitivity suffixes (let us call them type A). In contrast, there is another set of √verbs (let us call them √verb 2), which may only combine with another set of transitivity suffixes (let us call them type B). Crucially, √verb 1 may not combine with transitivity suffixes of type B, while √verb 2 may not combine with transitivity suffixes of type A. This is illustrated in the table (41) below.

(41) **Classification of verbal roots & suffixes in Blackfoot**

√Verb 1	**Suffixes type A**	**√Verb 2**	**Suffixes type B**
√verb $_{T}$	Final$_{T}$	√verb $_{T}$	Final $_{INT}$
√verb$_{INT}$	Final $_{INT}$	√verb $_{INT}$	Final$_{T}$

This highlights the contrast between the two types of √verbs and the two types of suffixes. Verbs of type 1 (outlined font) behave differently from verbs in type 2 (normal font) in that the two types combine with the different set of suffixes, A and B respectively. I first discuss the distinctions within the suffixes. √Verbs are addressed in the following section.

Consider the two sets of transitivity suffixes, given in table 6.

Table 6. Transitivity alternations: two sets of suffixes[18]

Set	Transitive animate	Transitive inanimate	Intransitive[19]
A	**-at**	**-atoo**	**-aa, i**
B	**-o**	**-i**	**-aki, imaa**

The question I wish to address is as follows: Why can't suffixes of type A be interchanged with suffixes of type B if both sets of suffixes mark transitivity? The impossibility of substitution forces us to recognize that the suffixes themselves differ. I propose that the suffixes either match the transitivity intrinsic to √verbs, or they change the value of the transitivity intrinsic to √verbs. Thus, I posit two types of transitivity suffixes as summarized in (42).

(42)

(i) ***Agreeing Transitivity suffix***
Root$_{trans}$ *Suf*$_{trans}$
Root$_{intrans}$ *Suf*$_{intrans}$
The transitivity suffix agrees with the transitivity intrinsic to the root

(ii) ***Deriving Transitivity suffix***
Root$_{trans}$ *Suf*$_{intrans}$
Root$_{intrans}$ *Suf*$_{trans}$
The transitivity suffixe provides a transitivity value opposite to the one intrinsic to the root

It turns out that both sets of transitivity suffixes, Set A as well as Set B, contain ***deriving*** (outlined font) and ***agreeing*** (regular font) suffixes.

---

[18] This is not an exhaustive list of suffixes (cf. Taylor 1969). I have selected these due to their high frequency. I leave an analysis of other suffixes for further research.

[19] In light verb constructions, one can see how the animacy of the subject is encoded, e.g., ***-a'pssi*** for animate subjects, ***-a'pii*** for inanimate subjects, so the sensitivity to animacy has to be noted. However, this is irrelevant for √verbs which participate in transitivity alternations. Animacy is not reflected in the shape of these suffixes. In the following example, the subject of ***ihkiit*** 'bake' is animate while the subject of ***ohpot*** 'snow' is not animate, yet both verbs use the same intransitive suffix ***–aa***:

iihkíít**aa**wa	iihpot**áá**wa
iihkíít-**aa-**wa	iihpot-**áá-**wa
bake-INT-3SG	snow-INT-3SG
'he baked'	'it snowed'

F&R 1995:17,15

Table 7. Transitivity alternations: two sets of suffixes (revised)

Set	Transitive animate	Transitive inanimate	Intransitive
A	**-at**	**-atoo**	**-aa, i**
B	**-o**	**-i**	**-aki, imaa**

The *agreeing* suffixes agree with the intrinsic transitivity of the √verb. The *deriving* suffixes add a transitivity value opposite to the one of the √verb with which it combines. Now the ungrammaticality of the puzzling data in (38) can be accounted for. It reduces to selectional restrictions such that an *agreeing* suffix can only combine with a √verb that matches the transitivity of the suffix while a ***deriving*** suffix can only combine with a √verb of the opposite transitivity value. Consider again the relevant data, repeated below for convenience. Note that the fonts represent the suffix types, and the indices on the √verbs represent their intrinsic transitivity:

(43) **Data set i: grammatical use of *agreeing* and *deriving* suffixes**

ihkiitaa	'bake'	o'taki	'take'
ihkiit$_{INT}$-**aa**		o't$_{TRANS}$-aki	
bake$_{INT}$- **INT**		take$_{TRANS}$- **INT**	
ihkiitatoo		o'tsi	
ihkiit$_{INT}$-atoo		o't$_{TRANS}$-i	
bake$_{INT}$- **TI**		take- **TI**	
ihkiitat		o'to	
ihkiit$_{INT}$-at		o't$_{TTRANS}$-**o**	
bake$_{INT}$- **TA**		take$_{TRANS}$- **TA**	

Data set ii: ungrammatical use of *agreeing* and *deriving* suffixes

*ihkiitaki	'bake'	*o'taa	'take'
ihkiit$_{INT}$-aki		o't$_{T}$-**aa**	
bake$_{INT}$- **INT**		take$_{T}$- **INT**	
*ihkiitsi		*o'tatoo	
ihkiit$_{INT}$-**i**		o't$_{T}$-atoo	
bake$_{INT}$- **TI**		take$_{T}$- **TI**	

*ihkiito	*o'tat
ihkiit-**o**	o't$_{T}$-**at**
bake$_{INT}$- **TA**	take$_{T}$- **TA**

In data set (i) of (43), the √verb ***ihkiit*** 'bake' is intrinsically pseudo-transitive, so it is selected by the *agreeing* suffix ***–aa***, and the transitive forms of the √verb are constructed with the suffixes ***-at,*** and ***-atoo*** which derive the transitivity value opposite to the √verb. In contrast, ***o't-*** 'take' is intrinsically transitive, so the *deriving* suffix it combines with is ***-aki***. However, if a switch is attempted as in the data set (ii), the result is ungrammatical. In this case the transitivity intrinsic to the √verb is at odds with the transitivity of the final. For example, the intrinsically transitive √verb ***o't*** is combined with a *deriving* transitivity suffix (***-at***). Since the √verb is intrinsically transitive it cannot be combined with a final that derives transitive predicates.

Thus far, I have discussed data from primary derivation, where the transitivity suffixes combine with the √verb directly, as schematized in (44)a. There are, however, examples of transitivity suffixes attaching to complex forms consisting of a root and a suffix, as schematized in (44). I refer to these as secondary derivations.

(44) a. Primary derivation: root + suffix$_{Transitivity}$
b. Secondary derivation: root + suffix$_{Transitivity}$ + suffix$_{Transitivity}$

If my hypothesis about distinct sets of transitivity suffixes is correct, only the ***deriving suffixes –at,*** and ***-atoo*** should participate in secondary derivation. If the *agreeing* ***suffixes*** could also derive, there would be no reason for the distinction of the two types of suffixes.

This prediction is borne out. Only ***–at*** and ***-atoo*** are found in secondary derivations. The *agreeing* ***suffixes -o*** and ***-i*** are merely in agreement with the intrinsic transitivity of √verbs and cannot participate in secondary derivations. Consider, for example, attributive predicates formed with either ***–ssi*** or ***–a'pssi***:

(45) a. Anná Sam iiksíkkamssi[20].
anna Sam iik-**ikkam**-ssi
DET Sam INTS-quick-be.AN
'Sam is quick.'

b. Anná Sam iik**óka**'pssi
anna Sam iik -**ok** -a'p -ssi
DET Sam INTS-bad-about/around-be.AN
'Sam is bad.'

c. Anná Sam **isími**a'pssi
anna Sam **isimi**-a'p -ssi
DET Sam sly-about/around-be.AN
'Sam is sly.'

√Attributives cannot be suffixed by transitivity suffixes directly (as we have seen in section 2.2.1). However, complex predicates containing √attributives can undergo secondary derivation with the ***deriving*** suffixes ***-at***, ***-atoo***:

(46) a. Anná Sam ikksíkkamss**at**si ponokáómitaiks[21]
anna Sam ikk-ikkam-ss **-at**-i ponokaomitaa -iksi
DET Sam INTS-quick-be.AN-be.TA-1>3 horse - AN.PL
'Sam is quick with horses.'
Context: Sam is a horsewhisperer and tames them quickly

b. Anná Sam iikóka'pss**at**si ihtáóhpommao'p
anna Sam iik-ok -a'p-ssi-**at**-i iht-a-ohpomm-aa-o'p
DET Sam INTS-bad-about/around-be.AN-TA-1>3 MEANS-IMP-buy-INT-NOMZ
'Sam is bad with money.'
Context: Sam overspends money

[20] The presence of the intensifier *iik-* 'very', although often obligatory, does not have any effect on argument structure.
[21] Usually, transitive predicates obligatorily require the object with a determiner. In the case of secondary derivation, however, the determiner is impossible. I do not have anything to say about this pattern and will have to leave it for future research. Note that this does not undermine the use of these suffixes for the diagnostics in primary derivation: in that case, the determiner is always obligatory.

c. Anná Sam **isími**a'pss**atoo**m kahtssín
anna Sam **isimi-**a'p-ssi-**atoo**-m kahts -i -ssin
DET Sam sly-about/around-be.AN- TI-1>3 gamble-INT-NOMZ
'Sam is sly about card games.'
Context: Sam cheats while gambling

The secondary derivation is only possible with the ***deriving*** suffixes ***-at***, and ***-atoo,*** but not with the *agreeing* suffix ***–o***[22]***,*** exemplified in (47) with and without determiners on the argument:

(47) a. *Anna Sam ikksikkamss**o** omiksi ponokaomitaiks
anna Sam ikk-ikkam-ssi -o om-iksi ponokaomitaa -iksi
DET Sam INTS-quick-AN-TA DET-AN.PL horse - AN.PL
Intended: 'Sam is quick with those horses.'

b. *Anna Sam ikksikkamss**o** ponokaomitaiks
anna Sam ikk-ikkam-ss -o ponokaomitaa -iksi
DET Sam INTS-quick-AN-TA horse - AN.PL
Intended: 'Sam is quick with horses.'

In sum, the patterns of secondary derivation confirm the split in transitivity suffixes. ***Deriving suffixes*** participate in secondary derivation, while *agreeing* ones do not participate in secondary derivation.

Last but not least, there is an asymmetry in the morphological shape of these two sets of suffixes. Notice that the *agreeing* suffixes are both smaller (***-o, -i, -aa***..) and simpler in form than the ***deriving*** suffixes (***-at, -atoo***, ***-aki, -imaa***…). However, what I call ***deriving*** suffixes may be interpreted as complex ***–ak-i, -im-aa,*** i.e. one could argue that the deriving suffixes contain the ***agreeing*** suffixes. It may be just a coincidence. But it is also conceivable that the complex suffixes are derived from the simplex ones. I leave this for future research. If I could, in the future, show that this is indeed the case, the finding would further support my claim about internal subdivisions within Blackfoot √verbs and transitivity suffixes. Namely, it would strengthen my argument

[22] With these forms, I cannot test suffix ***–i***, because if one adds ***-i*** to ***–a'pss/-a'p*** they turn out to be similar in form to ***–a'pssi/-a'pii*** whichcontain I and are not used as transitive. Thus it is impossible to tell if the attempted derivation is ungrammatical because the transitive form is ungrammatical or because the form is not interpreted as transitive.

that particular intrinsic transitivity is altered when a particular suffix is attached, and, moreover, the required suffix may be derived.

2.2.2.3 Blackfoot verbal roots are not homogeneous

In the previous subsection, I have argued that transitivity suffixes are not homogenous, some are ***agreeing*** and some are ***deriving***. If transitivity suffixes do indeed select for particular √verbs, then the split in suffixes must also indicate that √verbs are associated with the categorial information which can trigger agreement. Otherwise, what are these suffixes ***agreeing*** with? I propose that the √verbs in class 1 inherently agree in transitivity with their intransitive suffixes (hence the use of the term ***agreeing*** suffixes because the agreement is mutaul), while the transitive suffixes derive transitivity opposite to the one inherent to √verbs (hence the term ***deriving*** suffixes). Conversely, the √verbs in class 2 are inherently transitive and agree with their transitive suffixes, while their intransitivity has to be derived (48).

(48) **Classification of verbal roots & suffixes in Blackfoot**

√Verb 1	**Suffix A**	**√Verb 2**	**Suffix B**
$\surd verb_{\mathbf{INT}}$	$Final_{T}$ $Final_{INT}$	$\surd verb_{\mathbf{T}}$	$Final_{INT}$ $Final_{T}$

In the previous subsection, I have shown that the two sets of suffixes are not freely interchangeable and I concluded that they must form subtypes. In this section, I want to draw attention to another aspect of the same phenomenon: the fact that √verbs also fall into subcategories. The fact that distinct transitivity suffixes select for distinct √verbs means that these √verbs are intrinsically specified for transitivity. That is, I show that we need to recognize at least two subtypes of √verbs: transitive and intransitive (including genuine intransitives and pseudo-intransitives). I discuss each in turn.

Transitive √verbs. Intrinsically transitive √verbs combine with the agreeing suffixes ***–o*** and ***-i*** to form transitive verbal complexes.

(49) √**verb** [transitive] + {-o/-i}[transitive]

In other words, the transitivity value of both the √verbs and the suffixes is [transitive]. The following data illustrates the use of such √verbs in a sentence:

(50) a.innísskoyiiwa
inn -i-ssk -o-yii-wa
down-?-chase-TA-3>4-3SG
'He chased her off.' F&R 1995:52
*'He chased.'

b. á'psskima
á'p -ssk -i-mi-wa
about-chase-TI-3>4-3SG
'he sought after it' F&R 1995:13
*'He sought.'

Although the direct object may not be overtly expressed (since Blackfoot is a pro-drop language) it is always marked on the verb. The suffixes ***–o/-i*** encode both the transitivity of te verb and the animacy of the object. The suffixes ***- yi*** and ***-mi*** indicate the maping of the person hierarchy to the thematic hierarchy: third person subject is acting on another third person object, for transitive animate and transitive inanimate, respectively[23]. The suffix ***–wa*** indicates third person[24].

Table 8 provides a sample of intrinsically transtive √verbs.

[23] For inflectional paradigms, see Frantz 1991:44, 147-150. See also section 2.1.1 where I briefly discuss the person hierarchy.
[24] Frantz notes that ***w, y*** glides are deleted due to phonology. Our Blackfoot consultant often deletes the entire–***wa***.

Table 8. Intrinsically transitive √verbs: a sample

Transitive animate	Transitive inanimate	gloss
*in-**o***	*in-**i***	'see'
*istot-**o***	*istot-**i***	'make/build'
*ohkoon-**o***	*ohkoon-**i***	'find'
*o't-**o***	*o't-**i***	'grab by hand'
*ssk-**o***	*ssk-**i***	'chase'
*si'k-**o***	*si'k-**i***	'cover/hide'
*yooht-**o***	*yooht-**i***	'hear'

When the deriving suffixes ***–aki***, or ***-imaa*** are combined with these √verbs, intransitives (i.e. syntactic pseudo-intransitives) are derived[25]. In this case, the intrinsic [transitive] value of the √verb is over-ridden by the [intransitive] value of the deriving suffix. The resulting stem allows only for an NP object. In terms of the Algonquian template, the elements are assembled as in (51).

(51) [Root [transitive] Final[intransitive]] intransitive

In a sentence, the derived intransitive (syntactic pseudo-intransitive) is used as follows:

(52) a. innísska**ki** (imitáíks)
inn -i -ssk -**aki** imitaa-iksi
down-?- chase-P.INT dog -AN.PL
'He chased off (dogs).'

b. *innisska**ki** omiksi (imitaiks)
inn -i-ssk -**aki** omiksi imitaa-iksi
down-?- chase-P.INT DET dog -AN.PL
Intended: 'He chased off the dogs.'

Recall that the difference between transitive and pseudo-intransitives is in the use of determiners on the object. While pseudo-intransitives are ungrammatical with a determiner, transitives are ungrammatical without it (53).

(53) a. áaksinnisskoyiiwa ánni otáni
yaak-inn -i-ssk -o-yii-wa anni o-tani
FUT -down-?-chase-TA-DIR-3SG DET POSS-daughter
'She will chase her daughter off.' F&R 1995:51

[25] Frantz (1971:50) states that ***–imaa*** adds a semantic component of valid personal motivation on the part of the actor of the action. I could not replicate Frantz's finding in my fieldwork and leave this issue to further research.

b. *áaksinnisskoyiiwa otani
yaak-inn -i-ssk -o -yii-wa o-tani
FUT -down-?-chase-TA-DIR-3SG POSS-daughter
Intended: 'She will chase her daughter off.'

Note that not all intrinsically transitive √verbs have derived intransitive forms (I have tested dozens of √verbs, see appendix A for more examples)[26]. Note that not all transitives can be turned into intransitives and I do not know what to say about it yet.

Table 9. Intrinsic transitive to intransitive (syntactic pseudo-intransitive)

Transitive animate intrinsic	Transitive inanimate intrinsic	Intransitive derived	gloss
*in-**o***	*in-**i***	--	'see'
*istot-**o***	*istot-**i***	*istot-**aki***	'make/build'
*ohkoon-**o***	*ohkoon-**i***	*ohkoon-**imaa***	'find'
*o't-**o***	*o't-**i***	*o't-**aki***	'grab by hand'
*ssk-**o***	*ssk-**i***	*ssk-**aki***	'chase'
*si'k-**o***	*si'k-**i***	*?*	'cover/hide'
*yooht-**o***	*yooht-**i***	--	'hear'

Intransitive √verbs. Intransitive √verbs have two subclasses: **genuine intransitive** √verbs and **pseudo-intransitive** √verbs**.** Both subclasses of intransitive √verbs combine with the same ***agreeing*** suffixes ***-aa,-i***:

(54) √**verb** [intransitive] + {-aa/-i}[intransitive]
√**verb** [pseudo-intransitive]

One cannot tell apart the two sub-classes morphologically: the suffixes do not contrast. The difference between the two subclasses is syntactic: genuine intransitives do not allow for an optional NP object, while pseudo-intransitives do.

Pseudo-intransitives. Most morphologically marked intransitive √verbs are in fact syntactic pseudo-intransitives. A quick glance at the dictionary reveals that what is

[26] Some forms do not have the derived pseudo-intransitive in the dictionary, but these forms are often attested during elicitation.

listed as an intransitive stem is often in fact a pseudo-intransitive. This is obvious from the fact that the entry itself contains a requirement for some unspecified object:

(55)	***á'pitsíihtaa***	vai worry (about s.t.)	F&R 1995:12
	ohpommaa	vai buy (s.t.)	F&R 1995:114
	ikiiki	vai win a prize in a game of chance	F&R 1995:29
	ipiksi	vai strike, hit (s.t. or s.o.)	F&R 1995:60

However, not all pseudo intransitive entries are clearly specified as having an optional NP object. For example, the following √verbs allow for an NP, yet their dictionary entries do not mention any implied object:

(56)	***ikamo'si***	vai steal	F&R 1995:28
	ooyi	vai eat	F&R 1995:134
	wa'psskaa	vai bet	F&R 1995:200

Their syntactic behaviour helps to distinguish pseudo-intransitives from genuine intransitives.

(57) a. nítsoy**i** (ááattsistaa/aaattsistaáiks)
nit-oo**-i** aaattsistaa/ -iksi
1SG-eat-INT rabbit / -AN.PL
'I ate (rabbit/rabbits).'

b. nítsoy**i** (napayín/ napayínists)
nit-oo **-i** napayin/ -istsi
1SG-eat- INT bread /-IN.PL
'I ate (bread/breads).'

c. nítohpomm**a** (imitáá/imitáiks)
nit –ohpomm **-aa** imitaa/-iksi
1SG –buy - INT dog / -AN.PL
'I bought (dog/dogs).'

d. nítohpomm**a** (itáisooyo'p/itáisooyo'pists)
nit –ohpomm **-aa** it-a-i-oo-o'p/ -istsi
1SG –buy - INT there-IMP-eat –NOMZ / -IN.PL
'I bought (table/tables).'

We can see that both ***ohpommaa*** and ***ooyi*** can have optional NP objects, even though only ***ohpommaa*** is explicitly identified as having this option in the dictionary. For more pseudo-intransitive √verbs, see appendix A.

When the deriving suffixes ***–at***, or ***-atoo*** are combined with these √verbs, transitives are derived. In this case, the intrinsic [intransitive] value of the √verb is over-ridden by the [transitive] value of the deriving suffix. The resulting stem requires a DP object. In terms of the Algonquian template, the predicate is assembled as follows:

(58) [√**verb** [intransitive] Final[transitive]] transitive

In (59), I give a few examples of such derived transitives.

(59) a. nítsow**at**a omi ááattsistaa
nit-oo **-at**- wa omi aaattsistaa
1SG-eat- TA-1>3 DET rabbit
'I ate the rabbit.'

b. nítsow**atoo**'p omi napayín
nit-oo **-atoo**-'p omi napayin
1SG-eat- TI-1>3 DET bread
'I ate that bread.'

c. nítohpomm**at**a omi ááattisstaa
nit –ohpomm–**at**-wa omi aaattsistaa
1SG –buy -TA -1>3 DET rabbit
'I bought that rabbit.'

d. nítohpomm**atoo**'p omi napayín
nit –ohpomm **–atoo**-'p omi napayin
1SG –buy -TI -1>3 DET bread
'I bought that bread.'

Genuine intransitives. Like pseudo-intransitives, genuine intransitive √verbs also combine with the ***agreeing*** suffixes ***-aa,-i***. However, in contrast to the pseudo-intransitive, the intrinsic intransitives do not allow for an optional object:

(60) a. nitsí'poy
nit-í'po- **i**
1SG-speak- INT
'I spoke.'

b. *nitsi'poy anna Sam
nit -í'po-**i** anna Sam
1SG-speak- INT DET Sam
Intended: 'I spoke to Sam.'

c. nitsó'k**aa**[27]
nit -yó'k -**aa**
1SG-sleep- INT
'I slept.'

d. *nitsó'k**aa** paapáó'kaan
nit -yó'k **-aa** papa -yó'k -aa -n
1SG-sleep- INT in.dream-sleep-INT-NOMZ
Intended: 'I slept a dream.'

e. Anna Joe óatsipikkssi
anna Joe a-it-ipikkss-i
DET Joe IMP-there-flee-INT
'Joe is fleeing.'

f. *Anna Joe oatsipikkssi miistakists
anna Joe a-it-ipikkss-i miistak-istsi
DET Joe IMP-there-flee-INT mountain-IN.PL
Intended: 'Joe is fleeing to the mountains.'

The behaviour of the √verbs shows that they are genuinely intransitive. For some more examples see appendix A.

As in the case of pseudo-intransitives, transitives are derived by means of ***–at***, or ***–atoo***. The [intransitive] value intrinsically associated with the √verb is overridden by the [transitive] *deriving* suffix. The resulting predicate requires a DP object. In terms of the Algonquian template, the predicate is constructed as in (61):

(61) [√**verb** [intransitive] final[transitive]] transitive

[27] Alternative attested surface form: *nitsíyo'kaa*.

In (62), I give some examples of such predicates:

(62) a. nitsí'powatsi anna Sam
nit -í'po-at -**i** anna Sam
1SG-speak -TA-1>3 DET Sam
'I spoke to Sam.'

b. Anna Joe iitápipikkssi mistákiists
anna Joe i-itap-ipikkss-i mistaki-istsi
DET Joe ?-toward-flee-INT mountain-IN.PL
'Joe fled to the mountains.'

As is obvious from the examples in (60) to (62), not all intransitives form transitives. For example, ***yo'k*** 'sleep' represents an instance of a verb which the speaker could not convert into transitive with any of the suffixes discussed in this study. From the data set of (60), transitives can only be derived from ***i'po*** 'speak' and ***ipikkss*** 'flee'. Of the two derivations, only ***i'po*** 'speak' is derived with a transitive ***-at,*** i.e., a suffix. For ***ipikkss*** 'flee' the speaker used another strategy, namely the relative root ***itap*** 'toward'[28]. I do not address relative roots in this study, since my focus is the interaction between roots and suffixes. Crucially, relative roots are not selected by transitivity suffixes (see also a brief discussion in section 2.1.2). I hypothesize that Algonquian relative roots are akin to prepositional prefixes in that they derive a transitive verb as prepositional prefixes do in, for example, English ***look over ~ overlook.***

2.2.3 A note on Ritter & Rosen 2009

The analysis of Blakcfoot transitivity suffixes (finals) I have argued for above complements an analysis recently proposed by Ritter & Rosen (2009). In essence, Ritter & Rosen (2009) argue that the function of a transitivity suffix is to theta mark a particular subject and to license a particular kind of object – DP or NP. They propose to analyze these transitivity suffixes as v, or, as they put it, light verbs, i.e. verbs with both

[28] Frantz refers to them as 'linkers' (Frantz & Russell 1995, Frantz 1991).

functional and lexical properties. In what follows, I briefly discuss their proposal. In 2.2.3.1, I provide a summary of the proposal. In 2.2.3.2 I address the similarities and differencs between the analysis of finals suggested by Ritter & Rosen (2009) and the analysis suggested in this study.

2.2.3.1 Ritter & Rosen 2009: the gist of the proposal

In their discussion of finals, Ritter & Rosen (2009) first address what finals do not encode, namely, that (i) finals do not encode event structure; (ii) finals do not project arguments, they just license a particular object – NP or DP. Then they argue that finals are an overt manifestation of theta-marking v. Here is how the argument goes.

In section 7.1, Ritter & Rosen (2009) convincingly show how using distinct finals does not change the event interpretation. To illustrate the claim, they keep the verb root constant, while using pseudo-intransitive and transitive finals. If the verb contains a transitive final (e.g., ***-at***) and has a DP arguement , it is expected to have an endpoint, and therefore be classified as an accomplishment. If the verb contains a pseudo intransitive final (*e.g., -i*) and has an optional NP arguement, the endpoint is not expected, and the verb is usually classified as an activity. Ritter & Rosen (2009) show that regardless of which final is used – transitive or pseudo-intransitive – the verb behaves as an accomplishment in both cases. Based on this and other test they conclude that the choice of a final does not bear on the event structure.

In 7.2. Ritter & Rosen (2009) argue that the argument structure of the verb is lexical and is not determined by the choice of a final. They argue based on the data that verbs like ***oo*** 'eat', may take two arguments whether it is marked with the transitive suffix ***–at*** or pseudo-intranisitive suffix ***–i***. If the transitivity of the verb were determined by the finals, the use of a pseudointransitve final would not allow for an argument, which is not the case. Since the argument number of a verb does not change, the finals are not the source of transitivity alternations. The final choice in relation to

arguments matters only with respect to whether a given argument is a DP (transitive finals) or an NP (with pseudo-intransitive finals).

Having argued against the aspectual and transitive role of finals, Ritter & Rosen (2009) propose that finals are v, a light verb that theta marks the external argument DP and enters into a case checking relation with an internal DP argument. Crucially, right at this point of the proposal they add footnote 22 stating their assumption that v, n and a are functional heads that combine with category neutral roots and that Blackfoot is compatible with this approach. Next, Ritter & Rosen (2009) go over sets of data arguing that verbs containing intransitive inanimate finals cannot have experiencer or agentive subjects under any circumstances, and that transitive animate, transitive inanimate and pseudo-intransitive verbs may all be predicated to have an experiencer or agentive subjects regardless of grammatical gender; the subject need only denote an entity capable of will. This, according to Ritter & Rosen (2009), indicates that Blackfoot finals impose a semantic animacy requirement on external arguments.

2.2.3.2 Ritter & Rosen 2009: points of convergence and divergence

The analysis proposed by Ritter & Rosen (2009) and the analysis proposed here converge on several points. For example, both the findings of Ritter & Rosen (2009) and my findings indicate that transitivity suffixes do not determine the transitivity of a verbal stem. We both draw conclusions that transitivity must be lexical, i.e., intrinsic to the verb. In other words, the main distinction between the the analysis of Ritter & Rosen (2009) and the analysis in this study is the subject of research. While both analyses are concerned with transitivity suffixes, the focus is different. Ritter & Rosen (2009) are concerned with how transitivity affixes interact with the arguments; I am concerned with how transitivity suffixes interact with roots. Thus, while transitivity suffixes is the shared concern, I do not discuss the DP/NP status of arguments, and Ritter & Rosen (2009) do not explore roots (other than the above mentione footnote 22 where they

assume that Blackfoot roots are category neutral). However, I can say this much: if Ritter & Rosen (2009) account were exhaustive, and only the DP/NP syntactic status determined the use of a final, then we would not have the puzzle discussed in section 2.2.2.1, sample of data repeated bellow for convenience:

(63)	ihkiit**atoo**	o'ts**i**	
	ihkiit-**atoo**	o't-i	
	bake- **TI**	take- **TI**	
	ihkiit**at**	o't**o**	
	ihkiit-**at**	o't-**o**	
	bake- **TA**	take- **TA**	F&R 1995:17, 143
(64)	*ihkiit**si**	*o'ts**atoo**	
	ihkiit-**i**	o't-**atoo**	
	bake- **TI**	take- **TI**	
	*ihkiit**o**	*o't**at**	
	ihkiit-**o**	o't-**at**	
	bake- **TA**	take- **TA**	F&R 1995:17, 143

Namely, the ungrammaticality of formation of transitive predicates with finals that correctly signal the gender and syntactic status - NP or DP- of the argument would be unexpected under the analysis of Ritter & Rosen (2009). Yet this is the case.

The morpho-syntactic parsing of stems is the second difference that has implications on how the two analyses evolve. For example, Ritter & Rosen (2009) view ***–aki*** and ***i'taki*** as two finals that are often found on pseudo-intransitive verbs. Under my view, the only final in the pair is ***–aki***, while ***-i't*** 'feel' is a highly productive transitive light verb (one gets dozens of hits if one looks up in the dictionary ***-imm*** (TA) ~***i'tsi*** (TI), ***i'taki*** (PS.INT), F&R 1995:46); in addition, ***–aki*** selects for a particular subset of roots, namely, intrinsically transitive and derives the pseudo-intransitive verbs[29]. Another example where our assumptions about stems and where parsing diverge is the final ***–o***. I assume that there are two finals ***–o***. One is a benefactive ***–o***, which I do not

[29] For more discussion on the use of light verbs in Blackfoot, see sections 2.4.2, 2.5 and 5.2.2. A sample of light verbs is available in appendix D.

discuss but Ritter & Rosen (2009) discuss. Another is a transitive final ***–o***, which I discuss, but Ritter & Rosen do not discuss (my data repeated for convenience from section 2.2.2.1). I assume there are two finals ***–o***, because I do not get any benefactive interpretation of the examples as in (65):

(65) **Verb agreement with Animate DPs**

a. Anná Sam inoyí ómiksi imitáíks.
anna Sam in -**o** -yi omi-iksi imitaa-iksi
DET Sam see-**TA**-3>3 DET-AN.PL dog- AN.PL
'Sam saw the dogs.'

b. *Anna Sam in**i**m omiksi imitaiks.
anna Sam in -**i** -m omi-iksi imitaa-iksi
DET Sam see-**TI**-3>3 DET-AN.PL dog- AN.PL
Intended: 'Sam saw the dogs.'

Verb agreement with Inanimate DPs

c. Anná Sam in**í**m ómistsi napayínísts.
anna Sam in-**i**-m omi-istsi napayin-istsi
DET Sam see-**TI**-3>3 DET-IN.PL bread- IN.PL
'Sam saw the loaves of bread.'

d. *Anna Sam in**o**yi omistsi napayinists.
anna Sam in-**o** -yi omi-istsi napayin-istsi
DET Sam see-**TA**-3>3 DET-IN.PL bread- IN.PL
Intended: 'Sam saw the loaves of bread.

In the examples above, ***-o/-i*** alternations signal the distinction in animate/inanimate DP object. This ***–o*** is not benefactive marker as it does not introduce an indirect object.

Thus it is not necessarily the case that the two analyses are at odds with respect to the affixes, but rather that I concern myself with the distribution of the suffixes and I build my analysis on their distributional pattern, while Ritter & Rosen (2009) build their analysis based on the distribution of DP/NP arguments.

2.2.4 Summary

The goal of this chapter is to explore the patterns of categorization of Blackfoot roots. We have seen evidence that a subset of roots is uniquely identified as verbal. In particular, I have shown that transitivity suffixes select only for √verbs to the exclusion of other roots (2.2.1).

Given that not all transitivity suffixes can combine with all √verbs, there must be a particular selectable property intrinsic to all √verbs. I have argued that transitivity is such an intrinsic selectable property. Specifically, the interaction between √verbs and suffixes interaction reveals further distributional restrictions within the verbal domain.

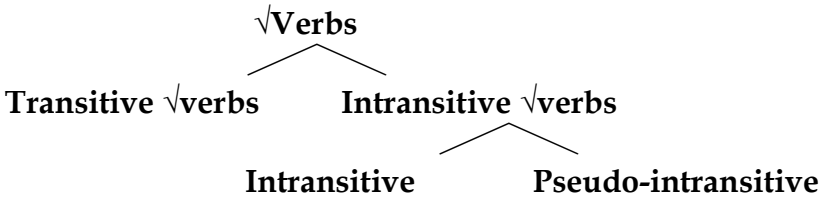
(i) *particular* transitivity suffixes combine with *particular* √verbs,

(ii) particular transitivity suffixes are in complementary distribution with other transitivity suffixes (2.2.2).

If transitivity suffixes alone would determine transitivity, this would be unexpected: all √verbs would combine with all transitivity suffixes. Note that Hirose (2000) argues that this is precisely what happens in Plainc Cree: in this language transitivity affixes determine the transitivity value of verbal predicates. This is not the case in Blackfoot. This leads to the conclusion that neither √verbs nor transitivity suffixes are homogenous in Blackfoot. I have argued that both √verbs and suffixes are further subcategorized based on their intrinsic transitivity.

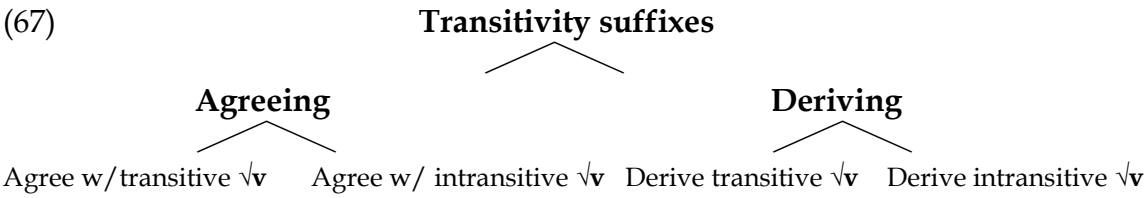
√Verbs fall into two subcategories: transitive and intransitive. Intransitive √verbs can further be classified into genuine intransitives as well as pseudo-transitives. This is illustrated in (66):

(66)



Furthermore, I have shown that transitivity suffixes too fall into two subcategories: ***agreeing*** and ***deriving:***

(67)



As illustrated in (67), some transitivity suffixes *select* for √verbs of a particular transitivity value, while other transitivity suffixes *derive* the value opposite to the one intrinsic to √verb.

The proposed classification of √verbs and transitivity suffixes complements the traditional classification of Algonquian verbal stems as illustrated in table 10. The traditional classification is based on verbal predicates, i.e. it treats the root-suffix combination as a unit. My classification is driven by the interaction between √verbs and suffixes. As a result, both √verb-intrinsic properties and the distribution of suffixes are understood better.

Table 10. Stem versus √verb classification

	Traditional classification of stems	**Proposed classification of √verbs**
unit of analysis	[Root (Medial) Final] $_{TA}$ [Root (Medial) Final] $_{TI}$ [Root (Medial) Final] $_{AI}$ [Root (Medial) Final] $_{II}$	(i) √verb (ii) suffixes
classes of √verb	n.a.	intrinsically transitive intrinsically pseudo-intransitive intrinsically intransitive
classes of suffixes	n.a.	agreeing transitivity deriving transitivity

Frantz (1971:45; 1991:99, footnote 123) already suggests that √verbs and transitivity suffixes need further analysis. He hypothesizes that some √verbs may be intrinsically transitive (1971:45). Frantz (1991:99, footnote 123) also distinguishes between 'abstract' and 'concrete' finals. However, according to Frantz, some of the suffixes analyzed here

would belong to the same class, e.g. transitive ***–i*** and ***–at***, yet their types set them apart under my analysis: one is ***agreeing***, the other is ***deriving***.

If we recognize √verbs as a subclass of roots with particular subcategories, the next question is whether other lexical categories are recognized and subcategorized, too. In what follows, I explore how Blackfoot distinguishes √nouns and √attributives.

2.3 Blackfoot nouns

In this section, I show that there is a subset of roots which is uniquely identified in that all roots in this class can be selected by the following functors: number marking and verbalizers (2.3.1). I conclude that these roots are inherently categorized as √nouns. Moreover, I argue that animacy is the characteristic property of Blackfoot √nouns. All and only √nouns are categorized based on animacy; and, furthermore, √nouns are subcategorized as either animate or inanimate (2.3.2).

2.3.1 Diagnosing Blackfoot √nouns

In this section, I show that there exist suffixes that select strictly for a subclass of roots, namely √nouns. In particular, I show that the same set of roots which can be affixed by plural markers can also be affixed by verbalizers but cannot be affixed by transitivizers. In contrast, these suffixes cannot be affixed to √verbs or √attributives. This establishes language-internal diagnostics for the categorial identity of √nouns.

2.3.1.1 All and only √nouns are marked by plural

Of the lexical categories, the plural suffixes ***–iksi*** (animate) and ***-istsi*** (inanimate) can combine with √nouns but not with √verbs or √attributives. This is illustrated in the data below. *Ottak* 'give a drink' is a √verb and as such it is obligatorily suffixed with the transitivity suffix, *-o* or *-i* (as discussed in section 2.2).

(68) a. ottak**o**yííwa
ottak-o-yii-wa
give a drink-TA-3:4
'He gave her a drink.'

b. áakottak**i**wa
yaak-ottak-i-wa
FUT- give a drink-INT-3SG
'He will serve drinks.'

F&R 1995:145

This √verb cannot be affixed with a plural suffix no matter whether the plural marking is animate ***-iksi*** (69) or inanimate ***-istsi,*** (69):

(69) a. *ottakiksi
ottak -iksi
give a drink -AN.PL
Intended: 'bartenders'

b. *ottakistsi
ottak-istsi
give a drink -IN.PL
Intended: 'bartenders'

Furthermore, √attributives cannot be suffixed by the plural marker either. For example, the √attributive ***(y)aahs-*** 'pleasing' is ungrammatical with a plural marker (see section 2.4 for a discussion of the diagnostic properties of √attributives; see appendix C for a list of such √attributives).

(70) a. *aahsiksi
yaahs-iksi
pleasing-AN.PL

b. *aahsistsi
yaahs-istsi
pleasing-IN.PL

Intended: 'the pleasant ones'

I have tested at least one hundred √attributive and √verb roots. This establishes that only √nouns can be selected by plural marking at the root level (see more discussion about stem level in chapter 5). Table 11 sums up the findings.

Table 11. Selectional restrictions of nominal plural

Suffix	√noun	√verb	√attributive
Plural ***- iksi, -itsi***	✓	✖	✖

2.3.1.2 √Nouns are selected by verbalizers

In section 2.2.1.1, I have shown that √nouns cannot be used as √verbs. However, verbs can be derived from √nouns. The verbalizers ***–(w)a'si*** 'become/turn into' and ***–hkaa***[30] 'acquire' strictly select for √nouns to the exclusion of other roots. I discuss each of them in turn.

The suffix ***–(w)a'si*** 'become/turn into' is productive. For example, it frequently appears in magic narrative contexts (e.g., stories that involve ***Naapi***, the trickster).

Ninaa 'man, chief', ***itohtok*** 'pine tree' and ***kiaayo*** 'bear'are √nouns. When the verbalizer ***–(w)a'si*** is suffixed, these √nouns become intransitive verbs, as shown in the dictionary examples below [31].

(71) a. áaksina**was'**iwa
yaak-ninaa-**wa's**-i-wa
FUT-man/chief-turn.into-INT-3SG
'She will become a chief.' F&R 1995:49

b. nitsítohtok**a's**i
nit-itohtok-**wa's**-i
1sg-pine-turn.into-INT-3SG
Lit.: 'I turned into a pine tree.'
'I was a wallflower.' F&R 1995:82

[30] An alternative surface form is ***–sska,*** conditioned phonologically.
[31] How do we know that these are indeed roots rather than stems? Thus far, I do not have *irrefutable* evidence. I can only say that the Blackfoot data facts are consistent with the hypothesis that this is a root level derivation. I base my judgement on the behaviour of roots. In English, category-neutral ROOTS can be used across syntactic categories, while categorized roots cannot be used in this way. In Blackfoot, all lexical roots already behave as categorized in that they do not occur across categories.

c. iihkiááyo**wa's**iwa
ii-ohkiaayo-**wa's-**i -wa
?- bear -turn.into-INT-3SG
'He became enraged.'
Lit: 'He turned into a bear.' F&R 1995:200

For example, constructions with ***-wa'si*** are easily obtained in elicitation context when, e.g., talking of ***Naapi***, the trickster , in magic narrative stories.

(72) a. ksááhkoi**wa'si**
ksaahko -**wa's**-i-wa
dirt-turn.into-INT-3SG
'He turned into dirt.'

b. sikóóhkotok**a'si**
sik-oohkotok-**wa'si**-wa
black-stone-turn.into-INT-3SG
'He turned into a black stone.'

c. píítaa**wa'si**
piitaa-**wa's**-i-wa
eagle-turn.into-INT-3SG
'He turned into an eagle.'

Context: describing how ***Naapi*** the trickster can magically turn into anything

–(w)a'si selects for √nouns and is ungrammatical with roots of any other category. While denominal examples abound, neither √verbs nor √attributives can combine with it ***-wa'si*** priductively. For example, ***yo'k-*** 'sleep' is a √verb. Suffixing the verbalizing suffix ***–(w)a'si*** to this root yields ungrammaticality, as with roots ***sspommo*** and ***i't***:

(73) a. *yo'k**a'si**
yo'k -**wa'si**
sleep- turn.into.INT
Intended: 'S/he became sleepy.'

b. *sspommo**wa'si**
sspommo -**wa'si**
help- turn.into.INT
Intended: 'S/he became helpful.'

c. *i't**a'si**
i't -**wa'si**
feel emotion- turn.into.INT
Intended: 'S/he became emotional.'

The ungrammaticality of the examples like the one above shows that ***–(w)a'si*** cannot attach to √verbs. This is confirmed by the fact that such derivational examples are not attested in Frantz & Russell's dictionary (1995).

Similarly, ***-(w)a'si*** cannot suffix to √attributives. For example, ***itsik-*** 'weak, ***ikkahs-*** and ***inikk-*** 'angry' ' are √attributives (see section 2.4 and appendix C) and suffixation of ***–(w)a'si*** 'become/turn into' onto ***itsik-*** results in ungrammaticality.

(74) a. *nitsiitsik**a'si**
nit-itsik-**wa's**-i
1sg-?-weak- turn.into-INT
Intended: 'I became weak.'

b. *kitsikkahs**a'si**
kit-ikkahs-**wa'si**
2sg-funny- turn.into-INT
Intended: 'You became funny.'

c. inikk**a'si**
inikk-**wa'si**
angry- turn.into-INT
Intended: 'You became angry.'

Note that there is no obvious semantic reason for the ungrammaticality of (74). I conclude that the ungrammaticality is due to the mismatch between the category of the root ***itsik-*** and the category that ***–(w)a'si*** selects for. This is consistent with my proposal that affixes are sensitive to properties intrinsic to roots. Since ***itsik-*** is not a √noun, ***–(w)a'si*** cannot select for it.

Next we turn to the second verbalizing suffix ***–hkaa*** 'acquire', which also selects for √nouns. When ***–hkaa*** is affixed to √nouns ***atsikin*** 'mocasin', ***naamaa*** 'gun', and ***sski*** 'face' the result is an intransitive verbal predicate as in (75).

(75) a. aitsikii**hkaa**
a-atsikin-**hkaa**
IMP-moccasin-acquire.INT
Lit.: 'the shoe aquires'
'a cobbler' F&R 1995:7

b. inaamaa**hkaa**
i-naamaa-**hkaa**
?-gun -acquire.INT
'get a trophy' F&R 1995:47

c. nitsíímaohksski**hkaa**
nit-ii-maohk-sski-**hkaa**
1sg-?-red-face-acquire.INT
Lit.: 'I got red face.'
'I blushed.' F&R 1995:126

The verbalizer ***–hkaa*** is ungrammatical, however, when it combines with √verbs. For example, it would be feasible to expect that the verbalizing suffix***–hkaa*** could combine with the verbal root ***waatoht*** 'taste' and derive a predicate 'acquire taste', or combine with the ***ipo*** 'speak' and derive 'acquire speech', or ***iksiin*** 'touch' could become 'acquire touch '. However, the results are ungrammatical:

(76) a. *nitaatoht**sskaa**
nit-waatoht-**hk-aa**
1SG-taste acquire- INT
Intended: 'I acquired taste.'

b. *nitsipo**hkaa**
nit-ipo-**hk-aa**
1SG-speak- acquire- INT
Intended: 'I acquired speech.'

c. *nitsiksii**hkaa**[32]
nit- iksiin -**hk-aa**
1SG-touch- acquire- INT
Intended: 'I acquired touch.'

[32] Deletion of n is expected here, as it is often deleted at morphological boundaries or word initially.

The ungrammaticality of examples like the one above indicate that ***–hkaa*** cannot co-occur with √verbs (over fifty examples tested in fieldwork)**.** This follows from the claim that roots are intrinsically associated with a unique categorial identity and suffixes select for that particular category.

Similarly, ***-hkaa*** cannot be suffixed to √attributives. No such examples are attested in the Blackfoot dictionary. Moreover, all my constructed examples have been judged ungrammatical in elicitation. For example, the roots ***ssok-*** 'heavy', ***maohk*** 'red' and ***ihta-*** 'lucky' are √attributives (appendix C) and they cannot be suffixed with ***-hkaa*** as shown in (77).

(77) a.*iikssok**sskaa**
iik-ssok -**hk**-**aa**
INT-heavy- acquire- INT
Intended: 'She got heavy.'

b. *iikmaohk**sskaa**
iik -maohk -**hk**-**aa**
INT-red- acquire- INT
Intended: 'She got red.'

c. *iikihta**hkaa**
iik -ihta -**hk**-**aa**
INT-lucky- acquire- INT
Intended: 'She got lucky.'

The ungrammaticality of these examples is representative of over fifty attempts to affix verbalizers onto √attributives.

In sum, only √nouns can be selected by the two verbalizing suffixes (***-hkaa*** and ***-(w)a'si***). Roots of the other categories are excluded in this context, as it is summarized in table 12.

Table 12. Selectional restrictions of verbalizers

affix	√noun	√verb	√attributive
verbalizer ***-hkaa*** (***-sska***) ***-(w)a'si***	✓	✖	✖

2.3.2 √Nouns are subcategorized

In the previous subsection, I have shown that √nouns are selectable. But what is the selectable property that suffixes are sensitive to? In this section, I propose that animacy is the selectable property intrinsic to √nouns[33] **.**

When embedded in a nominal phrase, Blackfoot √nouns are obligatorily suffixed by (i) proximate/obviative marking and (ii) number marking (Frantz 1991; 1997; Bliss & Glougie 2009). Thus, these two types of suffixes serve as the Blackfoot-specific characteristics of nounhood. I discuss each of them in turn.

Roughly, proximate/obviative marking encodes the relative prominence of the discourse referent denoted by the DP (Frantz 1991:12). Proximate singular nouns are suffixed with ***–wa*** while obviative singular nouns are suffixed with ***–yi*** **(**glides are dropped after consonants).

(78) a. aakíí**wa**
aakii-**wa**
woman-PROX
'woman'

b. aakíí**yi**
aakii-**yi**
woman-OBV
'woman'

Frantz 1991:12

According to Frantz (1971, 1991), Blackfoot nouns are always overtly marked as either proximate or obviative when used in a sentence. The absence of proximate/obviative marking in the singular is only apparent. In particular, Bliss & Glougie (2009) show that there are certain phonological processes which are sensitive to this marking. However, in the grammar of my consultant (Blood dialect) proximate/obviative marking does not always manifest itself overtly. Rather, in this dialect, ***aakii*** may surface without any overt marking.

Next we turn to number marking, the other morpho-syntactic diagnostic for nounhood in Blackfoot. As shown in (79), singular nouns are morphologically

[33] One could argue that, there may exist more than one selectable property. I leave this as open question for further research across languages and across categories.

unmarked (a-b), while plural forms are suffixed (c-d)[34]. Observe that the choice of the plural suffix depends on the animacy of the √noun. If the √noun is animate, it is suffixed with ***–iksi***. If the √noun is inanimate it is suffixed with ***–istsi*** (Frantz 1991:7-8). Note that the plural suffixes of the nouns usually drop the final vowel ***–i***[35]**.**

(79) **Blackfoot: nominal number**
Singular

a. aakíí	b. napayín
aakii	napayin
'woman'	'bread'

Plural

c. aakíí**ks(i)**	d. napayín**ists(i)**
aakii-**iksi**	napayin-**istsi**
woman-AN.PL	bread-IN.PL
'women'	'breads'

In contrast, ***-iksi*** cannot suffix onto an inanimate √noun, and ***-istsi*** cannot suffix onto an animate √noun.

(80) **Blackfoot: plural marking is sensitive to animacy**

a. *aaki**ists(i)**	b. *napayín**iks(i)**
aakii-**istsi**	napayín-**iksi**
woman-IN.PL	bread-AN.PL
'women'	'breads'

This establishes that animacy is a selectable feature in Blackfoot: the choice between plural suffixes depends on whether the √noun is animate or inanimate. We can conclude that the animate/inanimate distinction is a characteristic property intrinsic to √nouns[36]. Plural marking is sensitive to this distinction, but it does not determine it – otherwise we would expect that either animate or inanimate plural can be attached to

[34] As mentioned earlier, Frantz (1991: 8, footnote 5) points out that there is singular number marking that may not be used by the speakers. See also (Glougie & Bliss 2009).
[35] Determiners have the same plural suffixes, and there the final ***–i*** is retained.
[36] For failed attempts to alter the animacy of Blackfoot nouns, see also Johansson 2008.

all √noun. The ungrammaticality of (80) establishes that the animacy of the √noun is not dependent on the type of plural marking attached to it.

There is however a group of √nouns which are not specified as either animate or inanimate. Such √nouns are not extensively discussed in the literature (Uhlenbeck 1938; Taylor 1969; Frantz 1991), although a quick search in the dictionary yields some, and fieldwork testing confirms their use (Frantz & Russell 1995). Wiltschko (2009) notes that the inanimate forms denote the general referent while the animate forms refer to a special case, i.e. animate forms are marked. For example, the general inanimate form for dish refers to earthenware items while the culturally novel animate form refers to metallic items, i.e. came into use later:

(81) a. ko's nin dish (earthenware or wooden);
kó's**istsi** dishes;

b. ko's nan dish, bowl (made from tin or metal);
kó's**iksi** dishes; F&R 1995:92-93

The two entries for ***ko's*** are the same in form and differ in their interpretation only due to the difference in their animacy specification. The same strategy to differentiate between two identical forms is found in nominalization of verbs, i.e. in derived nouns.

(82) a. iihtáísínaakio'p inanimate 'pencil, pen'

iihtáísínaakio'p**istsi**
iiht-a-i-sinaa-aki-o'p-**istsi**
means-IMP-/-write- INT-NOMZ-IN.PL

b. iihtáísínaakio'p animate 'camera'

iihtáísínaakio'p**iksi**
iiht-a-i-sinaa-aki-o'p-**iksi**
means-IMP-/-write- INT-NOMZ-AN.PL

The use of this strategy means that it is a productive means of coining new forms. At this point, I do not have enough data or generalizations about roots that can be of either animacy to offer an analysis of how cultural novelty relates to the use of [animate]. I

concur with Wiltschko (2009) that [animate] is the marked form. For now, I leave the issue to further research.

What is crucial for our purpose however is the fact that even though the roots that may be of either gender are not intrinsically specified as either animate or inanimate they nevertheless cannot be used *without* a specification in animacy. I contend that such forms, because they are √nouns, are abstractly specified for animacy. This specification can be viewed as a requirement that the √noun must receive a value for animacy[37]. A counterexample to such claim would be √nouns without any marking for animacy. Such nouns are not attested, to the best of my knowledge. Moreover, I would predict that they would be impossible due to how the affixal system is organized. Namely, the plural suffixes select for roots with intrinsic animacy; if any specification for animacy is missing then the derivation would not be possible.

Further evidence that the animate/inanimate distinction is a category intrinsic property in Blackfoot comes from the fact that it triggers DP-internal as well as DP-external agreement. DP internally, a determiner preceding a plural noun is suffixed by the same plural marker as the noun itself, an instance of alliterative agreement (see Corbett 2006). Thus, a plural animate noun is preceded by a determiner suffixed with ***–iksi*** (a), while a plural inanimate noun is preceded by a determiner suffixed with ***–istsi*** (b):

(83) **[Animacy] agreement with determiners**

a. Anná Sam inoyí óm**iksi** imitá**íks**.
anna Sam in -o -i omi-**iksi** imitaa-**iksi**
DET Sam see-TA-3>4 DET-AN.PL dog- AN.PL
'Sam saw the dogs.'

b. Anná Sam iním óm**istsi** napayín**ísts**.
anna Sam in -i -ma omi-**istsi** napayín-**istsi**
DET Sam see-TI-3>4 DET-IN.PL bread - IN.PL
'Sam saw the breads.'

[37] Alternatively, we could assume two separate lexical entries, one specified as [animate], the other specified as [inanimate].

This establishes that the determiner agrees with the noun in number and animacy. Assuming that agreement is a syntactic relation, it follows that animacy is syntactically active.

Similarly, the transitivity suffixes (i.e., the finals) on the verb agree with object DPs in terms of animacy. Two different transitive markers are used depending on the animacy of the object. In (84), animate objects co-occur with ***–o*** (a) but not with ***–i*** (b), while inanimate objects co-occur with ***–i*** (c) but not with ***-o*** (d).

(84) **Verb agreement with Animate DPs**

a. Anná Sam in**o**yí ómiksi imitáíks.
anna Sam in-**o** -i omi-iksi imitaa-iksi
DET Sam see-**TA**- 3>4 DET-AN.PL dog- AN.PL
'Sam saw the dogs.'

b.*Anna Sam in**i**m omiksi imitaiks.
anna Sam in-**i** -ma omi-iksi imitaa-iksi
DET Sam see-**TI**-3>4 DET-AN.PL dog- AN.PL
Intended: 'Sam saw the dogs.'

Verb agreement with Inanimate DPs

c. Anná Sam in**í**m ómistsi napayínísts.
anna Sam in -**i** - ma omi-istsi napayin-istsi
DET Sam see-**TI**-3>4 DET-IN.PL bread- IN.PL
'Sam saw the loaves of bread.'

d. *Anna Sam in**o**yi omistsi napayinists.
anna Sam in -**o** -i omi-istsi napayín-istsi
DET Sam see-**TA**-3>4 DET-IN.PL bread- IN.PL
Intended: 'Sam saw the loaves of bread.

In light of these data we can conclude that animacy is a characteristic grammatical feature of Blackfoot nouns. I propose that animacy is in fact the grammatical property which distinguishes √nouns in Blackfoot from roots that are associated with a different categorial identity.

The claim that Blackfoot animacy is grammatical rather than based on real world knowledge (i.e., ontological properties) is evidenced by the existence of mismatches. While all ***ontologically animate*** entities are also ***grammatically animate, ontologically inanimate*** entities may or may not be ***grammatically animate.*** This is illustrated in the examples below, which are ontologically inanimate but grammatically animate.

(85) **Animacy mismatches: ontological versus grammatical**

a. pokón**iksi**	b. isttoa**íksi**
pokon-**iksi**	isttoan-**iksi**
ball- AN.PL	knife- AN.PL
'ball'	'knife'

Furthermore, there are some non-sentient entities that one could expect to be consistently marked as grammatically animate yet they are grammatically inanimate. For example, if we rely on world knowledge, it would be plausible to expect that human body parts would be consistently animate. This is not so. Body parts may be either animate or inanimate, as table 13 illustrates:

Table 13.Variation in the animacy of body parts[38]

Body part	Animacy
mohpikís rib; **mohpikíístsi** ribs;	inanimate
mohpín lung; **ohpíístsi** his lungs;	inanimate
mótookis kidney; **ótookiistsi** his kidneys	inanimate
mooní'si forehead; **kooní'sinnoonistsi** our foreheads;	inanimate
móópikkinaan nostril; **móópikkinaanistsi** nostrils;	inanimate
mootohtón heel; **mootohtónistsi** heels;	inanimate
mootóónis lip; **ootóóniistsi** his lips;	inanimate
mósskitsipahp heart; **mósskitsipahpistsi** hearts;	inanimate
mohtóókis nin ear; **mohtóókiistsi** ears;	inanimate
mohsoyís tail; **sáahkohsoyiistsi** short tails	inanimate
moápssp eye; **moápsspiksi** eyes;	animate
mohkinán calf (of the leg); **mohkináíksi** calves;	animate
mohksistón throat; **mohksistóniksi** throats;	animate
mookítsis toe/finger; **mookítsiiksi** toes/fingers;	animate
móós anus, derriere; **móósiksi** derrieres;	animate
móótoyi's navel; **móótoyi'siksi** navels;	animate
motokís skin or hide; **motokííksi** skins or hides;	animate
mottoksís knee; **nottoksííksi** my knees;	animate
mohkíítohksiston larynx; **mohkíítohksistoniksi** larynxes;	animate

[38] The possessive forms are a given because these are body parts and are obligatorily marked for possession. When there is no explicit possessor who posseses the body part, possessive prefix ***m-*** is used to indicate an unknown possessor. Possession has been briefly discussed in section 2.1.2.

For ease of exposition, the plural is bolded in all the entries of the above list. I have not been able to ascertain any particular semantic reasons to assign distinct animacy to different body parts. That grammatical animacy is not fully predictable on the basis of the ontological properties is also reflected by the organization of the Blackfoot dictionary: all nominal entries are listed as either animate or inanimate (Frantz & Russell, 1995). If nominal animacy were predictable, such specification would not be necessary[39].

The difficulty in predicting the assignment of animacy is noted across Algonquian languages, i.e. it is not a new problem specific to my proposal. Darnell & Vanek (1976) propose that ***power*** decides which nouns are animate. Power is the ability and freedom to act and interact; and animates have some additional quality of either physical or spiritual reality which puts them in a special relationship to the power which drives the universe. This approach does not appear to help with the Blackfoot data. That is, it is not clear as to why for example the animate noun *móótoyi's* 'navel' would have a special relationship with the universe, while the inanimate noun ***mootóónis*** 'lips' would not. As such the claim has no predictive power and is thus no more illuminating than postulating arbitrariness.

Craik (1982) draws on religious/cosmological views of the Cree to try to ascertain the animacy of particular nouns. Again, I could not discern any mythological

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[39] Johansson (2008) shows that even in fictional settings the animacy intrinsic to Blackfoot nouns cannot be overridden, unlike, e.g., in Cree. Plains Cree singular demonstratives agree with nouns and have two forms: animate *awa,* and inanimate *ōma.* The entry for 'flower' is inanimate:

o*ma w*a*pikwaniy*
'this.**IN.S** flower.**IN.S**' Johansson 2008: 6

However, if 'flower' is used with an animate intransitive, the gender of the noun changes:

*awa w*a*pikwaniy kisiw*a*siw*
awa wapikwaniy kisiwasi-w
this.**AN.S** flower.**AN.S** be.angry.**AI**-3.s
'This (animate) flower is angry.' Johansson 2008: 7

connections to Blackfoot animacy. For example, in the context of creation stories involving the trickster Naapi, the animacy of nouns remains intrinsic even if one builds on Naapi's magic powers to bring about the change.

The approach taken by Dahlstrom (1995) as well as Quinn (2001, 2004) is more promising. They both abandon the attempt to find one common thread that would unify animacy assignment to all entries. Instead they try to establish and predict the assignment of animacy to particular clusters of nominals. To examine Algonquian gender, Dahlstrom (1995) uses Lakoff (1987)'s notion of ***radial categories***. Under this view, the category of animates is internally structured. The central members are picked out by a semantic feature, while the peripheral members are connected to more central ones by semantic links. However, it is difficult to account for "some exceptional, unmotivated members" (Dahlstrom 1995:125).

Quinn (2001, 2004) suggests that Penobscot nouns attain animacy by analogy, based on different semantic features. For example, one contrast would be between "*Biggish Juicy Fruits and Vegetables, Versus Those Which Are Not*" (Quinn 2004:5). Once you know that one biggish juicy fruit is animate, the rest of that group will be animate, too. The problem is that one could not easily or intuitively predict either the relevant semantic feature at play or the criteria for the membership in the group. For example, the word for 'raspberry' is animate so it belongs to the class of *Biggish Juicy Fruit*. However, one could argue that raspberries are actually smallish, if anything. In sum, further research needs to be done to establish whether there are predictable patterns of animacy assignment in Blackfoot nominals.

While it is not clear whether there is a semantic underpinning for the subcategorization of nouns into animate and inanimate nouns, we can nevertheless use animacy as a criterial diagnostic for nounhood: there is a well-defined subset of roots which is intrinsically associated with animacy.

Given that animacy distinctions are only made visible by plural suffixes, we can use plural marking as a test to detect it. Thus, the ability of a root to be marked for

plural identifies it as a √noun (see appendix B for a sample list of nouns and their pluralizations tested for this thesis).

2.3.3 Summary

In this subsection, I have shown that there is a well-defined set of roots which can be analyzed as √nouns. The existence of √nouns has been verified by morphosyntactic diagnostics. Based on the environments summarized in table 14, I have shown that roots are intrinsically categorized: verbalizers and transitivizers can only attach to nouns. In addition pluralization has established the existence of two subcategories, based on animacy (animate and inanimate). Any root which cannot be suffixed by these affixes is either a √verb or an √attributive.

Table 14. √Nouns: subject to selectional restrictions

Affix	√nouns	√verb	√attributive
plural marker ***- iksi, -itsi***	✓	✖	✖
verbalizer ***-hkaa (-sska)*** ***-(w)a'si***	✓	✖	✖
transitive affix ***-atoo***	✖	✓	✖

The suffixes I have considered here (plural marking, verbalizers and transitive markers) impose particular selectional restrictions on the roots of particular categories, summed up in the following table:

Table 15. Suffix selection correlations

Suffix	Function	selects	excludes
-iksi	nominal plural	$n_{animate}$	v, a, $n_{inanimate}$
-istsi	nominal plural	$n_{inanimate}$	v, a, $n_{animate}$
-hkaa[40]	verbalizer	n	v, a
-(w)a'si	verbalizer	n	v, a
-atoo	transitivity suffix	v	a, n

As the table shows, we have both positive and negative evidence for positing the category noun. The positive evidence is that √nouns are selected by nominal plural and verbalizers. The negative evidence is that √nouns are excluded by transitivity suffixes. Moreover, aside from selectional restrictions revealed by means of the suffixes above, the nounhood of roots can further be detected on the basis of their subcategorization properties. All and only nouns are subcategorized as either animate or inanimate (hence the split in plural suffixes: animate versus inanimate), and a small subset that are not subcategorized can be either animate or inanimate. Therefore I have proposed that animacy is the distinguishing property of √nouns in Blackfoot. It is characteristic of √nouns in Blackfoot, as evidenced by the fact that no other class of roots is marked as such. Moreover, it is intrinsic to √nouns as evidenced by the fact that there is no overt marker corresponding to the animate/inanimate distinction. This establishes that animacy sets apart √nouns as a grammatical category in Blackfoot. On the basis of this, we can conclude that roots that are intrinsically either animate or inanimate are √nouns. Bellow, I schematically illustrate the split of √nouns into subcategories:

(86) $\sqrt{\textbf{nouns}}_{\text{Animacy}}$

$\sqrt{noun}_{animate}$ $\sqrt{noun}_{inanimate}$

[40] Alternative surface form ***–sska,*** phonologically conditioned.

2.4 Blackfoot √attributives

In this section, I discuss attributive roots, i.e. √attributives. I have taken the term attributive from the Algonquian tradition (specifically, Taylor 1969:159, Uhlenbeck 1938:59-60). It roughly corresponds to adjectives in other languages (cf. Dixon & Aikhenvald 2004). However, I believe that the term *attributive* captures their behaviour and categorial status more accurately than the term *adjective* would. The contrast in the definitions is telling:

Adjective: a term used in the grammatical classification to refer to the main set of items attributes of nouns. From a formal point of view, four criteria are generally invoked to define the class in English (and similar kinds of criteria establish the class in other languages): they can occur within a noun phrase, they can occur in predicative position, they can be premodified with an intensifier, and they can occur in a comparative and a superlative form. Crystal 2008:11-12

Attributive: a term normally used to refer to the role of adjectives and nouns when they occur as modifiers Crystal 2008: 43

Adjectives are distinguished by identifieable distributional and semantic criteria, while attributives distinguished by their use as modifiers. As I will shortly show, the very lack of particular formal criteria makes a sublass of Blackfoot roots more attributive like than adjective like.

In contrast to √nouns and √verbs, roots that I call attributive lack intrinsic categorial identity and consequently they cannot be classified into further subcategories. Accordingly, √attributives cannot be selected by category-specific affixes. I argue that this is precisely what sets Blackfoot √attributives apart: they are the elsewhere case of the lexical categories[41]. To reflect this finding I refer to such roots as √attributives without labelling them as adjectives.

[41] It is difficult to say exactly how big the class is. If one relies on the entries in Frantz & Russell (1995) dictionary, the rough estimate is around 300 entries.

This section is organized as follows. In 2.4.1 I provide evidence for the lack of selectional restrictions specific to √attributives. In 2.4.2, I examine the lack of an intrinsic feature. In section 2.4.3, I conclude.

2.4.1 Diagnosing Blackfoot √attributives

How can we distinguish √attributives from roots of other categories? We have already seen that √attributives can be distinguished from √verbs based on their inability to be selected by transitivity suffixes (section 2.2.1.1). Similarly, they can be distinguished from √nouns based on their inability to combine with plural suffixes (section 2.3.1.1). In other words, at the root level, √verbs and √nouns cannot be derived from √attributives. Table 16 sums up the findings.

Table 16. √Attributives: subject to selectional restrictions

Affix	√attributive	√verb	√noun
transitivity suffix ***-atoo, -i, -attsi***	✖	✓	✖
plural suffix ***-iksi/itsi***	✖	✖	✓
attributive suffix ***-i, -o*** ***-ssi/-ii***	✓	✖	✖

So there are appears to be at least one environment – namely with attributive suffixes – that is specific to √attributives. I examine attrubutive suffixes in the next section.

2.4.2 Characteristics of constructions with √attributives

Having concluded that √attributves do not appear within either nominal or verbal environment, I will now show that it is difficult to find an environment specific to √attributves only. First, I will argue that the only construction where one can single out √attributves is not used productively; next I will argue that a construction that frequently uses √attributves is also productive with roots other than √attributves. The difference between the two constructions can be reduced to their structural composition. The unproductive construction contains suffixes attaching directly to √attributves. The productive constructiona has a placeholder root – a semantically empty root necessary to form a grammatical form - intervening between the suffix and the √attributve. Schematically this is illustrated as below:

(87) a. unproductive: [[√attributive] attributive intransitive suffix]]
b. productive: [[√attributive] [[√**placeholder**] attributive intransitive suffix]]]

First, I will go over what I call the unproductive construction. One can find the following forms with √attributives :

(88) a. íík**s**sok**s**i
iik-ssok-**i**-wa
INT-heavy-**be.AN**-3SG
'She is heavy.'

b. ií-ssok-**ó**-wa
ii-ssok-**o**-wa
?-heavy-**be.IN**-3SG
'It is heavy.' F&R 1995:177

(89) a. áaksikkini**ssi**
yaak-ikkina **-ssi**
FUT -soft/slow-**be**.**AN**
'S/he will be soft, easy.'

b. áaksikkin**ii**
yaak-ikkina**-ii**
FUT -soft/slow-**be**.**IN**
'It will be soft, easy.'

The attributives here are selected by what I refer to as **attributive suffixes**. These attributive suffixes come in animate/inanimate pairs as shown in table 17:

Table 17. Attributive suffixes

Animate	Inanimate
-i	-o
-ssi	-ii

One could then argue that here is a grammatical environment specific only to √attributives. Based on these data, it might seem that the selectional restrictions of this set of suffixes serves as a test to identify √attributives. This distributional restriction appears to contradict the claim that √attributives are not associated with a categorial identity and as such may not be selected: attributive intransitives appear to select √attributives. Crucially, however, the use of these attributive suffixes is not productive in Blackfoot. Combining fieldwork and dictionary data, I have found approximately 30 examples of forms derived with these attributive suffixes I assume that these forms are fossilized[42]. Let us take a look at their distribution.

According to Taylor (1969) and Frantz (Frantz & Russell 1995) these suffixes are listed as verbal finals and as such should pattern with other transitivity suffixes. According to Denny (1978), these suffixes are stative in the sense that they derive states rather than dynamic events. There are however two problems with the assumption that these suffixes form statives. First, if these were genuine verbal finals, then they should combine with all verbal roots:, or at least with the ones that denote states, such as ***ksimsst*** 'think'. This is not the case. These suffixes select for a subset of roots that do not participate in transitive-intransitive alternations. That is, they exclude what I call √verbs such as ***ksimsst*** 'think' or ***oo*** 'eat'**,** as evidenced in (90)-(91):

(90)	a. *ksimsst**s**i	b. *oow**o**
	ksimsst **-i**	oo-**o**
	think-**be.AN**	eat- **be.IN**
	Intended: 'thoughtful'	'edible'
(91)	a. *ksimsst**ss**i	b. *ooy**ii**
	ksimsst **-ssi**	oo-**ii**
	think-**be**.**AN**	eat-**be.IN**
	Intended: 'thoughtful'	'edible'

[42] I do not have historical evidence for this. My assumption is based on the fact that in other Algonquian languages, e.g. Cree, cognate suffixes ***-ssi/-ii*** are widely used (where Blackfoot uses ***–a'pssi/-a'pii)***.: ***-ssi/ii*** is prominent in for example Cree (Wolfart 1973, MacKenzie et al. 2004) and Ojibwe (Valentine 2001). Denny 1978 discusses ***-ssi/ii*** as one of the key verbal affixes.

This is unexpected, given that the notion of 'think' is traiditionally considered stative (see , e.g., classification of Rothstein 2004 among many others). A second problem is that these suffixes cannot be isolated asuming that they only select intransitive roots. While a root like ***ksimsst*** cannot combine with attributive suffixes (90)-(91), it can combine with verbal intransitive suffixes (i.e., transitive suffixes that select for verbs), such as ***–aa***.

(92) Iksímsst**aa**wa
i-ksimsst-**aa**-wa
?-think-INT-3SG
'He thought.' F&R 1995:40

Thus, the suffixes listed in table 17 can be neither just attributive nor just intransitive. Therefore I suggest that the term **attributive intransitives** captures their function best.

Next I show that attributive intransitive suffixes that do not attach to √verbs, cannot combine with √nouns, either. This can be seen on the basis of the ungrammaticality of (93)-(94).

(93) a. *aakiiy**i**[43]
aakii -**i**
woman-**be**.**AN**
Intended: 'feminine'

b. *aakiiw**o**
aakii -**o**
woman-**be.IN**
'feminine'

[43] There is another suffix ***–i*** which can be affixed onto nominals. Unlike the attributive intransitive, it functions as a copular and derives the meaning 'be a woman' rather than 'be feminine'. In addition, the two suffixes also differ in their morphological properties. The copular ***–i*** is one of a kind: unlike the attributive intransitive ***–i,*** the copular ***-i*** does mark animacy:

suffix	animate form	inanimate form
copular 'be'	-i	-i
attributive intransitive	-i -ssi	-o -ii

Here us an example of the copular ***–i*** from the dictionary:

nitsíítsówaakiiyi
itsi-aakii-i
pretty-woman-be.INT
'I am a pretty woman.' F&R 1995:86

(94) a. *aakii**ssi**
aakii **-ssi**
woman - **be**.**AN**
Intended: 'feminine'

b. * aakiy**ii**
aakii **-ii**
woman- **be**.**IN**
'feminine'

Last but not least these suffixes exclude many √attributives. It is hard to accurately assess how many √attributive do not combine with these suffixes because it would require to test all√attributves. Suffice to say that I have tried at least fifty roots of different kinds (e.g., colour terms, physical properties, psychological qualities, and the like) from the Frantz & Russell (1995) dictionary, and all such forms were considered ungrammatical by the native speaker. Here is a sample of ungrammatical forms:

(95) a.*ikkahssi
ikkahs-ssi
funny-**be.AN**
Intended: 'funny'

b. *ikkahsii
ikkahs-ii
funny-**be.IN**
Intended: 'funny'

c. *maohkssi
maohk-ssi
red-**be.AN**
Intended: 'red'

d.*maohkii[44]
maohk-ii
red-**be.IN**
Intended: 'red'

e. *okssi
ok-ssi
bad-**be.AN**
Intended: 'bad'

f. *okii
ok-ii
bad **-be.IN**
Intended: 'bad'

[44] There is another construction for √attributives that denote color:
máóhksinááttsi
maohk-inaattsi
red-look like.IN
'be red' F&R 1995:96
However, one can not argue that this construction is specific to √attributives only. Roots of other categories are also found in this construction. For example, one can find nouns:
ohtookiinaattsi
ohtooki-inaattsi
ear-look like.IN
lit: 'appear like ears'
'dried apples' F&R 1995:116-117

So while these attributive suffixes do exclude √nouns and √verbs, they exclude many √attributives, too. Therefore I conclude that the distribution of what I call attributive suffixes does not tell us very much about the categorial properties of the roots it attaches to.

There is however, another, very productive construction that contains √attributives. These are entries with ***-a'pssi/a'pii.*** Unlike entries with ***-ssi/-ii***, entries with ***-a'pssi/a'p-ii*** are plentiful: around two hundred sixty are listed in the dictionary (Frantz & Russell, 1995). In addition, forms with ***-a'pssi/a'pii*** are the ones most often volunteered in fieldwork.

Frantz lists ***-a'pssi/a'pii*** 'be in a specified way' as verbs (Frantz & Russell, 1995:12). According to my diagnostics however, only roots that are selected by transitivity suffixes are √verbs. Crucially, the roots that combine with ***-a'pssi/a'pii*** do not combine with transitivity suffixes. Therefore I consider ***-a'pssi/a'pii*** light intransitive verbs. There are two reasons to set ***-a'pssi/a'pii*** apart. On the one hand, these light verbs do not contain √verbs. On the other hand, they do not select for one category of roots exclusively i.e., they are not attributives themselves, they form attributive intransitive predicates combining with roots of more than one category. I analyze ***-a'p-ssi/a'p-ii*** as complex yet frozen (like many Slavic constructions where a prefix is recognizible yet it cannot be separated from the root, cf. English *unkempt, *kempt*). I propose that it can be parsed such that ***–ssi/ii*** is analyzed as an independent attributive intransitive ***-ssi/ii*** 'be ' (which is no longer productive on its own). But why is ***a'p-*** needed**?** I propose that ***a'p***- is best analyzed as a placeholder for the root position [45]. ***A'p***- does not contribute to the meaning of the √attributive, it is used to make ***–ssi/ii***

[45] I hypothesize that this a a placeholder root because it shows up in attributive environments as well as other environments. For example, it can be used to mean 'about, around', as in the entry for 'journey':

a'póóhsin
a'p-oo-h-sin
around/about-move-?-NOMZ
'a journey' F&R 1995:12

into a light verb which can then be modified by other roots. The meaning of this light verb is semantically bleached, and it cannot form a predicate on its own:

(96) a. *a'pssi
a'p-ssi
about-be.AN
'be in a specific way'

b. *a'pii
a'p-ii
about- be.IN
'be in a specific way'

Once an √attributive is attached, a particular meaning is acquired and a grammatical predicate is formed as illustrated in (97).

(97) a. immak**á'pssi**
immak-**a'p-ssi**
rare-**about- be.AN**
'be rare'

b. immak**á'pii**
immak-**a'p-ii**
rare-**about- be.IN**
'be rare'

Schematically we can illustrate the resulting structure as in (98):

(98) a. [[√attributive] √**placeholder**] attributive intransitive suffix
b. [[√verbs] transitivity suffix]
c. [[√noun] number suffix]

Thus, in contrast to √nouns and √verbs, √attributives cannot combine with categorial suffixes directly and make use of what I call the placeholder root.

It may also surface when there is another root that is in some way deficient to occupy the root position. Here are some examples. In the verbal domain, ***istot*** means 'make, do'. It is a kind of light verb that is productively used to create complex predicates where the adjunct to the root defines a particular meaning (in Frantz & Russell 1995 dictionary, there are around 300 entries with this root and in elicitation our speaker produces entries not listed in the dictionary). For my consultant, it cannot stand alone and requires ***a'p*** when in its basic meaning 'make, do, build'.

(i) a. *Nitá'pistotaki*
nit-a'p-istot-aki
1SG-about-do/make- INT
'I made something.' F&R 1995:12

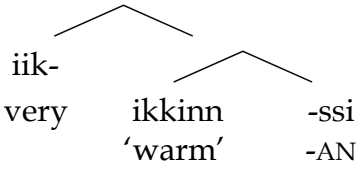
b.**Nitsistotaki*
nit-istot-aki
1SG-do/make- INT
'I made something.'

However, as long as there are other adjuncts to this root, ***a'p*** is no longer required:

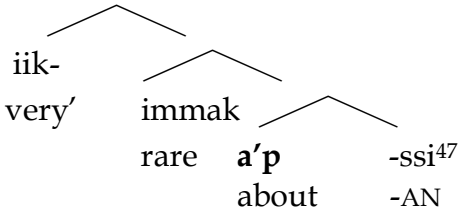
(ii) iikímmatsistotoyiiwa
i-ikimmat-istot-o-yiiwa
?-poor-do/make-TA-DIR. 3>3
'He impoverished her.' F&R 1995:30

So one can find two kinds of attributive predicates in Blackfoot: i) a root-predicative suffix complex (not productive); ii) a root–placeholder root-suffix complex (productive), illustrated below:

(99) a. iiksíkinnssi[46]
iik-ikinn-ssi
very-warm- be.AN
'warm'



b. iiksimmak**á'p**ssi
iik-immak -**a'p**-ssi
very-rare- about- be.AN
'rare'



The construction with the placeholder root is the preferred, productive means to form attributive predicates. But what are the syntactic reasons to prefer the second construction? Until proven wrong, I assume that the insertion of the placeholder root ***a'p*** places √attributives in the prefixal position. Therefore the right edge suffix does not

[46] The presence of ***iik-*** is often required in many attributive constructions (but it is also used with roots other than attributives as we will shortly see). I set aside the question of why the intensifier is needed when the translation does not reflect its presence. Frantz 1991:51, footnote 54 has a similar observation.

[47] I assume that ***a'p-*** combines with ***-ssi*** rather than with the √attributive itself. That is the rationale behind the analysis in (i) [immak –[a'p-ssi]] order rather than (ii) [[immak-a'p]-ssi]]. I recognize that given the data, one could argue either way unless some evidence could be found that would support one parsing over the other. My preference is supported by the following reasoning. If the √***attributive-a'p-*** morpheme string were formed independently of ***-ssi/ii***, one would find the said string elsewhere. This is not the case. Therefore I infer – for the lack of evidence to the contrary – that ***–a'p*** is morphosyntactically required due to ***-ssi/ii***.

attach to the √attributives directly because the placeholder root intervenes. And once we have a (placeholder) root-suffix complex, other roots can attach to the placeholder root as modifiers. This allows the attributive intransitive suffix ***–ssi/ii*** to combine with roots of more than one category. For example, ***–a'pssi/-a'pii*** may combine with √nouns as shown in (100):

(100) Anná Sam iikaakiá'pssi
anna Sam iik-aakii -a'p -ssi
DET Sam INTS-woman-about- be.AN
'Sam is feminine.'

Aakii 'woman' is a √noun (see appendix B for its pluralized form, which constitutes a nounhood test), which would not combine with ***-ssi/ii*** on its own:

(101) *Anna Sam iikaakissi
anna Sam iik-aakii -ssi
DET Sam INTS-woman-about- be.AN
Intended: 'Sam is feminine.'

On the basis of examples like these, I conclude that ***–a'pssi/a'pii*** does not select for √attributives, unlike ***-ssi/ii***.

Thus, although a handful of √attributives may be selected by the category-specific suffixes ***–ssi/ii,*** this strategy is not productive; while ***–a'pssi/a'pii*** does not affix exclusively onto √attributives and is productive. In other words, while ***–a'pssi/a'pii*** forms attributive-like predicates, the roots that it attaches toned not be be √attributive.

But are there any other tests that would uniquely identify √attributives in Blackfoot? Recall that the focus of the study is to establish category specific or category neutral behaviour of root type. sIf the affixal tests do not apply, one may wonder if there are any other means to isolate environments specific to √attributives. The definition of adjectives used at the beginning of this section listed degree modifiers as

typically associated with adjective class. For example, in English, comparative *–er*, and superlative *–est* uniquely identify adjectives as a category[48] :

(102) a. strong –strong***er***-strong***est***
b. *woman-women***er***-women***est***
c. *run-runn***er***-runn***est***

Only adjectives are picked out by comparative and superlative suffixes, while verbal and nominal roots are ungrammatical with these suffixes. This test works for English. If my hypothesis is on the right track and Blackfoot lacks the category adjective, then is plausible to expect that comparative forms of Blackfoot would not single out √attributives, either, given that gradability is one of the classic criteria to distinguish adjectives and adverbs from verbs and nouns (McNally & Kennedy 2008). This is the case: neither Blackfoot intensity nor degree modifiers c-select exclusively for √attributives. We have already seen the √noun ***aakii*** 'woman' in the construction with ***-a'pssi,*** with an intensifier ***iik*** 'very' in the example (100) above. The same is true of degree prefixes: they do not only select for √attributives in Blackfoot. If Blackfoot degree prefixes like ***otsítsk-*** 'beyond, past '(Uhlebeck 1938:67) were picking out only √attributives as in (103)a, the construction in (103)b would be unexpected:

(103) a. ***otsítsk***aahssi
otsitsk-yaahs-ssi
past-good-be.AN
's/he is better.' Uhlebeck 1938:67

b. Anna John ***otsítsk***aakiia'pssi
anna John ***otsitsk***-aakii-a'p-ssi
DET John past- woman-about/around-be.AN
'John is more feminine.'

Thus, we have evidence that neither ***–a'pssi*** nor the intensifier ***iik-*** nor the degree prefix ***otsítsk-*** 'beyond, past 'select for √attributives only. At best, one could say that the category of the selected root is undeterminable, but it is certainly not exclusively of one

[48] While not all adjectives combine with the comparative ***–er*** suffix, the crucial fact is that **no** verbs or nouns combine with it.

category √attributive. 'Attributive' is a function rather than a category, so it is not surprising that more than category can function attributively.

The affiliation with the √attributive class of roots can be described only negatively: roots that cannot combine with either verbal (transitivity) or nominal (plural) suffixes are √attributive. Therefore I conclude that attributives are the elsewhere case of the grammatical categories in Blackfoot.

2.4.3 √Attributives lack subcategories

As we have seen in 2.2 and 2.3, Blackfoot √verbs and √nouns can be selected by category-specific suffixes. These roots are selected based on their intrinsic categorial properties. In contrast, we have seen that √attributives are not exclusively selected by any productively used suffix. Therefore I propose that Blackfoot √attributives lack an intrinsic property which, I argue, amounts to the loss of categorial identity. Due to the lack of a selectable property, √attributives cannot surface in the root position and are found only in modifier positions, schematically illustrated in (104):

(104) **[√attributive]** √placeholder**]** attributive intransitive suffix
[(√**attributive]**) √**verbs]** transitivity suffix
[(√**attributive]**)√**noun]** number suffix

As discussed in 2.1.2, √attributives may attach as prefixes to either nominal or verbal hosts. That is, √attributives do not select for the category of the root they modify and they occupy a modifier position that is non-selectable by categorial suffixes. Moreover, √attributives are not sensitive to the subcategories associated with √nouns and √verbs. For example, the root ***ikkina*** ('soft, slow') can modify animate as well as inanimate √nouns (105).

(105) **Noun modifiers**

a. ikkinióhpokon**iks**
ikkina -oh-pokon-**iksi**
soft/slow-?-ball-**AN.PL**
'soft balls'

b. ikkinaí'ksisako**ists**
ikkina-i'ksisako-istsi
soft/slow-meat-**IN.PL**
'soft meats'

The same root can also modify √verbs, both transitive and intransitive (106).

(106) **Verb modifiers**

a. ikkináí'poy**i**t!
ikkina-i'po **-i**-t
soft/slow-speak- INT-IMPER
'speak slowly/clearly!'

b. ikkiníístots**i**t!
ikkina-istot-**i**-t
soft/slow-do-**TI**-IMPER
'soften it!'

F&R 1995:34

Thus, data like these further confirm that Blackfoot √attributives do not encode any selectable grammatical information relevant to the categorization of roots.

2.5 Absence of category neutral behaviour at the root level

Thus far, I have shown how one can identify the unique categorial affiliation of Blackfoot roots through language-specific tests. In this section, I focus on another aspect of this generalization: the absence of category-neutral behaviour. In other words, Blackfoot has no roots that can be used across three categories, such as English ***clear*** (107) or across two categories, such as English ***walk*** (108):

(107) a. The banker goes to sleep with a **clear** conscience. Adjective
b. The banker wants to **clear** his name. Verb
c. The fraud charges are dropped, and the banker is in the **clear**. Noun

(108) a. You can **talk** the **talk…** Verb/Noun
b. …but can you **walk** the **walk**? Verb/Noun

On many occasions, I have provided the Blackfoot consultant with numerous constructed examples where I tried to use over fifty different roots across two or three categories: all were turned down as ungrammatical.

For example, it would be plausible to expect that the same root may be found in both nominal and verbal domain, e.g.: 'land' – 'to land', 'water' – 'to water', 'gift' – 'give as a gift' and so on. The constructed examples were never accepted by the speaker. Consider for example the transitivity suffixes ***–at, -atoo, -aa*** with nominal roots like ***o'kapayin*** 'flour', ***api'si*** 'wolf', ***ohkii*** 'water', ***ksaahko*** 'land'[49].

(109) a. ó'kapayin ó'kapayinistsi
ó'k-napayin ó'k-napayinistsi
raw-bread raw-bread-AN.PL
'flour' 'flours' F&R 1995:119

b.*Anna Jane o'kapayin**at**siyi omi nitoaki
anna Jane o'kapayin-**at-**iyi omi nitoaki
DET Jane flour-TA- 3>4 DET chicken
Intended: 'Jane breaded the chicken.'
Context: cooking instructions

c. ómahkapi'si ómahkapi'siksi[50]
omahk-api'si omahk-api'si-iksi
great-wolf great wolf-AN.PL
'timber wolf' 'timber wolves' F&R 1995:124

d. *nitapi'si**atoo**'p oma napayin
nit – api'si **–atoo-**'p oma napayin
1SG -wolf **-TI-**1>3 DET bread
Intended: 'I wolfed that bread.'
Context: I was so hungry that I ate in a wolf-like manner

e. aohkíí sikáóhkiistsi
aohkíí sik-aohkii-istsi
water black-water-IN.PL
'water' 'vanilla' F&R 1995:9

f. *anna Sam aakohki**atoo**mayi omiksi miistsiks
anna Sam yaak-aohki-**atoo-**ma-yi om-iksi miistis-iksi
DET Sam FUT-water-TA-3>4 DET-AN.PL tree-AN.PL
Intended: 'Sam will water the trees.'

[49] √Nouns are discussed in 2.3, and appendix B contains √nouns used in this study.
[50] My consultant preferred ***api'si*** form without the preverb ***omahk***.

g. ksááhko ksááhkoistsi
ksááhko ksááhko-istsi
land land-IN.PL
'land' 'lands'

j. *Oma aipottaa ksaahk**aa**
oma a-ipottaa ksaahko-**aa**
DET IMP-fly- INT land- INT
Intended: 'The airplane landed.'

Moreover, constructions of this kind are not attested in the dictionary (Frantz & Russell, 1995). Given that this type of construction is found in many languages, including English (e.g., Clark & Clark 1979), it is significant that Blackfoot does not allow for it. Lastly, the comments of the native speaker also indirectly confirm the lack of such derivations. When asked to pass judgments on the constructed category-neutral examples, she often said: 'We just do not do it in Blackfoot.' Moreover, she often volunteered periphrastic constructions of some sort, where the constructed denominal verb was replaced either with an alternative verbal entry or a light verb construction, e.g. with ***istot-*** 'make' or ***ihka's*** 'behave'.

(110) a. Anna Sam áákotisksistoom ómiksi mistsíks
anna Sam yaak-otisk-ssi-stst-oo-mi
DET Sam FUT-maximum-wash-back.and.forth-TA-3:4

...om-iksi mistsis-iksi
DET-AN.PL tree-AN.PL
'Sam will water the trees.'

b. Oma áipottaa itópiaapikkssi ksaahkóm
oma a-ipott-aa it-opii-aapikkss-i ksaahko-m
DET IMP-fly- INT there-sit-?-INT land-?
'That airplane landed on the ground.'

c . iikapi'síhka`si
iik-api'si-ihka`s-i
INT-wolf-behave-INT
'She acted like a wolf.'

Crucially, in the periphrastic examples, the relevant transitive suffix does not combine with the √noun directly. Instead, the transitive suffix attaches to the light verb ***ihka's-*** 'behave', and the √noun attaches to the left of the √verb. Periphrastic constructions of this kind are also attested in the dictionary (Frantz & Russell, 1995):

(111) áttsáakiihka'siwa
mattsi–aakii-ihka's-i-wa
again -woman-behave-INT-3SG
'She acted like a whore.' F&R 1995:200

In sum, we observe that a verbal use of √nouns results in ungrammaticality; the same is true of √attributives**,** which, too, are ungrammatical if used verbally except when they appear in periphrastic constructions. For example in (112), ***–atoo***, ***-aki, -i*** are suffixed to ***iksikk*** 'clear, white', ***ikkina*** 'slow/soft', ***ipisat*** 'amazing' resulting in ungrammaticality.

(112) a. *nitsiiksikk**aki**
nit-ii-ksikk-**aki**
1SG-clear- **INT**
Intended: 'I cleaned.'

b. *nitsikkin**atoo**'p oma napayín
nit – ikkina **–atoo**-'p oma napayín
1SG –soft- **TI-**1>3 DET bread
Intended: 'I softened that bread.'
Context: dipping the bread in milk to make it softer

c. *nitsipisats**i**
nit-ipisat-**i**
1SG-amazing-be.INT
Intended: 'I was amazing.'

Periphrastic constructions with the same roots and with the same finals are possible, as long as there is a √verb (bolded) intervening between the final and the √attributive:

(113) a. nitsíkkininá**istot**sii'p óma napayín
nit – ikkina **–istot**-i-'p oma napayin
1SG –soft- make/do-**TI-**1>3 DET bread
'I softened that bread.' F&R 1995:34
Context: dipping the bread in milk to make it softer

b. nitsííksikká'p**istot**aki
nit-ii-ksikk-a'p-**istot**-aki
1SG-?-white-around -do/make- INT
'I cleaned.'

F&R 1995:39

c. nitsíípisáts**ka's**i
nit-ii-pisat-**ihka's**-i
1SG-?-amazing-behave-INT F&R 1995:61
'I performed.'

Note that this differs from the patterns we observe in another Algonquian language, namely East Cree. Here √attributives can be used transitively as illustrated in (114):

(114) a. waap-aa-u
white-stative.II-3
'It is white.'

b. waap-isi-u
white-stativeAI-3
'She is white.'

East Cree

c. waap-ih-aa-u
white-trans.TA-dir-3
'She whitens it.'

d. waap-iht-aa-u
white-trans.AI- dir-3
'She makes it white'

MacKenzie et al 2004[51]

In (a) and (b) we se ***waap*** 'white' with stative suffixes which are the equivalent of the Blackfoot attributive intransitive suffixes. In (c) and (d), the same root ***waap*** is suffixed with transitivity suffixes, which is ungrammatical in Blackfoot. Moreover, a search in the online Cree dictionary (MacKenzie et al 2004) shows that the transitive use of attributives is productive.

√Attributives can also be used transitively in Plains Cree as illustrated in the examples below.

(115) a. [sêk-***isi***]-w
scare-STAT-0
's/he is scared'

Plains Cree

b. [sêk -***ipayi***]-w
scare-INCH-0
'she gets scared (suddenly)'

[51] Gloss courtesy of Dr. J. Brittain.

c. [sêk-***ih***]-ê(-w)
cold-by.hand-A.TH-3
's/he scares her/him.' Hirose 2000:33

We see ***sêk*** 'scare' as an equivalent of Blackfoot's attributive intransitive in (a), and then with transtivitiy suffixes in (b)-(c).

This difference between Blackfoot and Cree demonstrates that the use of roots across categories may differ within languages of the same language family. The contrast is particularly curious because neither Blackfoot (section 2.1.2) nor Cree roots (Hirose 2000) can occur bare yet their patterns of categorization differ. Blackfoot suffixes select, while Cree suffixes may derive: transitivity suffixes can be used with attributive roots to derive verbs. I take this to mean that the differences lie not only in the suffixes but also in the roots themselves. It maybe that Cree roots do not contain any category intrinsic properties. Thus, the perceived bareness of roots may or may not conceal categorial features.

The curious fact, however, is that category neutral behavior is also attested in Blackfoot, but only beyond the root level, i.e. when the root has been combined with affixes. For example, Uhlenbeck (1938:12) observes that any verb can be used as a noun. This can be seen on basis of the example in (116). The complex noun denotes a profession, which is often expressed using a pseudo-intransitive stem constructed with the suffix ***–aki***:

(116) a. áísokinaki
a-i-sok-in-aki-ø
IMP-?-good-by hand- INT-NOMZ
'doctor'

b. áísokinakiiksi
a-i-sok-in-aki- ø-iksi
IMP-?-good-by hand- INT-NOMZ-AN.PL
'doctors' F&R 1995:112

The form retains not only the intransitive suffix, but also an imperfective prefix ***-a***. We can see that the form is nominal since it can take on the nominal plural marker ***-iksi***. Since there is no overt nominalizer, I assume that there must be an underlying zero nominalizer, because we have seen in 2.3.1.1 that plural suffixes do not derive nominals on their own.

Sometimes a deverbal noun formed with ***–aki*** can also be modified by a nominal suffix ***-ikoan*** 'young being'. For my consultant, the use of the suffix in the forms of (117) is optional:

(117) a. iyinnaki(ikoan)
i-yinn-aki-ø-ikoan
?-seize by hand- INT-NOMZ-young being
'policeman'

b. iyínnaki(ikoa)iksi [52]
i-yinn-aki-ø-ikoan-iksi
?-seize by hand- INT-NOMZ-young being
'policemen' F&R 1995: 88

c. *iyinnikoan
i-yinn-ikoan
?-seize by hand-young being
'policeman'

d. imitaa-ikoan
imitaa-ikoan
dog-young being being
'puppy'

As is obvious from this example, the verbal stem ***iyinnaki*** does not contain any overt nominalizer. However, both the nominal plural suffix and the modifier of nominals can be affixed to the verb stem (root plus transitivity suffixes). To affix ***-ikoan*** directly on the √verb is ungrammatical (117)c, while to affix it on the nouns is possible (117)d. I take this to mean that ***-ikoan*** selects for nouns. Therefore I conclude that ***iyinnaki*** has been nominalized already, i.e., it contains an underlying nominalizer that ***-ikoan*** selects for. The behaviour of ***-ikoan*** is in line with root modifiers such as prefixal attributives: they modify roots but do not change the category.

The issue is more complicated with suffixal root modifiers (medials in Algonquian terms, see section 2.1.2 for a brief discussion). For example, Frantz (1995:30)

[52] Deletion of ***n*** (and nasals in general) is common in Blackfoot, both at the beginning of a word and between morphemes.

lists ***-ikim*** 'liquid/water' as a medial suffix. Yet it appears to form a noun on its own, taking on plural inflection which has been used as a criterion for nounhood:

(118) a. siksikimííystsi
sik-ikim-i-istsi
black-liquid-?-IN.PL
'types of tea'

b. ómahksikimistsi
omahk-ikim-i-istsi
great-liquid-?- IN.PL
'lakes' F&R 1995:104;163

It remains to be seen how these stems are formed, and whether the categorial identity of (some) medials is unique.

In sum, Blackfoot roots do not display category-neutral behaviour while stems do. Thus, Blackfoot differs from both English (Germanic) and Cree (Algonquian), where (at least some) roots may be used across categories.

2.6 Conclusions and further questions

The central goal of this chapter was to explore the categorial identity of Blackfoot roots. I have developed several language-internal diagnostics that reveal the categorial identity of Blackfoot roots. The core diagnostics have involved selectional restrictions associated with affixes that combine with roots. I have shown that particular suffixes select for particular roots, to the exclusion of other roots.

These distributional properties indicate that Blackfoot roots are either intrinsically √nouns or intrinsically √verbs. The elsewhere category, i.e., roots that are neither √verbs nor √nouns, function as modifiers. Since there is no evidence of zero derivation between categories at the root level I conclude that each Blackfoot root is uniquely associated with a unique category. This is schematized in (117).

(119) a. √ = {n} or b. √ = {v} or c. √ = { }

Interestingly however, category-neutral behaviour is possible in Blackfoot, but only beyond the root level, namely at the level of the stem.

The properties intrinsic to roots (or the lack of such properties) determine which roots fall within the domain of which grammatical category. This is summarized in table 18 below.

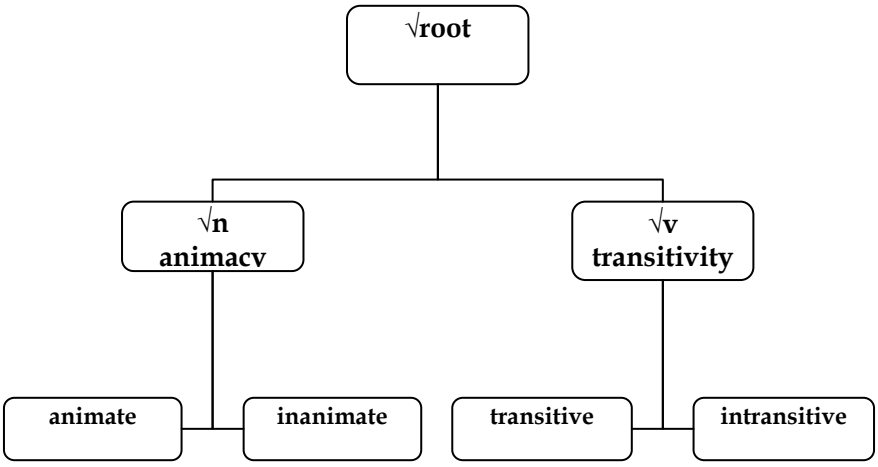
Table 18. Blackfoot: properties intrinsic to categories

	Category n	**Category v**	**Category a** (elsewhere case)
root feature	animacy	transitivity	--

Specifically, I propose that nounhood in Blackfoot is determined by animacy, and verbhood by transitivity. √Attributives lack an intrinsic property and therefore are not selectable by categorial suffixes, hence they form what I call an elsewhere class[53]. Schematically, Blackfoot categories can be represented as follows:

[53] The question to be answered in future research is what exactly it means to designate a category as the "elsewhere" category, and what the implications are of being an elsewhere category.

(120)



Thus, Blackfoot has two syntactically identifiable lexical categories: nouns and verbs. √Nouns encode animacy and split into animate and inanimate sub-categories. √Verbs encode transitivity and are further subdivided into transitive or pseudo-transitive sub-categories. The √attributives are the bare roots, without intrinsic properties, and as such are not selectable, i.e. constitute the "elsewere" case of lexical categories

The findings in Blackfoot raise further questions: Are roots categorized in a similar manner across languages? Can roots be associated with particular properties across languages? Are the same intrinsic properties universally available? To that end, in the next chapter I explore the patterns of categorization of roots in Lithuanian (Baltic), a language unrelated to Blackfoot either typologically or genetically.

Chapter 3 Lithuanian roots and ROOTS

In chapter 2, I have shown that Blackfoot roots are all categorized. This is a surprising result in light of recent assumptions regarding the nature of roots. That is, based on languages like English, where many roots can be used as nouns, verbs, or adjectives, it has been argued that roots are intrinsically without category (Marantz 1997). The behaviour of Blackfoot roots suggests that not all languages make use of category-neutral roots and consequently, the category-neutrality of roots cannot be considered a language universal. This raises the question as to whether we are dealing with a parameter. In other words, does the choice between categorized and category-neutral roots have consequences for all roots within a given language? Judging from Blackfoot, the answer may appear to be positive, since all Blackfoot roots are indeed categorized.

In this chapter I investigate the categorial properties of roots in Lithuanian (Baltic). I first show that Lithuanian has categorized as well as category-neutral roots (3.1). Then I argue that Lithuanian categorized roots are uniquely associated with a category particular property: √verbs are categorized based on transitivity, √nouns are categorized based on gender, and √adjectives are categorized based on degree (3.2). Crucially, category-neutral roots can be associated with all three categorial properties: transitivity, gender and degree (3.3). Finally, I close the chapter by comparing Lithuanian roots with Blackfoot roots. I conclude that they differ in three ways (3.4):

i) All Blackfoot roots are categorized whereas Lithuanian has both categorized and category-neutral roots;
ii) Blackfoot √nouns are categorized based on animacy whereas Lithuanian √nouns are categorized based on gender;
iii) Blackfoot lacks a dedicated category √adjective whereas in Lithuanian √adjectives are categorized based on degree.

I end the chapter with the questions that arise in light ofthe similarities and differences between Lithuanian and Blackfoot roots.

3.1 Categorized versus category-neutral roots

In this section, I show that in Lithuanian some roots are categorized (3.1.1) while others are category-neutral (3.1.2).

3.1.1 Categorized Lithuanian roots

Categorized roots are intrinsically of one category: verb, noun or adjective. That is, any particular root of that set can only combine with the inflection specific to that category. Overt derivation is required for the use of these roots in categories other than their intrinsic category.

Consider for example, the root ***auk***- 'sacrifice' in (1). It may combine with nominal inflection (feminine, nominative, singular marking); but it may not combine with verbal (b) or adjectival (c) inflection.

(1) a. auka — Nominal use
auk-a
sacrifice-FEM.NOM.SG
'a sacrifice, a victim'

b. *aukti — Verbal use
auk-ti
sacrifice-INF
Intended: 'to be a victim/sacrifice'

c. *aukus, auki — Adjectival use
auk-us auk-i
sacrifice-MASC.NOM.SG sacrifice -FEM.NOM.SG
Intended:'victim-like, of victim qualities'

This shows that if a root is intrinsically categorized, one cannot add inflectional suffixes of other categories. It is, however, possible to use ***auk***- 'sacrifice' both verbally and adjectivally if the appropriate derivational suffixes are present.

(2) a. auk**o**ti — Verbal use
auk-**o**-ti
sacrifice -SUF -INF
'to sacrifice'

b. (**pasi)**auk**ojant**is — Adjectival use
pa -si-auk-**o-jant**-is
PREF-REFL-sacrifice- SUF –SUF-MASC.NOM.SG
'self-sacrificing'

From data like this, I conclude that if a root is categorized for one category, its use as a root of some other category is prohibited. Instead an intrinsically categorized root must be re-categorized by means of an overt suffix. In table 19, I provide more examples of categorized roots. Roots of the intrinsic, underived category can be identified as lacking any affixes. These roots are then recategorized with the help of derivational morphology (bolded). So there is a clear distinction between underived and derived entries.

Table 19. Lithuanian categorized roots: a sample

√**noun**	√**verb**	√**adjective**
	intrinsic category: verb	
griaus-**m**-as thunder- SUF_N- MASC.NOM.SG 'thunder'	griaus-ti thunder-INF 'to thunder'	griaus-**m-ing**-as/-a thunder- SUF_N -SUF_A-MASC.NOM.SG/ FEM.NOM.SG 'thundering'
pirk-**l**-ys buy- SUF_N- MASC.NOM.SG 'a merchant'	pirk-ti buy- INF 'to buy'	pirk-**l-in**-is/-ė buy- SUF_N- SUF_A-MASC.NOM.SG/ FEM.NOM.SG 'of a merchant'
v**a**ž-is transport-- MASC.NOM.SG 'a carriage'	v**e**ž-ti transport- INF 'to transport'	v**a**ž-us/-i[54] transport-MASC.NOM.SG 'of great transporting quality'
intrinsic category: noun		
auk-a sacrifice- FEM.NOM.SG 'a sacrifice, victim'	auk-**o**-ti sacrifice- SUF_V - INF 'to sacrifice'	**pa-si-**auk-**o-jant-**is/-i PREF-REFL-sacrifice- SUF_V – SUF_A-MASC.NOM.SG /FEM.NOM.SG 'self-sacrificing'
dien-a day- FEM.NOM.SG 'a day'	dien-**o**-ti day- SUF_V -INF 'to dawn'	dien-**in**-is/-ė day- SUF_A -MASC.NOM.SG /FEM.NOM.SG 'of day/daily'
veln-ias devil- MASC.NOM.SG 'a devil'	veln-**iuo**-ti-**s** devil-SUF_V –INF- REFL 'to curse'	veln-**išk**-as/-a devil—SUF_A- MASC.NOM.SG /FEM.NOM.SG 'devilish'
uog-a berry- FEM.NOM.SG 'a berry'	uog-**au**-ti berry- SUF_V -INF 'to gather berries'	uog-**ing**-as/-a berry- SUF_A -MASC.NOM.SG /FEM.NOM.SG 'abounding in berries'
		intrinsic category: adjective
arš-**um**-as feisty-SUF_N - MASC.NOM.SG 'feistiness'	arš- **ė**-ti feisty- SUF_V -INF 'to turn feisty'	arš-us/-i feisty--MASC.NOM.SG /FEM.NOM.SG 'feisty'
gr**o**ž-is pretty- MASC.NOM.SG 'beauty'	graž-**ė**-ti pretty- SUF_V –INF 'to turn pretty'	graž-us/-i pretty-MASC.NOM.SG /FEM.NOM.SG 'pretty'
trap-**uol**-is pretty- SUF_N - MASC.NOM.SG 'a frail person'	trap-**ė**-ti pretty- SUF_V –INF 'to become fragile'	trap-us/-i fragile-MASC.NOM.SG /FEM.NOM.SG 'fragile'

[54] This is a case of derivation by change of the quality in the root vowel.

Categorized roots predominate in the Lithuanian root stock (I looked at 600 roots). At this point of research, I do not have the exact numbers of ROOTS.

3.1.2 Category-neutral Lithuanian ROOTS

As shown in table 20, there are some Lithuanian roots which can be affixed with the inflections of all three categories – (√noun, √verb or √adjective) without any overt derivational morphology.

Table 20. Lithuanian category-neutral ROOTS: a sample

Noun	Verb	Adjective
alk-is hunger-MASC.NOM.SG 'a hunger'	alk-ti hunger-INF 'to hunger'	alk -us/ -i hunger- MASC.NOM.SG/FEM.NOM.SG 'gets hungry fast and often'
bėg-is run -MASC.NOM.SG 'a run'	bėg-ti run-INF 'to run'	bėg-us/-i run- MASC.NOM.SG/ FEM.NOM.SG 'fast'
grob-is loot -MASC.NOM.SG 'a loot'	grob-ti loot- INF 'to loot'	grob-us/-i loot -MASC.NOM.SG/FEM.NOM.SG 'prone to loot'
kvėp-as breath - MASC.NOM.SG 'smell'	kvėp-ti breath- INF 'to inhale'	kvėp-us, kvėp-i breath- MASC.NOM.SG/ FEM.NOM.SG 'hard breathing'
link-is bend- MASC.NOM.SG 'a fold, curve'	link-ti bend- INF 'to bend'	link-as/-a bend- MASC.NOM.SG/ FEM.NOM.SG 'bent, crooked'
ruoš-a prepare-FEM.NOM.SG 'a preparation'	ruoš-ti prepare-INF 'to prepare'	ruoš-us/-i prepare- MASC.NOM.SG/ FEM.NOM.SG 'diligent'
sen-is/-ė old- MASC.NOM.SG/ FEM.NOM.SG 'an old man/woman'	sen-ti old- INF 'to age'	sen-as/-a old- MASC.NOM.SG/ FEM.NOM.SG 'old'
šiurp-as/-a shiver- MASC.NOM.SG/ FEM.NOM.SG 'shivers, horror'	šiurp-ti shiver- INF 'to shiver'	šiurp-us/-i shiver- MASC.NOM.SG/ FEM.NOM.SG 'scary'
šok-is jump- MASC.NOM.SG 'dance'	šok-ti jump- INF 'to jump, dance'	šok-us /-i jump-MASC.NOM.SG/ FEM.NOM.SG 'jumpy'
veik-a veik- FEM.NOM.SG 'acting, activity'	veik-ti veik-INF 'to act'	veik-us/-i veik-MASC.NOM.SG/ FEM.NOM.SG 'effective'

If this type of behaviour is indicative of category-neutrality, we can conclude that these ROOTS are not intrinsically associated with categorial information. Thus, there appears to be a significant difference between two types of roots in Lithuanian: those that are category-neutral and those that are categorized and therefore cannot be used across different categories without derivational morphology.

3.1.3 Summary. Comparison with Blackfoot

I have shown that Lithuanian roots are of two types: i) categorized and ii) category-neutral. Categorized roots have an inherent category, and the other categories are derived by means of derivational affixes. Category-neutral ROOTS can be used across all categories without any derivational suffixes.

The existence of Lithuanian categorized roots is in line with Blackfoot facts observed in chapter 2. The difference between the two languages lies in the fact that ***all*** Blackfoot roots are categorized while this is not the case in Lithuanian, where only some roots are categorized. Conversly, category-neutral ROOTS are not attested in Blackfoot but are in Lithuanian. This is summarized in table 21.

Table 21. Lithuanian versus Blackfoot: contrast in root types

root type	Lithuanian	Blackfoot
categorized	✓	✓
category-neutral	✓	×

Thus, Lithuanian and Blackfoot contrast in root types. Assuming that cross-linguistic differences indicate different organization of grammars the presence of ROOTS in Lithuanian needs an explanation. As shown in 3.1.1, Lithuanian inflectional suffixes are not used for derivation.

In what follows I apply category-specific tests to both Lithuanian roots and ROOTS.

3.2 The properties of Lithuanian categorized roots

In this section I investigate the patterns of categorization of Lithuanian roots. Based on the patterns of categorization associated with Blackfoot roots, we might expect that in Lithuanian roots are also categorized based on some intrinsic property. I will

show that Lithuanian √verbs are categorized based on transitivity, just like Blackfoot √verbs (section 3.2.1). Lithuanian √nouns however are not categorized based on animacy but instead based on gender (section 3.2.2). Finally, we will see that Lithuanian does have a third category, namely √adjectives, which can be identified based on degree (section 3.2.3). This differs from Blackfoot where we could not find evidence for a dedicated categorization pattern associated with adjectives. Instead the third class of roots was analyzed as the elsewhere category.

3.2.1 Lithuanian √verbs

In this section I explore Lithuanian √verbs. I first show that √verbs are categorized based on transitivity. Next, I show that certain affixes select exclusively for category verb, whether v or √v.

3.2.1.1 √verbs are categorized based on transitivity

The most noticeable characteristic of Lithuanian √verbs is that they can be used in finite as well as non-finite forms (Ambrazas 1997:220, 223). This property is obvious because the finite/non-finite split is marked by a set of inflections, bolded in the examples in (3). Non-finite verbs include participles and infinitives; finite forms are marked for person, number, tense and mood. Infinitives do not contain any agreement information.

(3)

Non-finite		**Finite**
staug**ti**	staug**ęs**	staug**i**
staug-**ti**	staug-**ęs**	staug-**i**
wail-INF	wail-MASC.PAST.PARTC.	wail-PRES.2SG
'to wail'	'having wailed'	'you wail/are wailing'

Crucially, all √verbs can be used in their finite and non-finite forms. However, while tense affixes select for √verbs, they do not derive verbs (see 3.2.1.2). So being inflected

for tense is a property of verbhood, but no particular tense is intrinsic to √verbs and therefore cannot be viewed as the intrinsic property of the category. In that sense, temporal marking is akin to nominal number and case marking: both are properties of nouns, but are not intrinsic to √nouns (as shown in 3.3.1.1). These observations are trivial under the traditional view of lexical categories as being intrinsic to roots (cf. Hockett 1958), but they are relevant for the discussion on the role of the functional context in the discussion of ROOTS (cf. Marantz 1997).

I argue that transitivity is the intrinsic property of √verbs in Lithuanian. It is part of the lexcical entry of the √verbs as it is unpredictable and independent of context (under the assumptions that the predictable and context dependent properties such as, e.g., nominal number or verbal tense, are part of the grammar rather than part of a root). Like in Blackfoot, Lithuanian √verbs fall into three classes:

i) transitive: verbs that are only used as transitive
ii) intransitive: verbs that are only used as intransitive
iii) labile: verbs that can be used as transitive or intransitive

However, unlike in Blackfoot, in Lithuanian transitivity is not overtly marked. Moreover, given that Blackfoot is a pro-drop language, full DP's are generally optional for well-formedness but the number of arguments a verb takes can nevertheless be determined based on the verbal affixes (see section 2.1.2). Lithuanian is only partially pro-drop: only the subject may remain silent. I assume that pro-drop is licensed via rich inflection (cf. Rizzi 1982):

(4) a. Miegu.	b. Miegi.	c. Miegame.
mieg-u	mieg-i	mieg-ame
sleep-1SG.PRES	sleep-2SG.PRES	sleep-1PL.PRES
'I sleep.'	'You sleep.'	'We sleep.'

My focus here is the verb-object relation, and this cannot be deduced from verbal morphology in Lithuanian. One can only tell if a verb has arguments on the basis of the syntactic behaviour of that verb. Transitive verbs are ungrammatical without an object as shown in (5) while intransitive verbs are ungrammatical with an object, as shown in

(6). And, finally, the object is optional with labile or concealed transitive verbs (in the sense of Hale and Keyser 2002), as illustrated in (7)-(8):

(5) **Transitive**

a. Ona muša ožką.
On-a muš-a ožk-ą
Ann-FEM.NOM.SG hit-PRES.3SG goat-FEM.ACC.SG
'Ann hits the goat.'

b. *Ona muša.
On-a muš-a
Ann-NOM.SG.FEM hit-PRES.3SG
Intended: 'Ann hits.'

(6) **Intransitive**

a. Žvakė dega.
žvak-ė deg-a
candle-FEM.NOM.SG burn-PRES.3SG
'The candle burns.'

b. * Žvakė dega popierių.
žvak-ė deg-a popier-ių
candle-FEM.NOM.SG burn-PRES.3SG paper-MASC.ACC.SG
Intended: 'The candle burns paper.'

(7) a. Senis dar mato gerai. **Intransitive use**
sen-is dar mat-o gerai
old.man-MASC.NOM.SG yet see-PRES.3SG well
'The old man sees well yet.'

b. Ona sapnuoja.
Ann-a sapnuoj-a
Ann- FEM.NOM.SG dream- PRES.3SG
'Ann dreams.'

(8) a. Matau mišką. **Transitive use**
mat-au mišk-ą
see- PRES.1SG forest-MASC.ACC.SG
'I see a forest.'

b. Ona sapnuoja debesis.
Ann -a sapnuoj-a debes-is
Ann- FEM.NOM.SG dream- PRES.3SG cloud–MASC.ACC.PL
'Ann dreams of clouds.'

Note that Lithuanian concealed transitives are unlike Blackfoot pseudo-intransitives: their objects are optional, yet they are the same as the objects of genuine transitives. Based on data like these, I conclude that transitivity is the property based on which √verbs are categorized. There is no overt affix that would indicate which transitivity class a √verb belongs to. Inflections encode only the tense, person and number of the subject. In addition, given the ungrammatical examples in (5)-(6), we know that the same √verb can only be used as either transitive or intransitive, except in the cases where the √verb is labile. Therefore I conclude that transitivity is encoded in the √verb.

3.2.1.2 All and only √verbs are selected by temporal suffixes

I use temporal suffixes to identify √verbs. Of course, verbal stems may be selected too, i.e., the temporal suffixes select for category verb which includes both roots and stems. Recall that I defined roots as simplex sound-meaning correspondences, which allows me to distinguish √verbs from verbal stems since the latter are not simplex. I have also shown that Lithuanian category-specific suffixes cannot derive (in 3.1) – and below I go over some examples which show that temporal morphology is not derivational either. Thus temporal morphology still allows me to identify verbs as a category, and I can distinguish √verbs from verbal stems due to their simplex form.[55]

[55] Based on the fact that temporal suffixes also attach to vebal stems, one could argue that that temporal morphology does not uniquely identify only √verbs. This is true. However, temporal suffixes select only for verbs and do not derive verbs. Since I can isolate roots, temporal morphology helps identify the relevant category, namely, √verbs.

Of the available temporal morphemes, I chose the past frequentative morpheme ***–dav-,*** which can be used to diagnose Lithuanian √verbs[56]. As schematized in (9), this suffix selects for verbal roots and excludes roots of other categories.

(9) a. *√n -dav$_{FreqP}$ b. √v -dav$_{FreqP}$ c. *√a -dav$_{FreqP}$

Affixed to √verbs, it adds a past frequentative interpretation:

(10) Ona pirkdavo duoną.
On-a pirk-dav-o duon-ą
Ann-FEM.NOM.SG buy-FREQ.P-3SG bread- FEM.ACC.SG
'Ann used to buy bread.'

The suffix is ungrammatical with √nouns, as shown below:

(11) *uog**dav**au
uog-**dav**-au
berry- FREQ.P-1SG
Intended: 'I used to gather berries'

This provides evidence that the past frequentative morpheme does not itself serve to categorize roots: it selects for verbs, but does not derive them. Consequently, if a √noun is suffixed with a derivational suffix deriving verbs (underlined), the frequentative suffix is possible, as shown in (12):

(12) uog<u>au</u>**dav**au
uog -au-**dav**-au
berry- SUF$_V$ -FREQ.P-1SG
'I used to gather berries'

Similarly, the frequentative suffix is ungrammatical with √adjectives, as shown in (13):

[56] I chose this particular suffix because of its distinctive form. Some tense affixes are similar to verbalizers and are therefore not always easy to tease apart. The suffix is listed as tense (Ambrazas et al.1997), even though morphemes that encode frequency of events are commonly listed as aspectual (see for example Verkuyl et al. 2005).

(13) *Moterys gražd**av**o nuo kumelių pieno.
moter-ys graž **-dav-**o nuo kumel-ių
woman- FEM.NOM.PL beautiful-FREQ.P-3PL from mare- FEM.GEN.PL

…pien-o
milk-MASC.GEN.SG
Intended: 'Women used to get beautiful due to mare's milk.'

Again, if the √adjective is suffixed with a derivational suffix deriving verbs (underlined), the frequentative suffix becomes grammatical, as shown in (14):

(14) Moterys gražė**dav**o nuo kumelių pieno.
moter-ys graž-ė **-dav-**o
woman-FEM.NOM.PL beautiful-SUF$_V$-FREQ.P-3PL

...nuo kumel-ių pien-o
from mare-FEM.GEN.PL milk-MASC.GEN.SG
'Women used to get beautiful due to mare's milk.'

Thus, we can use the frequentative suffix to identify Lithuanian √verbs as summed up in table 22:

Table 22. Selectional restrictions on Lithuanian √verbs

Suffix	√noun	√verb	√adjective
-dav- Frequentative	×	✓	×

3.2.1.3 A note on Lithuanian causatives

Recall that in Blackfoot, transitivity suffixes diagnose √verbs. Crucially, this test relied on the fact that Blackfoot transitivity suffixes are only *agreeing*, and when they are *deriving* it is only within the category verb (i.e., they derive transitives from intransitives or intransitives from transitives, etc.). This is not the case in Lithuanian. Here, some transitivity suffixes may be used to derive verbs from other categories. The causative suffix will suffice to illustrate the pattern. The Lithuanian causative suffix ***–(d)in-, -(d)y-*** affixes onto roots of ***all*** categories and derives transitive verbs. This is

illustrated by the examples in (15)-(17). In (15) the causative attaches to a verb; in (16), the causative suffix combines with a noun; and in (17) it combines with an adjective. Irrespective of the category of the root it combines with, the causative suffix always derives a causative transitive verb.

(15) a. vežti
vež-ti
transport- INF
'to transport'

b. vež**in**ti √**verb**→ causative verb
vež-**in**-ti
transport- CAUS- INF
'to bring by transporting'

(16) a. diena
dien-a
day-FEM .NOM.SG
'a day'

b. dien**in**ti √**noun**→ causative verb
dien-**in**-ti
day- CAUS-INF
'to make to become day(time)'

(17) a. aštrus
aštr-us
sharp- MASC.NOM.SG
'sharp'

b. aštr**in**ti √**adjective**→ causative verb
aštr-**in**-ti
sharp-CAUS-INF
'to sharpen'

The grammaticality of the derivations would be unexpected, if the causative suffix were selecting for √verbs only. This establishes that transitivity suffixes are different in the two languages: Blackfoot causatives *select* only for verbs while Lithuanian causatives *derive* verbs. Based on the examples in (15), we can conclude that Lithuanian causative ***–in*** is neutral with respect to the category it selects. Therefore transitivity suffixes cannot be used to set apart √verbs in Lithuanian. This is not really a surprising result. Morphosyntactic tests may vary across languages due to distinct properties of the functional morphemes.

3.2.2 Lithuanian √nouns

In this section I discuss Lithuanian √nouns. In particular, I argue that gender is the feature based on which √nouns are categorized in this language. That is, with the exception of a few well-defined nouns, all Lithuanian nouns are categorized based on gender (3.2.2.1). I then show that there exist affixes that select for category nouns whether √nouns or nouns (3.2.2.2).

3.2.2.1 The intrinsic property of √nouns: gender

I argue that gender sets apart √nouns in Lithuanian. Consider the examples in (18).

(18) a. audr-**a**
storm-FEM.NOM.SG
'storm'

b. *audr
storm
intended: 'storm'

Here, the inflectional suffix ***–a*** simultaneously encodes gender, case and number. Although all nouns are always marked for these three features by means of a portmanteau morpheme, I argue that gender is the property intrinsic to √nouns. As such Gender is akin to animacy associated with Blackfoot √nouns. Case and number marking depend on the syntactic context of a noun.

Inflection for case is a property of nouns, but the marking of a particular case is governed by verbs or prepositions. This means that these features are not intrinsically associated with a given √noun. For example, the transitive use of a verb requires an object. Direct objects are typically marked for accusative case (Fillmore 1968, see also Butt 2006, Müller 2008 for a recent detailed discussion on case-grammatical role correlations).

(19) Jonas geria vyn**ą**.
Jon –as ger -ia vyn-**ą**
John-MASC.NOM.SG drink-PRES-3SG wine-MASC.ACC.SG
'John drinks wine.'

Even when the object is not marked for accusative case, the choice of case still depends on the verb. Some verbs, such as ***norėti*** 'want', require their object to be in genitive case:

(20) Jonas nori vyn**o**.
Jon-as nor -i vyn -**o**
John-MASC.NOM.SG want-PRES-3SG wine-MASC.GEN.SG
'John wants wine.'

While the possibility for case marking is a property of √nouns, √nouns cannot be subcategorized on the basis of case. Rather the choice of case - nominative, accusative, genitive - depends on the immediate syntactic environment (i.e., the governing verb or preposition). Case marking is thus used to encode the grammatical ***relation*** that nouns bear to other categories (verbs and prepositions). In other words, case is not an intrinsic property of √nouns.

Similarly, the possibility for number marking is a distinguishing property of √nouns, but again, √nouns cannot be subcategorized on the basis of number. Rather, the value of number (plural or singular) depends on the context (with a few exceptions like *pluralia tantum*, e.g. ***kelnės*** 'pants', which can only be used in plural). For example, if a speaker sees one apple on the table, the situation is described using the singular form, as in (21).

(21) Jonas mato obuolį.
Jon-as mat-o obuol-į
John-MASC.NOM.SG see-PRES-3SG apple-MASC.ACC.SG
'John sees an apple.'

In contrast, ***obuol*** 'apple' is marked for plural, if there are three apples on the table, as in (22).

(22) Jonas mato tris obuolius.
Jon-as mat-o tr-is obuol-ius
John-MASC.NOM.SG see-PRES-3SG three-ACC.PL apple-MASC.ACC.PL
'John sees three apples.'

Thus, number marking is a characteristic of a √noun, but it is not intrinsic to it.

In contrast to case and number marking, the value for gender is intrinsically associated with each √noun. Consequently, gender assignment is independent of the context in which the √noun is found[57].

Lithuanian gender comes in three guises: feminine, masculine, and common (Ambrazas et al. 1997:96-101).

(23) **Sample of feminine gender nouns**

a. audra	b. sesuo	c. kėdė
audr-a	ses-uo	kėd-ė
storm-FEM.NOM.SG	sister-FEM.NOM.SG	chair-FEM.NOM.SG
'a storm'	'a sister'	'a chair'

(24) **Sample of masculine gender nouns**

a. debesis	b. šuo	c. dėdė
debes-is	š-uo	dėd-ė
cloud- MASC.NOM.SG	dog- MASC.NOM.SG	uncle- MASC.NOM.SG
'a cloud'	'a dog'	'an uncle'

(25) **Sample of common gender nouns**

a. vėpla	b. dabita	c. nevėkšla
vėpl-a	dabit-a	nevėkšl-a
gawk-COM.NOM.SG	dandy-COM.NOM.SG	klutz-COM.NOM.SG
'a gawker'	'a dandy'	'a klutz'

The three gender values have characteristic endings, i.e. ***-ė*** is usually feminine (as in (23) c), but there are some nouns of masculine gender that end in ***–ė,*** like ***dėdė*** 'uncle'(as in

[57] Gender, case and number are also utilized with demonstratives, adjectives and some types of participles, but in these cases gender is not intrinsic and depends on the noun with which the demonstrative agrees.

(24) c) above[58]. As summarized in table 23, some endings mark exclusively one gender (shaded), while a few endings may overlap and are not exclusive to one gender.

Table 23. Lithuanian gender inflections

ending	masculine	feminine	common
-(i)as	✓	×	✓(some)
-ys	✓	×	×
-(i)us	✓	×	×
-is	✓	✓	×
-uo	✓	✓(some)	×
-ė	✓(some)	✓	✓(some)
-a	✓(some)	✓	✓
-(i)a	×	✓	×

Most √nouns denoting female or male individuals (e.g. ***gaidys*** 'rooster', ***višta*** 'hen') are associated with grammatical marking of feminine or masculine gender, respectively.

There is one complication with gender marking for human animate individuals. There is a class of nouns called common gender nouns (exemplified in (25)). These nouns can be of either gender, that is, they are labile in gender (akin to verbs labile in transitivity). Ambrazas et al. (1997:101) defines common gender nouns as "a sizable group of nouns that can be used in reference to both male and female persons without changing the endings". Typically, these nouns are suffixed with ***-a***, which is morphologically associated with feminine gender. However, the entries refer to beings that are ontologically human, either male or female. In other words, there is a mismatch between the morphological marking of gender (always feminine) and the actual entity denoted by the noun (either feminine or masculine). It may seem that the existence of the common gender nouns undermines my hypothesis that √nouns are categorized based on gender and therefore that gender is intrinsic to √nouns. I will now show that

[58] Most entries provided are in Nominative case. However, the similarity of the entries holds across case inflections. For example, take ***kėdė*** 'chair' (fem) and ***dėdė*** 'uncle' (masc):

	Singular	Plural	
Nom	***kėd-ė, dėd-ė***	***kėd-ės, dėd-ės***	
Gen	***kėd-ės, dėd-ės***	***kėd-žių dėd-žių***	
Dat	***kėd-ei, dėd-ei***	***kėd-ėms, dėd-ėms***	***etc.***

the existence of common gender √nouns does not undermine the claim that gender is a property intrinsic to √nouns.

I argue that common gender √nouns of are a special subset of √nouns, constrained semantically. On the one hand, these nouns denote only ***ontologically animate entities that are human***. In other words, common gender √nouns do not refer to inanimate non-human entities, while both masculine and feminine gender √nouns may be either animate or inanimate, human or non-human.Their grammatical gender is decided by the gender of the human that the noun refers to in a particular discourse context. (I take this as evidence that animacy and gender are distinct features in Lithuanian. If animacy were a kind of gender, the interaction between the two would be unexpected). On the other hand, common gender nouns intrinsically denote only humans ***with pejorative qualities.*** The intrinsic pejorative qualities also set the common gender √nouns apart: they are part of the expressive dimension in Lithuanian. In other words, the choice of common gender √nouns expresses the speaker's negative attitude towards the referent since these nouns cannot be used neutrally (cf. Potts 2007; see Steriopolo 2008, on the use expressive morphology in Russian). √Nouns other than common need not be intrinsically pejorative and are not tied to being ontologically animate and human. The contrast is summed up in table 24.

Table 24. Lithuanian common versus non-common √nouns

√noun type	human, animate	intrinsically pejorative
common	yes	yes
other	may or may not be	may or may not be

For example, ***stalas*** 'table' is masculine and ***kėdė*** 'chair' is feminine. Neither are intrinsically pejorative, unlike the common gender nouns like ***nevėkšla*** 'klutz', and ***vėpla*** 'gawker' and so on.

Note that one can render even the non-common gender nouns pejorative with the help of an evaluative diminutive suffix ***–ūkšt-.*** If this suffix is combined with roots such as ***stalas*** 'table' or ***kėdė*** 'chair', one may attain a pejorative connotation. Crucially,

the use of the suffix does not affect the intrinsic gender of the √noun: ***stalas*** 'table' remains masculine while ***kėdė*** 'chair' remains feminine:

(26) a.stalas
stal-as
table- MASC.NOM.SG
'a table'

b. stali**ūkšt**is
stal-i**ūkšt**-is
table- DIM-MASC.NOM.SG
'a table (dim.,pej.)'

c. kėdė
kėdė
chair- MASC.FEM.SG
'a chair'

d. kėdži**ūkšt**ė[59]
kėd-i**ūkšt-**ė
chair- DIM-FEM.NOM.SG
'a chair (dim.,pej.)'

We can therefore conclude that in Lithuanian masculine and feminine gender marking do not belong to the expressive dimension.

As noted above, the common gender nouns are marked by a feminine suffix. So how can one observe that the common nouns are labile in gender? One can deduce it either through immediate discourse context or by the marking of the modifiers. Contextually, it would be immediately clear whether the noun refers to a female or male. If one relies on a modifier, the marking of the modifier will reveal the gender. For example, when a common gender noun like ***dabita*** 'dandy' is used to refer to a female person, it is treated as feminine gender noun, and the adjective ***tikra*** 'real' is marked as feminine:

(27) Ta moteris yra tikra dabita.
t-a moter-is yra
that-FEM.NOM.SG woman- FEM.NOM.SG bePRES.3SG

tikr-a dabit-a
real- FEM.NOM.SG dandy- COM .NOM.SG
'That woman is a real dandy.'

When the same common gender noun is used to refer to a male person, it behaves like a masculine noun. Again, the gender specification can be deduced from the adjective ***tikras*** 'real' which is marked as masculine in this case:

[59] ž is there for phonological reasons.

(28) Tas vyras yra tikras dabita.
t-as vyr-as yra
that-MASC.NOM.SG man- MASC.NOM.SG bePRES.3SG

tikr-as dabit-a
real- MASC.NOM.SG dandy- COM.NOM.SG
'That man is a real dandy.'

Note that while the gender of common nouns is labile, their inflection for case and number is not affected.That is to say, with respect to morphological marking, the common √nouns follow the pattern of feminine declension ***–a*** √nouns. So this labile, discourse-sensitive gender may be divorced from the morphologically marked gender (e.g., a masculine common noun has a feminine suffix inflection). I take this to mean that inflection does not determine gender, otherwise there will be no gender mismacthes: a √noun referring to an ontologically masculine entity would not have a feminine inflection. √ In the case of common √nouns, there is no dedicated common √noun inflection. A feminine inflection is used yet the noun may be either feminine or masculine[60],[61].

In the example (28) above, we have seen that ***tikr*** 'real' can be either of feminine or masculine gender when modyfing the common gender noun ***dabita*** 'dandy'. In contrast, when ***tikr*** 'real' modifies a genuine, non- common ***–a*** declension noun, such as ***pasaka*** 'tale', it has to be of feminine gender:

(29) a. tikra pasaka
tikr-a pasak-a
real-FEM.NOM.SG tale-FEM.NOM.
'a genuine tale'

b.*tikras pasaka
tikr-as pasak-a
real-MASC.NOM.SG tale-FEM.NOM.SG
'a genuine tale'

Now I turn to inanimate √nouns. While the grammatical gender value of animate nouns is based on natural gender, the gender of ontologically inanimate nouns is

[60] The relation of between gender and declension class is not explored here, and is left to further research. The goal of this study is to reveal the roots and their intrinsic properties. The particulars of how these root intrinsic properties are reflected in the functional domain is the next step of research.
[61] It remains to be seen why feminine inflections is used rather than masculine, and why, in particular, -a inflection given that there are other feminine inflections available.

unpredictable. From the point of view of world knowledge, there is nothing intrinsically feminine to ***audra*** 'storm', and there is nothing intrinsically masculine to ***debesis*** 'cloud'. Crucially, with the exception of common gender nouns, the gender value is uniquely and arbitrarily determined for each noun. As a result, any given noun can only be associated with one gender. This is illustrated in (30) - (31). Intrinsically feminine √nouns cannot be marked as masculine and intrinsically masculine nouns cannot be marked as feminine[62].

(30) a. audr**a**
audr-a
storm-FEM.NOM.SG
'a storm'

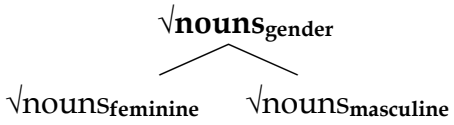
b.*audr**is/-(i)us/-ys**
audr-is/-(i)us/-ys
storm-MASC.NOM.SG
Intended: 'a storm'

(31) a. debes**is**
debes-is
cloud-MASC.NOM.SG
'a cloud'

b. *debes**a/-ė/-ia**
debes-a/-ė/-ia
cloud-FEM.NOM.SG
Intended: 'a cloud'

Thus I conclude that Gender is an intrinsic feature of Lithuanian √nouns. Consequently particular gender values serve to subcategorize nouns grammatically:

(32)



Common gender √nouns fall under √nouns that are marked for gender without any particular specification until particular discourse situation determines the gender to be used. The rest of the nouns split into feminine and masculine.

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[62] A switch may occur in some proper names of humans. For example, a noun like ***audra*** 'storm' is of feminine gender and the switch is not possible as long as it is a common noun that refers to an actual storm. However, when the same noun is used as a female name, it has a masculine counterpart. The pattern is illustrated below.

Common noun		→	**Proper name**	
Fem	Masc		Fem	Masc
audra 'storm'	--		Audr**a**	Audr**ius**
--	vakaras 'evening'		Vakar**ė**	Vakar**is**

3.2.2.2 All and only √nouns are selected by diminutive *–(i)ūkšt*

In this section, I briefly illustrate some of the selectional restrictions which diagnose Lithuanian √nouns. On the one hand, these restrictions distinguish √nouns from √verbs and √adjectives. On the other hand they also distinguish √nouns from category-neutral roots.

While in Blackfoot plural inflection as well as transitivizers serve to diagnose √nouns, these tests do not apply to Lithuanian: plural inflection is fused with case and gender inflection (see 3.2.2.1) and a causative transitivizer may apply to roots of all categories (see 3.2.1.3). In Lithuanian, nouns can be diagnosed with the use of the diminutive suffix ***-ūkšt.*** This suffix selects for nouns, either roots or derived nouns, as illustrated in (33). In contrast it excludes √verbs and √adjectives, as shown in (34) and (35), respectively.

(33) a.uoga
uog-a
berry- FEM.NOM.SG
'a berry'

b. uogi**ūkšt**ė[63]
uog-i**ūkšt-**ė
berry- DIM-FEM.NOM.SG
'a berry (dim.,pej.)'

c. velnias
veln-ias
devil -MASC.NOM.SG
'a devil'

d. velni**ūkšt**is
veln -i**ūkšt-**is
devil - DIM-MASC.NOM.SG
'an imp (dim.,pej.)'

e. lesykli**ūkšt**ė
les-ykl-i**ūkšt-**ė
feed-NOMZ-DIM- FEM.NOM.SG
'bird feeder (dim.,pej.)

f. dykumi**ūkšt**ė
dyk-um-i**ūkšt-**ė
barren- NOMZ-DIM- MASC.NOM.SG
'wasteland (dim.,pej.)

[63] Once the diminutive suffix is added, the noun shifts from one declension type to another declension type. While it is interesting why the shift occurs, this issue is irrelevant to the discussion on roots, especially since change in declension does not affect Gender.

(34) a. vežti
vež-ti
transport-INF
'to transport'

b. *vež**(i)ūkšt**is/-ė
vež**-(i)ūkšt**-is/-ė
transport-DIM-MASC.NOM.SG/FEM.NOM.SG
Verb

c. pirkti
pirk-ti
buy-INF
'to buy'

d. *pirk**(i)ūkšt**is/-ė
pirk**-(i)ūkšt**-is/-ė
buy-DIM-MASC.NOM.SG/FEM.NOM.SG

(35) a. aršus
aršus
feisty- MASC.NOM.SG
'feisty'

b. *arš**(i)ūkšt**is/-ė
arš **-(i)ūkšt**-is/-ė
feisty-DIM-MASC.NOM.SG/FEM.NOM.SG
Adjective

c. gražus
graž-us
pretty- MASC.NOM.SG
'pretty'

d. *graž**(i)ūkšt**is/-ė
graž **-(i)ūkšt**-is/-ė
pretty-DIM-MASC.NOM.SG/FEM.NOM.SG

If these roots were not already categorized, the distribution of the diminutive suffix would be unexpected. That is, there is no immediate semantic reason for ungrammaticality: one can in principle do "a little bit of shopping" or be "a little bit pretty". In fact, there are languages where diminutivization can access events and properties alike (see Wiltschko 2005 on Halkomelem). Thus, Lithuanian √nouns can be diagnosed by means of the diminutive suffix as summed up in table 25:

Table 25. Selectional restrictions on Lithuanian √nouns

Suffix	√noun	√verb	√adjective
-(i)ūkšt - diminutive	✓	×	×

3.2.3 Lithuanian √adjectives

In this section I explore Lithuanian √adjectives[64].

I first show that, unlike in Blackfoot, Lithuanian √adjectives are uniquely identified as such. In other words, √adjectives have a category specific property in Lithuanian, namely degree. This claim is supported by the fact that √adjectives can be subcategorized based on degree. Some √adjectives are gradable while others are not (3.2.3.1). Moreover, Lithuanian adjectives –whether adjectives or √adjectives - can be selected by category specific suffixes, unlike Blackfoot √attributives (3.2.3.2).

3.2.3.1 Lithuanian √adjectives are categorized based on degree

In this subsection I first show that adjectives only modify nouns and verbs, i.e. adjectives are not intrinsically marked for either transitivity or gender.
I argue that their category defining property is degree.

When adjectives modify nouns, they are obligatorily marked for gender, case and number, as illustrated in (36).

(36) a. stipr**us** dant**is**
stipr **-us** dant-**is**
strong-MASC.NOM.SG tooth-MASC.NOM.SG
'a strong tooth'

b. stipr**iems** dant**ims**
stipr **-iems** dant-**ims**
strong-MASC.DAT.PL tooth- MASC.DAT.PL
'for strong teeth'

c. stipr**i** aš**is**
stipr **-i** aš **-is**
strong-FEM.NOM.SG axis-FEM.NOM.SG
'a strong axis'

[64] I consider adverbs a part of adjective category.

d. stipr**ioms** aš**ims**
stipr **-ioms** aš **-ims**
strong-FEM.DAT.PL axis-FEM.DAT.PL
'for strong axis'

As (36) shows, the same adjective ***stipr-*** 'strong' can be marked for either gender. ***Stipr-*** is of masculine gender when it modifies ***dantis*** 'tooth', an intrinsically masculine noun. ***Stipr-*** is of feminine gender when it modifies ***ašis*** 'axis', an intrinsically feminine noun.

Adjectives and nouns are marked for gender, but the gender values are intrinsic only to nouns, not to adjectives. A√noun is associated with only one intrinsic gender, while adjectives can be marked for any gender as a matter of agreement:

(37)

	Masculine	**Feminine**	**Common**
Noun	vėjas wind-MASC.NOM.SG 'wind' --	-- audra storm-FEM.NOM.SG 'storm'	-- -- dabita dandy-COM.NOM.SG 'dandy'
Adjective	stipr-**us** strong-MASC.NOM.SG 'strong'	stipr-**i** strong-FEM.NOM.SG 'strong'	stipr**i** strong-FEM.NOM.SG 'strong'

The fact that gender is not intrinsic to √adjectives can also be seen on the basis of verbal modification. When the adjective ***stipr-*** 'strong' modifies a verb (in which case it funtions as an adverbial), the features it may share with the nominal are no longer marked. In (38), the root is suffixed with adverbial inflection ***-iai*** that does not inflect for nominal features – gender, number or case. If it is marked as an adverbial it can no longer modify nouns (38).

(38) a. Stipr***iai*** lijo.
stipr -iai lij -o
strong-ADV rain-3SGPAST.TENSE
'It rained hard.'

b. *stipr***_iai_** dantis
stipr-***iai*** dant-is
strong-ADV tooth-NOM.SG.MASC
Intended: 'a strong tooth'

This contrast between adjectival and adverbial use establishes that adjectives are not tied to nominal features.

Similarly, the feature that defines verbs, transitivity, is not an intrinsic feature of √adjectives, either. Neither adjectives nor adverbs ever require objects[65].

If adjectives are used predicatively, a copula is required, i.e. adjectives cannot form predicates without a verb[66].

(39) a. Vaikas yra sveikas. Adjective
vaik-as yra sveik-as
child-NOM.SG.MASC be.PRES3SG healthy- NOM.SG.MASC
'The child is healthy.'

b. Alus yra sveika. Adverb
al-us yra sveik-a
beer-NOM.SG.MASC be.PRES3SG healthy-ADV
'Beer is healthy.'

On the basis of these data, I conclude that Lithuanian adjectives do not share features inherent to either √nouns (gender) or √verbs (transitivity). In this respect, they are

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[65] Note that in English one could say that adjectival expressions such as ***proud of*** or ***full of*** could be considered as transitive. Such meanings are usually conveyed with the help of deadjectival verbs in Lithuanian. The closest I could come to the English example is the use of ***pilnas*** 'full':

(i) Pintinė –pilna (aviečių).
pintin-ė piln-a avieč-ių
basket-FEM.NOM.SG full- FEM.NOM.SG raspberry-FEM.GEN.PL
'The basket is full (of raspberries).'

As one can see, even in this case one can say 'The basket is full.' The more specific alternative 'The basket is full of raspberries' is optional. In addition, 'raspberries' are in Genitive case, i.e. at best an oblique object if not a modifier.

[66] Like in many languages, the copula in Present Tense is usually omitted (Wetzer 1996:134). I.e., it is not pronounced but we know it is there due to a pause and its use in tenses other than Present.

similar to Blackfoot √attributives. However, Lithuanian differs from Blackfoot in that √adjectives contain a category specific property, namely degree.

That degree may be an intrinsic feature of adjectives has been argued for by McNally & Kennedy (2008). Accordingly, there are suffixes that select for that feature. Doetjes (2008) has argued that cross-linguistically there may be a continuum of degree affixes: some select for adjectives only, and some select for more than one category. I take this to mean that either degree is intrinsic to more than one category or that degree selecting affixes are sensitive to properties other than just degree. In Lithuanian, however, only adjectives are associated with degree and the suffixes sensitive to degree select only for adjectives[67].

The set of degree suffixes contains ***-esn*** 'comparative', and ***-(i)aus*** 'superlative'. Crucially, in Lithuanian, ***only*** √adjectives or derived adjectives can be marked for degree[68]. Root level degree suffixation is illustrated in (40) where the degree suffix is in boldface:

(40) a. stiprus
stipr-us
strong- MASC.NOM.SG
'strong'

stipr**esn**is
stipr-**esn-**us
strong- SUF_D -MASC.NOM.SG
'strong'

[67] Note that the suffixes selecting for a particular category may select for the subcategories within the category or for the category itself. Recall that in the case of Lithuanian √verbs, temporal suffixes select for the category verb and do not distinguish between subcategories (which can be gleaned based on syntax). In the case of Lithuanian adjectives, degree suffixes do select for the subcategories within the class od adjectives . This behaviour of affixes may appear a confusing and contradictory means in establishing the categorial affiliation. I would argue that it is not surprising: different affixes may select for different layers of categorial domain, e.g. category or subcategories. Since the focus of this dissertation is the categorization patterns associated with roots, I leave the hierarchy of the affixal domain for further research.

[68] Adverbs are also marked for degree. As stated in 3.2.3, I assume that adverbs are a subset of adjectives.

stipr**iaus**ias
stipr-**iaus**-ias
strong-SUF_D- MASC.NOM.SG
'the strongest'

b. stipri
stipr-i
strong- FEM.NOM.SG
'strong'

stipr**esn**ė
stipr-**esn-**ė
strong-SUF_D- FEM.NOM.SG
'stronger'

stipriausia
stipr-**iaus-**ia
strong-SUF_D- FEM.NOM.SG
'the strongest'

c. trenkė stipriai
trenk-ė stipr-iai
hit-PAST.SG 3SG strong-ADV
'hit strongly'

trenkė stipr**iau**
trenk-ė stipr-**iau**
hit-PAST.SG3SG strong-ADV_{DEG}
'hit stronger'

trenkė stipr**iausiai**
trenk-ė stipr-**iausiai**
hit-PAST.SG3SG strong-ADV_{DEG}
'hit strongest'

Degree suffixes select for √adjectives and exclude roots of other categories. If degree inflections are attached to √nouns or √verbs the result is ungrammatical:

(41) dantis *dant**ens**nis *dančiausias[69]
dant-is dant-**ens**nis danč-**iaus**ias
tooth-NOM.SG.MASC tooth -ADV_{DEG} tooth -ADV_{DEG}
'a tooth' Intended: 'toothier' Intended: 'the toothiest'

(42) griausti *griaus**esn**is *griaus**iaus**ias
griaus-ti griaus-**esn**is griaus-**iaus**ias
thunder-INF thunder -ADV_{DEG} thunder -ADV_{DEG}
'a thunder' Intended: 'thunderer' Intended: 'the thunderiest'

However, once denominal and deverbal adjectives are derived from these nominal and verbal roots, degree suffixes may apply:

(43) dant**ing**as dant**ingesn**is dant**ingiaus**ias
dant-**ing**-as dant- **ing-ens**nis dant- **ing-iaus**ias
tooth-SUF_A-NOM.SG.MASC tooth - SUF_A -ADV_{DEG} tooth- SUF_A -ADV_{DEG}
'toothy' 'toothier' 'the toothiest'

(44) griausm**ing**as griausm**ingesn**is griausm**ingiaus**ias
griaus-**ing**-as griaus- **ing-esn**is griaus- **ing-iaus**ias
thunder- SUF_A-NOM.SG.MASC thunder - SUF_A-ADV_{DEG} thunder - SUF_A-ADV_{DEG}
'thunderous' 'more thunderous' 'most thunderous'

If degree is indeed the feature based on which √adjectives are categorized, we might expect to find sub-categories based on this property. This prediction is born out. √Adjectives split into gradable and non-gradable ones.

Thus far, we have seen examples of gradable √adjectives. In what follows I show that there are also non-gradable adjectives.

A subset of √adjectives is not gradable, for example:

(45) basas, neščia
bas-as nešč-ia
barefoot-NOM.SG.FEM pregnant-NOM.SG.FEM
'barefoot' 'pregnant'

One is either barefoot/pregnant or not, and variation in the morphosyntactic marking of degree is not possible in Lithuanian. Based on world knowledge, of course, one can

[69] The laternation between t ~ č alternation is phonologically conditioned.

say that one is less pregnant at 3 months of gestation than at 9 months, but this cannot be expressed with suffixes. Lack of variation in degree is also found in derived adjectives.

(46) Deverbal non-gradable adjectives

rašyti	rašytinė
rašy-ti	rašy -tin -ė
write-INF	write- SUF_A-NOM.SG.FEM
'to write'	'written'

Rašytinė 'written' can not be graded grammatically: either something is written or not (again, ontologically this can be paraphrased to fit a particular concept). The suffixation of degree affixes is ungrammatical:

(47) a. *rašytin**esn**ė
rašy-tin-**esn** -ė
write- SUF_A- SUF_D NOM.SG.FEM
Intended: 'more written'

b. *rašytin**iaus**ia
rašy-tin-**iaus**- ia
write- SUF_A- SUF_D -NOM.SG.FEM
Intended: 'more written'

Context: an ancient culture may be described as utilizing writing more in comparison with other cultures, based on archeological and historical sources

Note, however, that the desired meaning could be transmitted by a periphrastic construction, where degree suffixes attach not to the derived form but to the adverbs more/less that modify the derived adjective:

(48) ?daugiau ar mažiau rašytinė kultūra
daug-iau ar maž-iau rašy-tin-ė kultūr-a
more/much- SUF_D or little- SUF_D write- SUF_A-NOM.SG.FEM culture-NOM.SG.FEM
'a culture that is more or less written'

Context: an ancient culture may be described as utilizing writing more in comparison with other cultures, based on archeological and historical sources

Gradability can be expressed through paraphrase, for forms that are not suffixed with degree suffixes, so the use of suffixes for testing still holds. In addition, the paraphrase requires particular contexts (and some native speakers still find the grammaticality

somewhat questionable), while gradable adjectives can be graded without the need for paraphrase or any particular contextual accommodation.

The same restrictions apply to non-gradable adjectives derived from nominals:

(49) Denominal non-gradable adjectives

a. medis
med-is
tree- MASC.NOM.SG
'a tree'

b. medinis/-ė
med-in-is
tree-SUF_{ADJ}- NOM.SG. MASC/FEM
'wooden'

c.*medin**esn**is
med-in-**esn**-is
tree-SUF_{ADJ}- SUF_{D} -NOM.SG.MASC
Intended: 'more wooden'

d. aguona
aguon-a
poppy- FEM.NOM.SG
'a poppy'

e. aguoninis
aguon-in-is/-ė
poppy-SUF_{ADJ}-NOM.SG.MASC/FEM
'made of/with poppies'

f.*aguonin**esn**is
aguon-in-**esn**-is
poppy-SUF_{ADJ}- SUF_{D} -NOM.SG.MASC
Intended: 'more poppy-like'

In these cases of denominal non-gradable adjectives, gradability through suffixes is not an option either. As with deverbal adjectives, a paraphrase would be possible with a particular contextual accommodation. One could imagine a context where a baker is supposed to bake a poppy seed cake, yet his assistant cheats and does not put enough poppy seeds into the cake. Someone may say that the cake is 'made of poppy seeds, to a degree'. Contexts notwithstanding, the crucial fact is that degree suffixes are not allowed with these entries; only periphrastic constructions such as the one in (50) are.

(50) ?daugiau ar mažiau aguoninis pyragas
daug-iau ar maž-iau aguon-in-is pyrag-as
more/much- SUF_D or little- SUF_D poppy- SUF_A-MASC.NOM.SG cake- MASC.NOM.SG
'a more or less poppy-seed cake, to a degree'

I have argued that √adjectives in Lithuanian form their own category. They are characterized by the intrinsic property degree. Thus far my argumentation has built on the interaction between √adjectives with degree marking suffixes that select for these √adjectives. It is crucial that a subset of roots share a common feature that is selectable and that unifies these roots as a class.

One could argue that gradability relies on semantics, and whether the selectability for degree is enough to posit adjectives form a syntactic category of their own. For example, how a nongradable specification could be distinguished from the absence of such specification? If this were true, the absence of specification should allow for any interpretation, i.e. either gradable or non-gradable (akin to how Chinese Mandarin general number of nouns may be interpreted as 'one or more', Rullmann & You 2006), however this is not the case. Moreover, I argue that there is independent evidence that adjectives form a syntactic category. Namely, there is one more property specific to category adjective: the aptitude for definiteness (discussed in the next section, 3.2.3.2), and whether adjectives are gradable or not they all can be marked for definiteness unlike the other categories.

3.2.3.2 All and only √adjectives are selected by pronominal suffixes and the nominalizer *–um*

If √adjectives form a category of their own, one would expect to find suffixes that select for them. This is indeed the case. There are several suffixes that select exclusively for √adjectives. In what follows I discuss two such suffixes: so called pronominal suffixes as well as the nominalizing suffix ***–um.***

Pronominal suffixes attach to adjectives, as illustrated in (51) (we will shortly see that all other categories are excluded):

(51) ger+as + jis = gerasis
good+NOM.SG.MASC+he
'the good one (masc)'

ger+a + ji = geroji
good+NOM.SG.MASC+he
'the good one (fem)'

For completeness note that pronominal affixes derive so called pronominal or definite adjectives (Ambrazas 1997). Historically, these forms are the result of a blend of adjectival inflections with the pronouns ***ji*** 'she', ***jis*** 'he' (Ambrazas 1997), as illustrated in (51). The use of Lithuanian pronominal suffixes is different from to the use of English adjectives preceding ***one*** in the context of NP-ellipsis, as in (52).

(52) a. The good one was on the shelf. These are the bad ones.
b. *The good one shoe is on the shelf.

English ***one*** is not allowed if the elided noun is inserted. However, this is not the case for pronominal suffixes in Lithuanian: the noun is optionally allowed to co-occur with the pronominal adjective, as shown in (53). This suggests that the pronominal adjective does not replace the noun, like English ***one***.

(53) Gerasis (batas) buvo ant lentynos.
gera-sis bat-as buvo ant lentyn-os
good- MASC .NOM.SG shoe- MASC.NOM.SG bePAST on shelf- FEM.GEN.SG
Lit.: 'The good one (shoe) is on the shelf.'
'The good shoe was on the shelf.'

What is important for the present purpose, is that pronominal suffixes may not combine with categories other than adjectives, whether at the root level or beyond. Neither the √noun ***moter*** 'woman' nor the √verb ***griaus*** 'thunder' may be suffixed by the pronominal suffix, as illustrated in (54):

(54) a. moteris
moter-is
woman-NOM.SG.FEM
'woman'

b. *moter**oji**
moter-**oji**
woman-SUF_{PR}
Intended: 'the woman one'

c. grausti
graus-ti
thunder-INF
'to thunder'

d. *griausioji
griaus-ioji
thunder- SUF_{PR}
Intended: 'the thundering one'

If these roots are adjectivized, then the pronominal suffix can be attached, as illustrated in (55).

(55) a. moter**išk**as
moter **-išk** -as
woman- SUF_{ADJ}-NOM.SG.MASC
'feminine'

b. moter**išk**asis
moter-**išk**-asis
woman-SUF_{A}- SUF_{PR} NOM.SG.MASC
'the feminine one'

c. griaus**ming**a
griaus-**ming**-a
thunder- SUF_{ADJ}-NOM.SG.FEM
'thundering'

d. griaus**ming**oji
griaus-**ming**-oji
thunder- SUF_{A}- SUF_{PR} NOM.SG.MASC
'the thundering ones'

This establishes that the formation of pronominal adjectives serves as a language specific diagnostic for the category adjective.

The distribution of the nominalizer ***–um*** is another test that diagnoses adjectives, and it holds across the gradable/non-gradable subcategories. It suffixes to √adjectives as well as derived adjectives and derives nouns, as illustrated in (56).

(56) a. gražus
graž-us
pretty -MASC.NOM.SG
'pretty'

b. graž**um**as
graž-**um**-as
pretty-NOMZ-MASC.NOM.SG
'prettiness'

c. aršus
arš-us
feisty-MASC.NOM.SG
'feisty'

d. aršumas
arš-**um**-as
feisty -NOMZ-MASC.NOM.SG
'feistiness'

Deadjectival nouns derived with ***–um*** refer to abstract notions, i.e., the property denoted by the adjective.

Evidence that ***–um*** is restricted to adjectives comes from the fact that it cannot suffix to √nouns (57) or √verbs (58).

(57) a.uoga
uog-a
berry- FEM.NOM.SG
'a berry'

b.*uog**um**as
uog-**um**-as
berry- SUF_N -MASC.NOM.SG

(58) a. pirkti
pirk-ti
buy-INF
'to buy'

b. *pirk**um**as
pirk-**um-**as
buy- SUF_N -MASC.NOM.SG

The ungrammaticality of (57) and (58) is the result of a violation of the selectional restriction associated with the nominalizer.

However, if nouns and verbs are adjectivized, ***-um*** may suffix to these derived adjectives, as illustrated in (59) and (60).

(59) a. uogingas
uoga-ing-as
berry –ADJZ-MASC.NOM.SG
'fertile in berries'

b. uoging**um**as
uoga-ing -**um-**as
berry- ADJZ -NOMZ-MASC.NOM.SG
'the fertile in of producing crop of berries'

(60) a.pirklus
pirk-l-us
buy-ADJZ -MASC.NOM.SG
'able to purchase'

b. pirkl**um**as
pirk-l -**um-**as
buy –ADJZ-NOMZ-MASC.NOM.SG
'ability to purchase'

In sum, the distribution of the pronominal inflection of definite adjectives as well as the nominalizer ***-um*** confirm that adjectives form a class of their own in Lithuanian. Table 26 sums up the results fo the two tests used to distinguish the adjectival category.

Table 26. Selectional restrictions on Lithuanian √adjectives

Suffix	**√noun**	**√verb**	**√adjective**
pronominal suffixes	×	×	✓
nominalizer ***-um***	×	×	✓

3.2.3.3 Summary

√Adjectives have been the focus of this section. On the basis of the interaction between roots and suffixes I have argued that Lithuanian √adjectives are categorized as such. Moreover, I have argued that the the intrinsic property of adjectives is degree. I have shown, that pronominal suffixes as well as the nominalizer *-um-* select for either √adjectives or adjectives.

I conclude that Blackfoot and Lithuanian differ with respect to the categorization of adjectives: Lithuanian adjectives form a category of their own, while Blackfoot has an elsewhere category of attributives. The variation in adjective categorization is also attested in the literature (see, for example, the typological investigation ofadjectives in Dixon & Aikhevald 2004). Some adjectives form an independent class as in Korean (Sohn, 2004), some pattern closely with verbs as in Wolof (McLaughlin 2004) or nouns as in Jarawara (Dixon 2004). On Baker's (2003) view, adjectives are property-less and are defined by what they are not, namely neither verb nor noun:

> *What distinctive property do adjectives have that underlies their various morphological and syntactic characteristics? The strongest and most interesting answer to this question would be to say that there is nothing special about adjectives. They are already distinguished from verbs by not licensing a specifier and from nouns by not having a referential index.* Baker 2003:190

While Baker's view is supported by the properties of attributives in Blackfoot Lithuanian adjectives seem to be definable in positive terms.

3.3 The properties of Lithuanian category-neutral ROOTS

As discussed in 3.1.2, category-neutral ROOTS are used across categories without any overt derivational means, just with category specific inflection. Recall that category specific inflections do not derive categories in Lithuanian, as discussed in 3.1. If the category specific inflections would serve to derive (as in Marantz 1997), the existence of

categorized roots would be inexplicable: one should be able to use all roots across categories just with the help of inflections.

But what are the diagnostics for ROOTS? I argue that precisely the absence of diagnostics identifies these ROOTS as category-neutral. Consider, for example, the set of ROOTS in (61)-(62).

(61)

Noun	**Verb**	**Adjective**
a. ruoša	b. ruošti	c. ruošus/-i
ruoš-a	ruoš-ti	ruoš-us/-i
prepare-FEM.NOM.SG	prepare-INF	prepare- MASC/FEM.NOM.SG
'a preparation'	'to prepare'	'diligent'

(62)

Noun	**Verb**	**Adjective**
a. grobis	b. grobti	c. grobus/-i
grob-is	grob-ti	grob-us/-i
loot-MASC.NOM.SG	loot-INF	loot- MASC.NOM.SG/FEM.NOM.SG
'a loot'	'to loot'	'inclined to loot'

In what follows, I show that ***all*** category specific tests apply to these ROOTS, i.e. no one particular form is singled out, unlike with categorized roots. For example, the past frequentative suffix, which usually identifies verbs, may be affixed to these ROOTS.

(63)

a. ruoš**dav**o	b. grob**dav**o
ruoš-**dav**-o	grob-**dav**-o
prepare- FREQ.P-3PL	loot- FREQ.P-3PL
's/he used to prepare'	's/he used to loot'

The diminutive ***-(i)ūkšt*** usually identifies √nouns. However, it is possible to combine it with ROOTS as well, as shown in (64):

(64)

a.ruoš**(i)ūkšt**ė[70]	b. grob**(i)ūkšt**is
ruoš-**(i)ūkšt**-ė	grob-**(i)ūkšt**-is
prepare-DIM-FEM.NOM.SG	loot-DIM-MASC.NOM.SG
'a preparation (pej.)'	'a loot (pej.)'

Finally, degree suffixes, pronominal suffixes as well as the nominalizer ***–um,*** which usually identify √adjectives, also combine with ROOTS:

[70] It is harder to apply this test to abstract nouns: the form itself is grammatical, but it requires more work to set up a context.

(65) a.ruoš**esn**ė
ruoš-**esn**-ė
prepare-SUF$_D$-FEM.NOM.SG
'the more dilligent'

b. grob**esn**is
grob-**esn**-is
loot- SUF$_D$ -MASC.NOM.SG
'the more inclined to loot'

(66) a.ruoš**ioji**
ruoš-**ioji**
prepare-FEM.NOM.SG
'the diligent one'

b. grob**usis**
grob-**usis**
loot- MASC.NOM.SG
'the one inclined to loot'

(67) a.ruoš**um**as
ruoš-**um**-as
prepare-NOMZ-FEM.NOM.SG
'the ability to prepare'

b. grob**um**as
grob-**um**-as
loot- NOMZ -MASC.NOM.SG
'the inclination to loot'

In sum, the diagnostic tests used to distinguish roots of particular category fails when applied to ROOTS. In the case of categorized roots, a particular suffix singles out a root or stem of a particular category and excludes the roots of other categories. In contrast, none of these suffixes exclude any ROOT. I take this to mean that ROOTS are not uniquely affiliated with one particular category. The failure of the tests supports their category-neutral status.

The contrast between categorized and category-neutral roots is summarized in table 27.

Table 27. Category specific diagnostics: √roots versus √ROOTS

Suffix	**√noun**	**√verb**	**√adjective**	**√ROOT**
-dav- Frequentative past	×	✓	×	✓
-ūkšt- Diminutive	✓	×	×	✓
Degree	×	×	✓	✓
Pronominal	×	×	✓	✓
Nominalizer ***–um-***	×	×	✓	✓

I conclude that Lithuanian has two types of roots which can be distinguished by a series of tests (roots) or by the failure of the tests (ROOTS).

3.4 ROOTS are not derived by zero moprhology

Contrasting and comparing the beahvior of roots to ROOTS, one might hypothesize that what I call ROOTS are not in fact ROOTS but instead are mophologically complex roots. That is, one could argue that the categorized roots are all categorized by zero morphology. casein what follows, I argue that this is not the case.

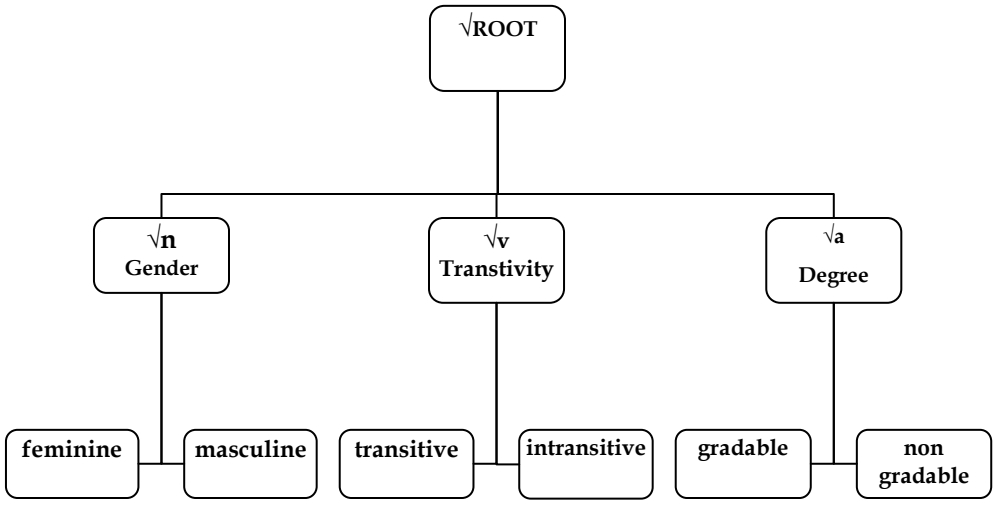
One could argue that in any language there are lots of patterns of word formation that apply to only some subset of the total set of (potentially relevant) roots. Conceivably, one could treat categorization of what I call ROOTS as an instance of covert recategorization of roots. Under this view, one could say that some roots undergo unrestricted zero conversion, and therefore appear category-neutral. If this were the case, I would expect to find patterns of when and why roots behave as if they were category- neutral. To posit a pattern of particular derivation, one has to identify what drives it. For example, the English nominalizer ***-ness*** is used to form abstract nouns exclusively from adjectives (soft → soft**ness**). Crucially, one can identify the selectional restrictions in the distribution of the nominalizer (Spencer, 2004:1260). To the best of my knowledge, patterns that would serve to identify under what conditions roots behave as ROOTS –i.e., undergo zero derviation - have not been reported. This is an argument in favor of the existence of two kinds of roots. Furthermore, if one were to argue that what I call ROOTS are actually derived into different categories as roots, then one has to account for why the zero derivation strategy targets a subset of roots. In other words, if the zero derivation option is available, why stop at a subset? One should be able to apply zero conversion to any root, not just ROOTS. Yet this is not the case. Therefore I conclude that there are different kinds of roots.

3.5 Conclusions and further questions

I have argued that Lithuanian has two types of roots: categorized (uniquely affiliated with a category) and category-neutral (not affiliated with any particular category). To support these claims, I used language specific tests to reveal the categorial identity of categorized roots. I further showed how these tests fail when applied to category-neutral roots, which in turn supports the category-neutral status of these roots.

I found that Lithuanian is different from Blackfoot in that it has category-neutral roots. Lithuanian is similar to Blackfoot in that it also has categorized roots, which can be selected. Lithuanian roots can be represented as in (68). The category-neutral ROOTS can be of any category. The categorized roots split into subcategories:

(68)



Like Blackfoot, Lithuanian categorized roots also have category specific properties. However, Lithuanian differs in that it has a robust √adjective class while Blackfoot √attributives form an elsewhere category. Furthermore, the category intrinsic features are not identical across the two languages. √Verbs in both languages have transitivity as the intrinsic feature (but differ in their subcategories: Lithuanian does not have pseudo-intransitives). √Nouns differ across the two languages. Lithuanian has gender, while

Blackfoot has animacy. And, finally, Lithuanian √adjectives are characterized by the intrinsic property degree, while Blackfoot √attributives lack a selectable property. The comparison of the languages is summed up in the table below.

Table 28. Roots: Lithuanian versus Blackfoot

Language	√category neutral	√categorized	noun	verb	adjective
Blackfoot	×	✓	animacy	transitivity	n.a.
Lithuanian	✓	✓	gender	transitivity	degree

These differences and similarities between Blackfoot and Lithuanian raise further questions. How does the categorization of roots occur? Should one consider lexical categories linguistic primitives if there is significant variation in the properties of categories between the two languages? How should one account for the considerable similarities between the two languages? In the next chapter I propose an account for the categorization of roots in Blackfoot and Lithuanian.

Chapter 4 The categorization of roots and ROOTS: a feature-driven account

In chapters 2-3, we have established that roots vary with respect to their categorial status. All Blackfoot roots are uniquely associated with a particular category, i.e. they are either √verbs, √nouns or the elsewhere category, √attributive. Consequently, Blackfoot has no ROOTS (chapter 2). In contrast, Lithuanian has both roots and ROOTS (chapter 3). The contrast is illustrated in table 29.

Table 29. Variation in categorization of roots

	roots	**ROOTS**
Blackfoot	✓	×
Lithuanian	✓	✓

One of the core goals of the principles and parameters framework, which I adopt here, concerns the question as to which properties of natural language are universal and which ones vary. The patterns of categorization of roots we have observed in the case studies reported in chapters 2 and 3 present us with an analytical challenge. Are there any universal properties associated with the different patterns of categorization? And what are the sources of variation that lead to the observed differences?

I first provide some background as to why the variation in the behaviour of roots is a non-trivial problem both from an analytical and a theoretical point of view (4.1.1). I also establish how the questions raised by the Blackfoot and Lithuanian data fit into this discussion (4.1.2). Next, I introduce the necessary theoretical tools to analyze roots (section 4.2). Then I propose an account for the variation in the behaviour of roots within a feature-driven syntax (section 4.3). At the core of the proposal is a universal syntactic position **k** which is responsible for categorization. I further propose that **k** may be associated with featural content, but this content may vary. This accounts for the differences observed across languages (in 4.3.1). Finally, I show how the feature driven account captures the differences in categorization of Blackfoot and Lithuanian roots (section 4.3.2). In contrast, I show how alternative approaches cannot account for the

variation in categorization (4.4). Lastly, I make predictions and raise further questions (section 4.5).

4.1 Background: views on categorization

Roots and how they are categorized constitute a fundamental aspect of knowledge about the structure of language. Essentially, the categorization of roots is a means of classifying linguistic information. Understanding categorization is important for modeling the grammar of a particular language and the architecture of the grammar as a whole.

The debate about categorization bears on distinct levels of linguistic analysis: descriptive, analytical and theoretical. From the point of view of fieldwork, it is important to ascertain what tools are necessary to capture the categorization strategies of the language in question. The analytical challenge is to discern a pattern that underlies the categorization. The theoretical goal is to derive the observed pattern based on some overarching linguistic principle.

I first provide some background on a recent debate concerning the nature of categorization (4.1.1), and then point out how the patterns of categorization in Blackfoot and Lithuanian contribute to the debate (4.1.2).

4.1.1 Views on categorization: the context

In what follows, I give a synopsis of representative views on categorization. I aim to highlight the empirical and theoretical issues pertaining to categorization. My secondary goal is to illustrate how one can arrive at distinct conclusions about categorization in a particular language.

The debate on categorization in Salish is an instructive example of distinct views. At the onset of the dialogue, there has been a claim according to which Salish does not

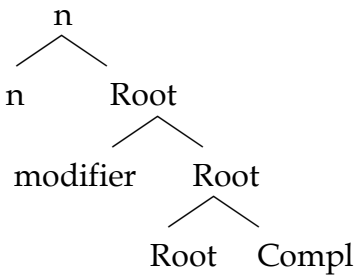
distinguish between nouns and verbs. In particular, what appear to be prototypical nouns can be inflected with tense, transitivity and subject/object agreement, clause type markers, and aspectual (event type) modifiers (Kinkade 1983, Jelinek & Demers 1994). However, evidence for categorization emerges once more extensive tests are applied. Specifically, Demirdache and Matthewson (1995) have shown that relative clauses can only have NP as their head, and complex NPs are also headed by nominals. In addition, particular auxiliaries pick out verbs as main predicates and exclude nouns (Montler 2003). The argument for lack of categorization is however not baseless: it relies on the more noticeable – one could maybe say more frequent - distributional characteristics of roots, such as tense and transitivity marking.

In the last decade, the issue of category-neutral roots has drawn attention outside of the Salish-specific debate. In particular, several authors have argued that roots are universally category-neutral (Marantz 1997, Josefsson 1998, Borer 2005). In particular, these authors claim that ROOTS are devoid of any grammatical information but instead they denote conceptual content only. Accordingly, the categorial identity of ROOTS is syntactically determined. In other words, categorial identity is divorced from ROOTS (for more detail on the Marantzian view, see section 4.3).

Contra Marantz (1997), Davis & Matthewson (1999) argue that one cannot dispense with lexical categories, and that categorization is universally lexical, albeit its manifestation may differ across languages. Their principal assumption is that, universally, category-neutral ROOTS are neither possible nor desirable for reasons having to do with learnability: the categorial distinctions are crucial bootstrapping means in language acquisition. According to Davis & Matthewson (1999), the category-neutral behaviour of ROOTS is only apparent. In some cases, indications of categorization may have been overlooked due to the particulars of language specific tests, like in the aforementioned case of Salish. In other cases, ROOTS may appear category-neutral syntactically, but in that case their semantics will reveal their categorial affiliation. Davis & Matthewson (1999) argue that this is the case for English nouns. On their view,

English nouns are all mass until individuated and made into count by a functional head Number. (One could interpret this as adding sub-categories based on category specific property, namely, Number). However, not all roots can be individuated and made into nouns, e.g. there is no nominal version of ***tall*** (unless its nominalized form is derived). If one takes these distinct approaches to categorization at face value, one is faced with an interesting puzzle. It appears that one has to take sides: either you assume that UG allows for category-neutral ROOTS or you assume that UG does not allow for this possibility. Your assumption will be based on the evidence from whichever language one happens to work with. There is, however, an alternative: both approaches may be right. Based on evidence from Halkomelem Salish, Wiltschko (2005) argues that one can find category-neutral environments in Salish. Specifically, Wiltschko (2005) shows that diminutive and plural affixes select for ROOTS before they are distinguished as verbal or nominal roots. In that sense, diminutive suffixes are added before categorial information is added and as a consequence they display category-neutral behaviour. How can one reconcile this fact with the fact that Salish distinguishes between verbal and nominal categories? Wiltschko (2005) proposes that syntactic rules may target distinct levels: specifically, roots may be targeted before or after syntactic categorization has taken place. In that way, the contradictory views are reconciled. The different conclusions are based on different patterns, and both patterns are real. Thus, syntactic rules may apply to different levels of derivation: before and after categorization. For example, as evidenced in (1), a root-level modifier can apply to a ROOT before it attains a particular category:

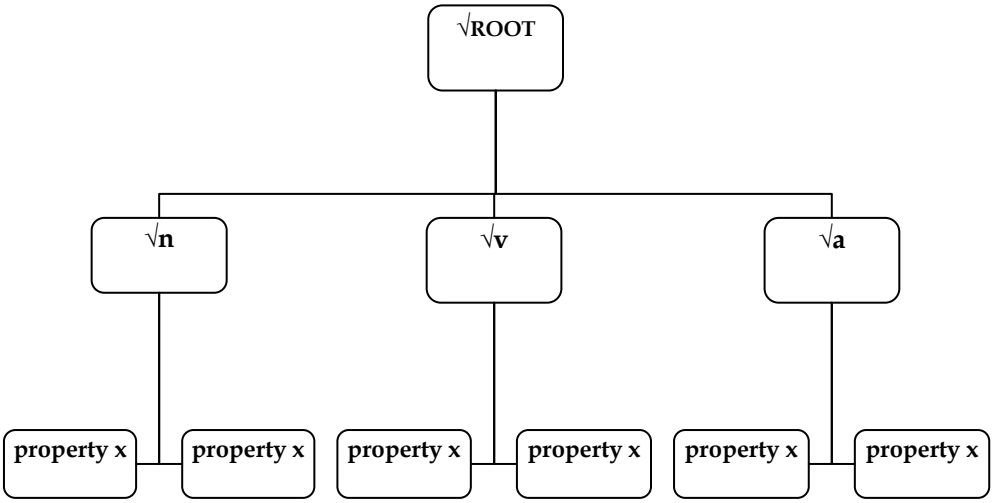
(1)



Wiltschko 2005

So roots may or may not be ROOTS. The relevant question is whether the syntax of a particular language can access roots both in their categorized (roots) and pre-categorized forms (ROOTS). We therefore may expect variation in the syntactic access to roots in distinct guises: (i) when a root is bare; (ii) when a root is categorized; (iii) when a root is subcategorized. If we abstract away from the language-particular incarnations of the charts I gave for Blackfoot and Lithuanian roots, what we have is the three distinct guises of roots that may be available to syntax:

(2)



This is, of course, a schematized version: languages may lack or have more properties that are intrinsic to particular categories (e.g., German has a threefold Gender system), or may lack entire categories (e.g., Blackfoot lacks the adjective category).

4.1.2 Categorization: the view from Blackfoot and Lithuanian

Generalizations drawn based on the behaviour of Blackfoot and Lithuanian roots tie right into the debate on categorization. Blackfoot roots are uniquely associated with one category (roots), and category-neutral behaviour is not observed (chapter 2). In Lithuanian, both categorized roots and category-neutral ROOTS can be observed (chapter 3). The interaction between roots and affixes reveal the categorial affiliation of roots. In

particular, I have shown that category-specific suffixes in Blackfoot select for a particular subset of roots, i.e. roots do not freely occur with suffixes of all categories. To my knowledge, there are no suffixes that may apply across categories. That is, suffixes, too, do not display category-neutral behaviour.

In contrast, in Lithuanian there is a split: roots are selected by suffixes particular to one category, while ROOTS can be used with suffixes of all categories. In addition, there are suffixes that can apply across categories (e.g. the causative suffix). If all roots were ROOTS, the restrictions on the distribution of these suffixes would be unexpected. Conversely, if all roots were roots, then they should only be able to combine with the suffixes of a particular category. This is not the case, as we have seen. Consequently, the observed variation in the behaviour of roots is evidence that there exist different kinds of roots. In this sense, this finding contributes to the ongoing debate regarding the categorial status of roots. Oddly enough we get evidence for category-neutrality from a language that lacks it. That is, the contrast between roots and ROOTS can be accounted for if we acknowledge the existence of the distinct types of roots.

The tests we have applied to Blackfoot and Lithuanian roots have also revealed the properties that drive the interaction between roots and affixes. I propose that the existence of a feature intrinsic to a particular category is a universal, and drives the categorization of roots across and within languages. Specifically, I have shown that affixes may select for distinct incarnations of roots: (i) ROOTS; (ii) roots associated with a particular category (n, v, a); (iii) roots associated with a particular subcategory of a given category. This, too, contributes to the debate on categorization.

The challenge in this chapter is to provide an account that captures the variation in the patterns of categorization of roots.

4.2 Theoretical assumptions

Based on the data from Blackfoot and Lithuanian discussed in chapters 2-3, I have concluded that roots may but need not be intrinsically associated with a category. Moreover, we have seen that roots may be selected either via their category or via their subcategory.

In what follows, I introduce the tools necessary to construct a formal account for the observed variation in the patterns of categorization.

Feature. The notion of 'a category-particular property' is at the core of my proposal. To capture it in current formal terms, I adopt the label 'feature' which is defined as a property of words (Adger 2003:23). I assume that features also capture properties of roots. The use of features to distinguish lexical categories is reminiscent of an early observation by Chomsky (1970:199):

> *It is quite possible that the categories noun, verb, adjective are the reflection of a deeper feature structure, each being a combination of features of a more abstract sort.*

I adopt the assumption, pervasive in the minimalist program, according to which features (and feature bundles) drive the construction of syntactic structures (Chomsky 1995, Pesetsky & Torrego 2006, among others).[71] According to Chomsky (1995), features associated with linguistic objects come in two guises: interpretable and uninterpretable. A feature is interpretable if it is valued. Thus, uninterpretable features need valuation. Uninterpretable features are valued by a corresponding interpretable feature. Following standard practice, I represent uninterpretable features as *u*F, and interpretable features as F.

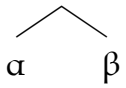
Merge. How are features combined with roots? I assume that it is done via the syntactic operation Merge. It is a standard assumption within the minimalist program

[71] What features are, and how they cluster together is a matter of an active research program (cf. Embick & Noyer 2009; Adger and Svenonius 2009).

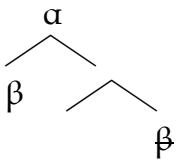
that syntactic structures are built by two elementary operations: Merge and Move. While Merge creates new linguistic objects, Move is responsible for the displacement of linguistic objects. The latter is often viewed as a particular instance of the former. Specifically, Merge adds a linguistic object that is external to the existing structure (i.e., from the lexicon or numeration) and is thus called External Merge. This is illustrated in (3) a.

In contrast, Move takes a linguistic object from inside the existing structure and remerges it at a later stage in the derivation (i.e., higher in the structure). This process is thus called Internal Merge and is illustrated in (3)b.

(3) a. External Merge



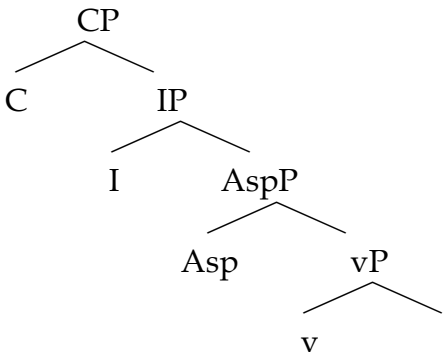
b. Internal Merge



Everything else being equal, a theory of structure-building that relies solely on the recursive operation Merge cannot account for why elements are merged in a particular order (cf. Hegarty 2005). Therefore, I assume the existence of a universal syntactic base.

Universal Base I adopt a particular version of the Universal Base hypothesis (Kayne 1995) according to which all languages share the same functional hierarchy (Cinque 1999, Hegarty 2005, Rizzi 1997). The Universal Base can be viewed as a kind of syntactic spine which universally determines the hierarchical organization of functional categories. The universal functional hierarchy I assume is schematized in (4). Accordingly, Universal Grammar provides at least the following hierarchically organized functional categories: CP, IP, AspP, and vP.

(4)



Parametric Substantiation To account for language variation, I adopt Ritter & Wiltschko's (2009) Parametric Substantiation Hypothesis. According to this view, Universal Grammar makes available a hierarchically organized inventory of functional categories (the universal spine). However, it diverges from the standard assumption according to which functional categories are universally associated with fixed substantive content, e.g. IP as a host for Tense (Pollock 1989, Cinque 1999). According to the Parametric Substantiation Hypothesis functional categories may be substantiated by different substantive content across languages. The sole restriction on the possible substantive content is that it be compatible with the universal core function of the functional category they substantiate. On this view, while IP is universally available in all languages it may host different substantive content: Tense in English, Location in Halkomelem, and Person in Blackfoot (see Ritter & Wiltschko 2009 for a detailed discussion). According to their view, it is the syntactic spine which functions as a key component of the computational process: it restricts how linguistic objects are associated with the hierarchy of nodes.

Agree How do features drive the derivation if they merge into the syntactic spine[72]? I posit that terminal nodes of the spine also host features, albeit uninterpretable [*u*F]. The elements that merge into the syntactic spine are either features or linguistic

[72] Note the different kind of Merge: in minimalism, two linguistic elements merge; I use merge to introduce a particular linguistic element into the syntactic spine. I leave the implications of how distinct the two Merge operations are to further research. One immediate consequence of such a distinction is that merge into a syntactic spine is restricted by the posited heads and their hierarchy.

objects associated with features. Interpretable features may *value* the uniterpretable feature via the syntactic operation Agree.

Valuation is the process by which an uninterpretable feature is associated with content, and therefore a value. For example, under the Marantzian view (1997), a particular category would be acquired if a ROOT would merge with the categorizer head. Under my view, the particular category would emerge as a result of feature interaction. For example, in Lithuanian, category adjective will come about if an uninterpretable feature [Degree] associated with the category adjective is valued by an interpretable feature – gradable versus non-gradable. This process renders the uninterpretable feature interpretable. The derivation can only proceed when uninterpretable features are valued, indicated by a strikethrough (~~*u*F~~).

Valuation is achieved via the operation Agree. I assume the version of Agree as defined in Pesetsky & Torrego 2006, summarized in (5).

(5) **Agree**

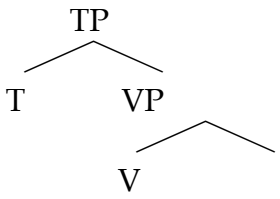
(i) an unvalued Feature F (a probe) on a head H at syntactic location α (F_α) scans its c-command domain for another instance of F (a goal) at a location β (F_β) with which to agree.

(ii) replace F_α with F_β so that the same feature is present in both locations.

Pesetsky & Torrego 2006:4

The mechanics of the operation Agree is best explained using an example. Consider, for example, the relation between Tense and V as schematized in (6). For the time being, I am ignoring Aspect and assume that INFL is substantiated as Tense.

(6)

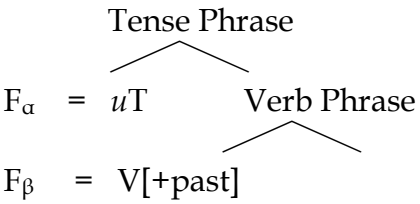


In (6), T c-commands V, where c-command entails that node T is a sister to node VP and scopes over all nodes that VP contains. Assuming that the head of a complex structure

is the element that selects for its sister, it follows that in (6), T is the Head. The selected element functions as the complement.

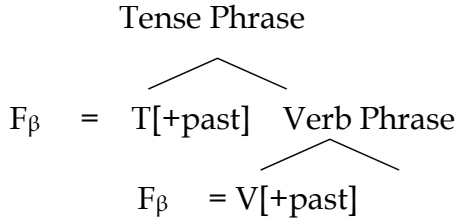
According to Pesetsky & Torrego (2006), the features involved in a structure like (6) are as follows: T contains an uninterpretable tense feature (*u*T), while V provides an interpretable T feature. Suppose that the feature T is [+past]. The unvalued feature *u*T is valued via the operation Agree. The unvalued *u*T (F_α) probes within its c-command domain for a goal V (F_β). Once the probe finds the goal, the value of F_β provides a value for the uninterpretable feature of F_α as illustrated in (7).

(7)



Thus, as a result of Agree, T is instantiated as [+past] as illustrated in (8).

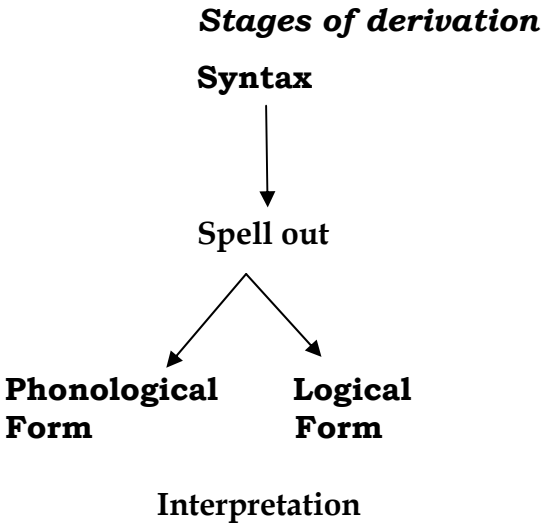
(8)



Once the uninterpretable features are valued, the syntactic derivation can proceed. I propose that all syntactic operations – be it inflection of verbs or categorization of roots– are driven by the interaction of features in this way. The content of the valuing feature however may vary.

Model. I assume the architecture of grammar schematized in (8) (Embick & Noyer 2007):

(8)



The **Vocabulary** which is accessed after **Spell-out** contains both atomic and complex linguistic objects. The latter are the spell-out of feature bundles which are derived syntactically. **Spell-out** refers to an operation whereby a derived expression is sent off to the interpretive components: Phonological Form and Logical Form.

4.3 The proposal

In this section I introduce my proposal to account for the patterns of root categorization. I argue that categorization is a syntactic process which relies on a syntactic categorization position (henceforth **κ**). Essentially, **κ** is a root sorting device. It hosts an uninterpretable feature ***uc***, which serves as a meta-label for the content of a particular category in a particular language:

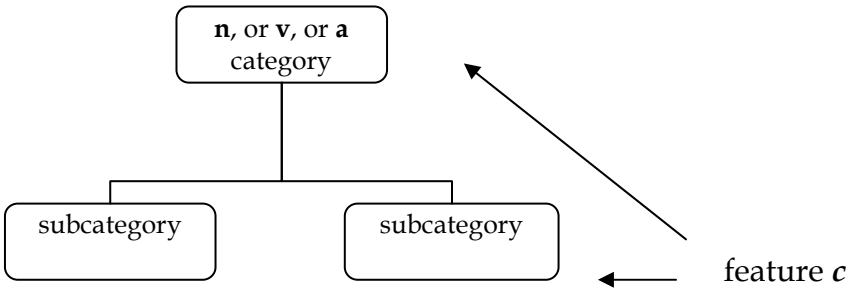
(9)

In what follows, I first discuss the possible range of content for ***c***, and exemplify it with language-specific examples. I then discuss the categorization structure **κ**. Finally, I go over the syntactic operations needed to combine roots with ***c*** and **κ**. I conclude that

the variation in the content of features and the locus of merge results in different types of roots: categorized roots and category-neutral ROOTS.

Feature *c*: its content and interpretability. I posit that ***uc*** associated with **κ** may be valued by features that are intrinsically associated with roots. As we have seen in chapters 2 and 3, root features may come in contrasting pairs of subcategories: [animate] versus [inanimate], or [feminine] versus [masculine], and so on. In the absence of sub-categories, the general category emerges, i.e., just n or v or a[73]. This is schematized in (10):

(10) **Feature c: content for v, n and a**



Assuming the existence of contrastive pairs builds on the pervasive tradition of binary oppositions in linguistics in general and generative grammar in particular: if a feature is posited, linguistic elements can potentially be of two opposite values with respect to the feature (cf. Trubetzkoy 1939). The third option for *c* is that it remains general (represented by α), i.e. allows either subcategory. This derives roots that are associated

[73] The emergence of a general feature is not particular to categorization environments. One can find, for example, instances of general number, as reported in Rullmann & You (2006:175):

"Zuótiān wǒ măile shū
yesterday I buy Asp book
'Yesterday I bought one or more books.'

One striking property of bare nouns is that semantically they are neither singular nor plural, but rather "neutral" or "unspecified" for number as suggested by the somewhat cumbersome English translation 'one or more books' (cf. Krifka 1995, 2005; Chierchia 1998a,b among others). Following Corbett (2000), we will say that bare nouns in Mandarin have GENERAL NUMBER."

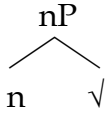
with categorial features alone (n, v, or a) in the sense that they can be of either subcategory within a given category.

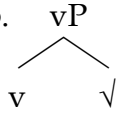
In sum, I propose that languages differ in the particulars of the featural content for their categories. In other words, while the categorizing position **ĸ** is universal, its featural content may vary or may be lacking. For example, the feature ***c*** for √nouns in Blackfoot is [Animacy] while the feature *c* for √nouns in Lithuanian is [Gender]. The two languages differ in √attributives: Lithuanian attributives have [Degree] as their feature *c*, while Blackfoot √attributives are not categorized, i.e., they lack the feature ***c*.** The languages share [Transitivity] as the feature ***c*** for √verbs.

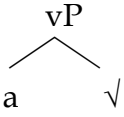
In principle, my proposal allows for an endless variation in the content of the features, suggesting that the content is language specific rather than universal. It remains to be seen what delimits the variation. It may be that the categorial affiliation is decided by the interaction of various features, (cf. Ferrari-Bridgers 2007). For now, I set this question aside for further research (for some more discussion, see sections 4.4 - 4.5).

In addition to variation in content, the feature ***c*** also comes in two forms: interpretable and uninterpretable. The feature on the syntactic position **ĸ** is uninterpretable (*u**c***), while the feature valueing *u**c*** on **ĸ** is interpretable ***c***.

How does the feature *c* interact with the categorization structure? To accommodate the patterns of categorization in Blackfoot and Lithuanian, I adopt the syntactic structure originally proposed by Marantz (1997). Under his view, roots are independent of their categorial identity, i.e. all roots are ROOTS. Categorization occurs in syntax, when a ROOT merges with a functional head: n, v, or a, respectively:

(11) a. 

b. 

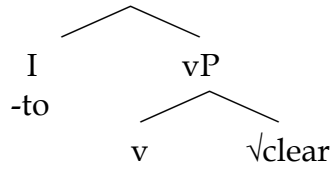
c. 

The assumption that roots are not intrinsically associated with categorial identity elegantly accounts for the fact that many English ROOTS can be used across several lexical categories. Take, for example, a ROOT like ***clear***:

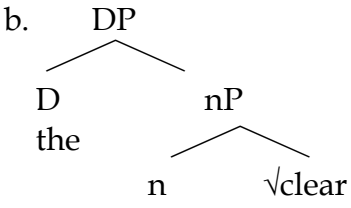
(12) a. The banker goes to sleep with a **clear** conscience. Adjective
b. The banker wants to **clear** his name. Verb
c. The fraud charges are dropped, and the banker is in the **clear**. Noun

In (12), ***clear*** is used as verb, as a noun and as an adjective. On the assumption that categorization is syntactic these examples are analyzed as in (13).

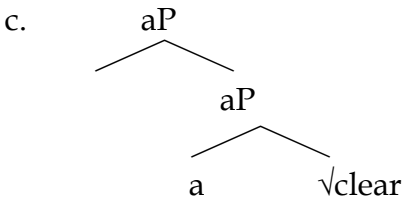
(13) a.



b.



c.



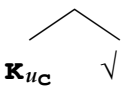
Thus, as a ROOT, ***clear*** may combine with all categorizing heads.

According to Marantz, most English roots display category-neutral behaviour, i.e. are ROOTS (cf. also Josefsson 1998 on Swedish). But as we have seen, Blackfoot has roots only, not ROOTS. Consequently, universal grammar must allow for categorization structures different from the ones illustrated in (13). This raises the question as to what accounts for the variation in the syntax of roots? Why aren't all roots ROOTS?

Marantz' (1997) analysis does not straightforwardly account for this type of variation. If roots were universally ROOTS, then we would expect that all roots could be of all categories in all languages. This is not the case: not all roots across all languages are ROOTS. Specifically, we have seen that the categorial identity of Blackfoot roots is unique, and ROOTS are unattested. This lack of uniformity requires an explanation.

I therefore revise the categorization structure as follows. The categorization structure itself is retained: a functional head merges with a root, as illustrated in (14).

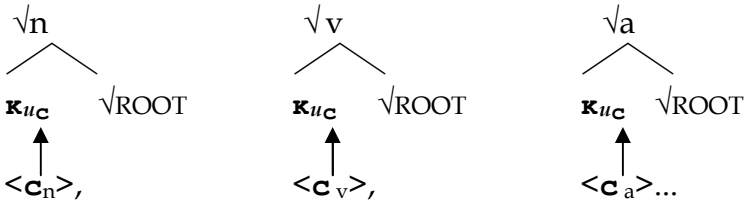
(14)



However, the categorizing position **κ** by itself does not provide the categorial identity to the root √. Crucially, **κ** hosts an uninterpretable feature *u**c***. A language-particular interpretable feature ***c*** provides the categorial identity. This much is universal.
The source of variation is the locus of merge with the interpretable feature ***c*** and the content of the language particular feature **c**.

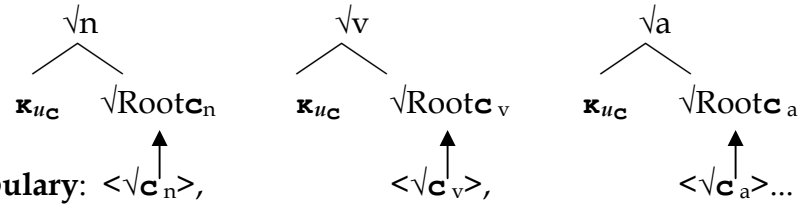
On the one hand, the feature ***c*** may merge directly from the **Vocabulary** into the categorial head and value *u**c***. Then the attained value of the categorizer is assigned to the ROOT syntactically**.** Given that the categorizer is valued by the feature syntactically, there are no restrictions on the combinations, i.e., *u**c*** may merge with a distinct feature ***c*** of different content (cf. substantive variation by Wiltschko & Ritter 2009). Consequently, the same ROOT can be of any category. I refer to this as ***morphological valuation*** (**m-valuation**).

(15)



In essence, this accounts for how the category of ROOTS is constructed (in the sense of Marantz 1997, and subsequent work).
On the other hand, the feature ***c*** may form a bundle with a root first, in the **Vocabulary**, and then the root, already endowed with the feature ***c***, will value the categorizer.

(16)



The root is already associated with the feature ***c*** before it enters the computation. In this case, i is the categorized root that values the categorizer upon entering syntax. I will refer to this as ***lexical valuation*** (***l-valuation***). Since roots are intrinsically associated

with an interpretable feature ***c***, which serves to value the categorizing head, each root has a unique categorial destiny. This is how I account for the existence and behaviour of categorized roots.

The feature responsible for the valuation of ***uc*** may be of two kinds:

(i) it may be a general categorial feature: n, v, or a; or
(ii) it may also be a feature associated with specific content, which is in turn responsible for sub-categorization.

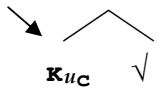
One could argue that the categorizing head itself (**ĸ**) is unnecessary, and that instead we might insert the root without the mediation of the syntactic categorizer position. I argue, however, that the categorizing syntactic head is necessary. One reason is to preserve the homogeneity of the categorization structure itself which I take to be universally available. The second and more important reason is that I view this structure as a root-classifying device at the onset of syntactic operations. If the classifying device, a.k.a., categorization structure, is removed, then the entry of roots and ROOTS into syntax is no longer motivated by feature interaction, and becomes a stipulation. We would lose the account of variation between the two different types of roots[74].

Thus far I have proposed the derivation of two distinct patterns of categorization. One strategy for categorization is found in Blackfoot roots. Such roots are inherently associated with a categorizing feature which serves to value *u***c** in **ĸ**. This is the case of **l-valuation**. Another strategy for categorization is attested by ROOTS in Lithuanian. Such roots are not associated with a categorizing feature. Instead they are inserted into the categorizing structure. In this case ***uc*** on **ĸ** is valued by morphological marking (either overt or covert). This is the case of **m-valuation**.

[74] More work is required to determine what the implications of my approach are and how to test them. See chapter 6 for some further discussion. Within the body of the thesis, I argue that properties of Lithuanian ROOTS discussed in 3.2 support my view of root classification. Namely, the lack of an inherent feature on the ROOTS allows to account for the distribution of suffixes with respect to these ROOTS. Moreover, strategies of re-categorization discussed in chapter 5 also constitute a supporting argument for the analysis of categorization: both processes utilize the same stock of features.

There is, however, another possibility for categorization. That is, we might expect that *uc* on **κ** is valued by a higher functional head as in (17). Let us call this ***functional valuation*** (**f-valuation**).

(17)



This would instantiate the type of categorization originally proposed in Marantz (1997): ROOTS are nouns by virtue of being a complement to D. Since this type of categorization is not attested in Lithuanian or Blackfoot, I leave it for future research.

Table 30 sums up the logically possible types of categorization:

Table 30. Types of valuations

Type of valuation	Locus of valuation	Source of valuation
m-valuation	syntax	feature c
l-valuation	Vocabulary	root
f-valuation	syntax	a higher functional head[75]

Now I need to establish the mechanism for the interaction between the **κ***uc* and ***c***.

How does the feature *c* value *uc*? I argue that Generalized Agree mediates between the feature **c** and **κ***uc*. To capture the interaction of features within the categorization structure, I utilize the operation Agree introduced in section 4.3.1. To accommodate the distinct types of categorization, I propose Generalized Agree, defined as in (18):

(18) **Generalized Agree**
an unvalued Feature F (a probe) on a head H at syntactic location α (F_α) either

(i) scans downwards its c-command domain for another instance of F (a goal) at a location β (F_β) with which to agree
or
(i') scans upwards for another instance of F (a goal) at a location β (F_β) with which to agree
(ii) replace Fα with Fβ so that the same feature is present in both locations.

[75] This is a logical possibility that could be available and as such it is mentioned in the discussion. At the moment, I do not have either Blackfoot or Lithuanian data to argue either for or against this option of valuation.

Under Pesetsky & Torrego's (2004) version of Agree, the probe F_{α} searches only downwards for the goal F_{β} until its uninterpretable feature gets valued. Under Generalized Agree, the probing may be either downward or upward. (cf. Baker 2008:221, on cross-linguistically attested bi-directionality of agreement[76]). The probing is downward when the uc on the categorizer searches for the category intrinsic feature c on the root. The probing is upward when the interpretable feature is not available downwards, and the upward search results in obtaining the necessary feature from some higher node (an option I do not explore in this thesis). The restriction on probing is first merge (i.e., the most local goal): whenever the probe finds a suitable goal, the valuation takes place and the probing is over. Thus, Generalized Agree captures the intuition that the origin of the feature ***c*** may vary with respect to ***uc*** of the categorizer. The operation Generalized Agree is the means to capture the interaction of interpretable and uninterpretable features. Generalized Agree does not say anything about either the locus or content of the feature ***c***. It merely allows us to handle the valuation of the uninterpretable features, wherever their source may be: a higher head, a feature or a root-feature bundle from the **Vocabulary**. It is my claim that features need not be tied to functional heads only. In other words, features (or feature bundles) are not tied to a particular linguistic object. This is a departure from Minimalism. In Minimalism there are only features. In my account, there are syntactic positions and features, and thus they can be dissociated. In feature-driven Minimalism this dissociation is impossible, because the positions do not exist[77]. In addition to the distinction in syntactic positions, I also argue for variation in the substantive content associated with these positions (cf. Ritter & Wiltschko 2009). In other words features that are hosted in these positions may vary. These are far reaching implications that I need to explore further (see chapter 6 for some further discussion).

[76] See also a similar view on agreement by Béjar & Rezac (2009), where probing is sensitivized for either an external or internal argument.

[77] My proposal is reminiscent of van Gelderen's view (1993) according to which agreement and tense features may be separated from Agreement and Tense nodes.

Generalized Agree also applies in the cases of re-categorization (i.e., shift in category and inflection).

Re-categorization differs from categorization in the make up of the re-categorizer. A re-categorizer selects for a particular category yet it also has its own categorial identity. In the feature-based model I am assuming, c-selection may be analyzed as an uninterpretable categorial feature (Adger 2003). Crucially, the re-categorizer contains two types of features:

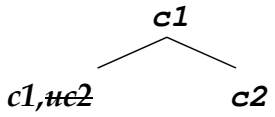
- a feature which determines its categorial identity (an interpretable feature c1)
- a feature which encodes its c-selecional restrictions (an uninterpretable feature *uc*2)

The general format of the lexical entry of a re-categorizer is given in (19).

(19) Re-categorizing lexical entry: **<*c1*,*uc*2>**

Thus a re-categorizer has a categorial identity (***c1***). The c-selectional restriction of a re-categorizer requires that it combine with a lexical entry of another categorial identity, namely ***c2***, which values the uninterpretable feature ***u*c2.** The categorial identity of the re-categorizer, ***c1***, projects.

(20) Re-categorizing structure



Thus far, I have discussed the feature ***c*** with respect to categorization and re-categorization, i.e. utilized to construct a category or to attain a shift in category. For the sake of completeness, one more environment of feature c has to be taken into account, namely inflectional morphology. I will briefly address it here, athough this is not the focus of the study. If we assume that there is reason to posit the feature ***c***, then it should play a role in all environments where categorial information is relevant. Thus I propose that the feature ***c*** is also utilized for congruence with a category, i.e. in inflectional agreement (such as e.g., category specific plural or case marking for nominals, or temporal marking for verbs). Category specific inflectional agreement is resolved via

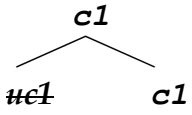
Generalized Agree, using the same mechanism of feature valuation. In contrast to the re-categorizer which has an uninterpretable feature ***c*** and can be valued by any category, inflectional affixes contain a particular category specific uninterpretable feature: a feature which encodes the c-selecional restrictions (***uc1***).

The general blueprint for an inflection would be as in (21):

(21) Inflection lexical entry: **<*uc1*>**

The syntactic structure of an inflection would be as in (22):

(22) Inflection structure



While a categorizer or a re-categorizer are elements in the construction of a category, an inflection is not. Inflection is a locus of interface with other linguistic objects: it relates a categorized linguistic objects to other objects, i.e. it forges a grammatical relation. An inflection simply agrees with the category of the root it attaches to, and does not enforce a new categorial identity. An inflection is also different from both the re-categorizer and categorizer in that it may contain additional interpretable and uninterpretable features necessary for grammatical relations beyond the categorial level (such as, e.g., Case, Number and the like). These other features are omitted from the discussion given that they are not central for the construction of categories (but see, for example, Müller 2008 for more discussion). Thus, table 31 lists at least three environments where the intrinsic categorial features can be observed:

Table 31. Environments of feature *c*

	category intrinsic feature
categorizer	***uc***
re-categorizer	***c2, uc1***
inflection	***uc1***

In sum, the categorizer **ĸ** hosts just the uninterpretable feature ***uc;*** finally a re-categorizer selects for one unterpretable categorial feature but carries another,

interpretable categorial feature; finally, inflectional morphology selects for a particular kind of ***uc1***, hence the index 1, to capture the non-derivational use.

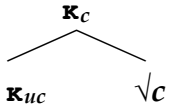
4.3.2 How the proposal accounts for Blackfoot & Lithuanian

I will now go over the implementation of the proposal in detail, applying the model to the data. In 4.3.2.1, I address roots. In 4.3.2.2 I discuss ROOTS.

4.3.2.1 Roots: Blackfoot & Lithuanian

In the above proposal, the categorization structure for Blackfoot and Lithuanian roots is as in (23) below:

(23)



A root is associated with ***c*** pre-syntactically (i.e., in the **Vocabulary**). It enters syntax with an interpretable categorial feature √***c***. I propose that the syntax of roots is the same across these two languages, the only difference being the content of the feature responsible for valuing *u**c*** on **κ**. I will now address each category in each language.

Nominals. As shown in table 32, Blackfoot and Lithuanian contrast in the substantive content of their nominal ***c***.

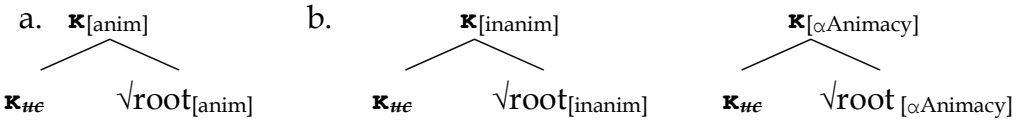
Table 32. Blackfoot versus Lithuanian √noun *c*

	Blackfoot	Lithuanian
content of feature *c*	Animacy	Gender

Blackfoot √nouns. As shown in chapter 2, [Animacy] is the intrinsic feature associated with Blackfoot nouns. Since all Blackfoot roots are uniquely affiliated with a categorial identity, all √nouns come with a classification based on [Animacy]. In terms

of the formal system I am proposing, this corresponds to an interpretable feature ***c*** [animate] or [inanimate]:

(24)

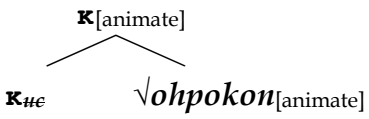


The interpretable feature ***c*** associated with the root values the categorizer κ_{uc}, and the entire projection attains the [Animacy] value intrinsic to the root. If the feature ***c*** were assigned by the categorizing head **κ** , then we would instead expect that any given root may be associated with different values for [Animacy] or even with features of different content. That is, they would not appear to be inherently categorized.

There is a small set of roots which can be associated with either value for [Animacy]; that is, they are labile relative to their [Animacy] distinctions. To capture this, I assume that such roots are associated with an abstract [Animacy] feature [αAnimacy][78]. This specification still suffices to value the uninterpretable ***c*** feature in **κ** and thus results in nounhood. Note that we cannot assume that such roots are not intrinsically associated with a feature at all. If this was the case we would expect to find category-neutral behaviour, which is not the case. In what follows, I illustrate each possible instance of [Animacy] with an example.

Animate. [animate] entries like ***ohpokon*** 'ball' would look like as illustrated in (25):

(25)



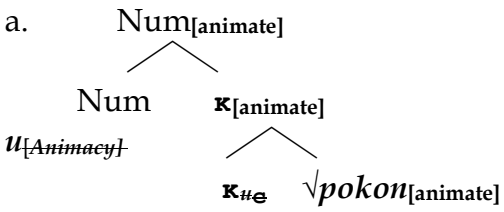
The [animate] root values the uninterpretable categorizing head and therefore the whole projection is animate.

[78] Alternatively, we might expect two lexical entries, such that each lexical entry is associated with a distinct value for animacy.

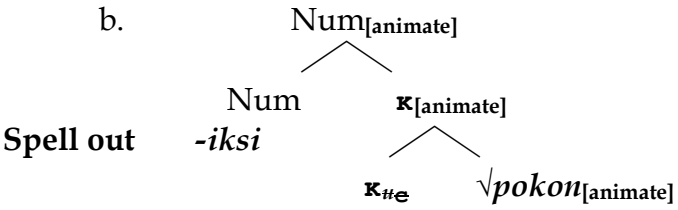
When an animate √noun combines with a plural marker the derivation is as follows. Recall that inflectional agreement utilizes the same feature-probing mechanism as re-categorization except that no new feature is assigned. The plural suffix selects for a √noun via an uninterpretable feature *u*[Animacy], as in (26)a. In this case, the valuation of this feature impacts the spell-out of the plural marker. That is, if Num is valued as [animate] then the appropriately specified plural marker is inserted. In other words, ***iksi*** spells out the valued feature associated with Num as in (26)b.

(26) ***pokoniksi*** 'balls (plural, animate)'

a.

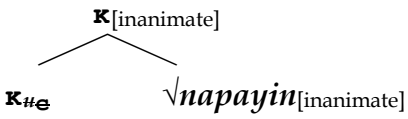


b.



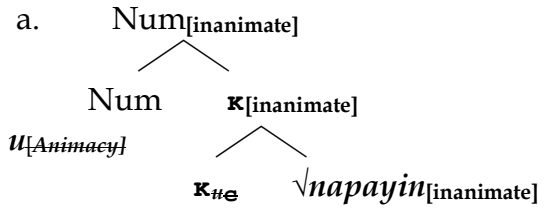
Inanimate. [inanimate] entries like ***napayin*** 'bread' would follow the same pattern, albeit with a different value:

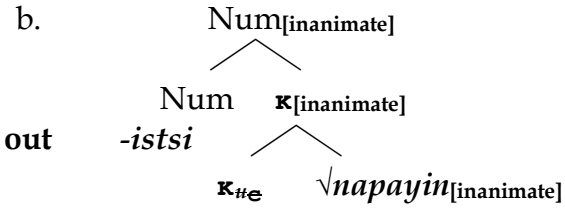
(27)



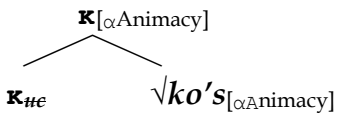
The [inanimate] root values the categorizing head κ_{uc} and therefore the whole projection is an inanimate √noun. In this case Num is valued as [inanimate], and then the appropriately specified plural marker is inserted. ***-istsi*** spells out the valued feature associated with Number as in (28):

(28) ***napayinstsi*** 'bread (plural, inanimate)'

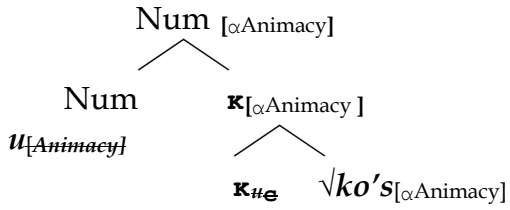
a. 

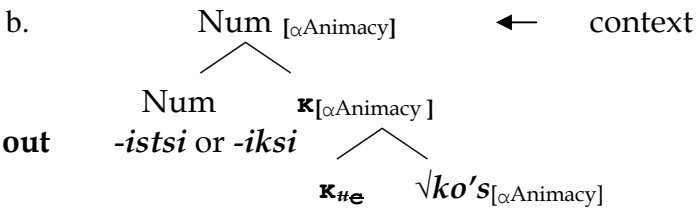
b. 

Labile nouns. Nouns labile in animacy, like ***ko's*** 'dish', would be associated with an abstract animacy feature [αAnimacy].

(29) 

In principle, such nouns could be either animate or inanimate. As described in section 2.3.2, naming of culturally novel items determines whether the entry is animate or inanimate. The same root may combine with either plural marker as illustrated in (30):

(30) a. 

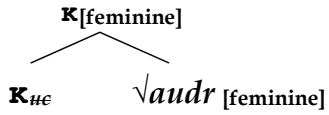
b. 

The issue of how the sensitivity to cultural context is factored into the derivation is left to further research.

Lithuanian √nouns. As we have seen in chapter 3, Lithuanian √nouns are intrinsically associated with a specification for [Gender]. In line with my proposal, I analyze such √nouns as follows: roots that carry intrinsic [Gender] value the uninterpretable feature of the categorizer.

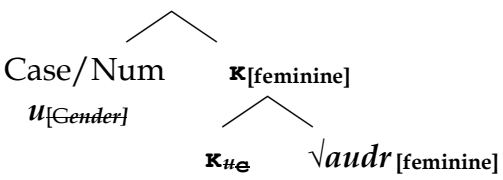
Feminine. For example, ***audr*** 'storm' is intrinsically [feminine].

(31)

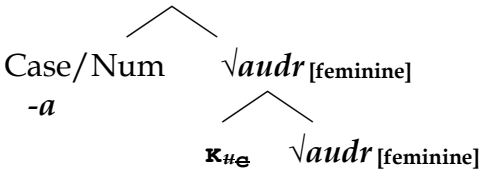


The categorizer κ_{uc} gets its value from the √noun: [feminine]. Then the √noun merges with nominal case/number inflection[79]:

(32) a.



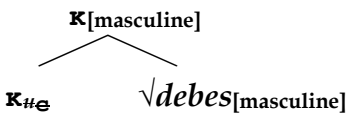
b.



Spell out

Masculine. [masculine] roots like ***debes*** 'cloud' follow the same pattern of categorization but with a distinct value:

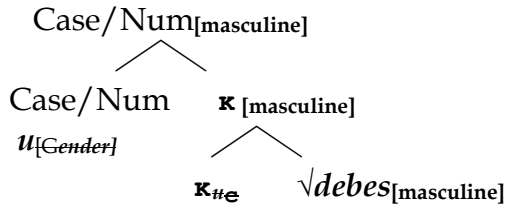
(33)



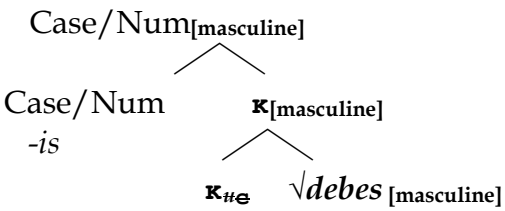
[79] Following Müller (2008), I assume that case/number form a single feature cluster in languages with syncretic morphemes.

The [masculine] root values the κ_{uc} and therefore the whole projection is a [masculine] √noun. The inflection for case and number would attach as in (34):

(34) a.



b.

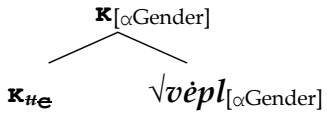


Spell out

Once the root values Case/number *u*[Gender] as masculine, inflection ***-is*** is spelled out.

Labile. Lastly, roots like ***vėpl*** 'klutz' would follow the same pattern with the third possible value, [αGender]:

(35)

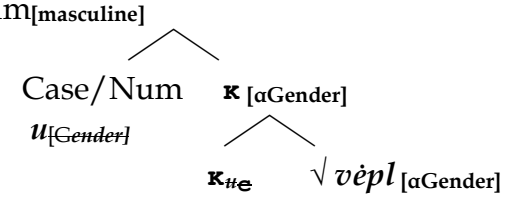


The [Gender] √noun values κ_{uc} and therefore the whole projection is [αGender]. In other words, the entry is nominal in that it is specified for [Gender], but the particular gender interepretation – either feminine or masculine - is determined by the discourse context. This works only for the subset of roots that specifically encode the pejorative evaluative opinion of the speaker (as discussed in chapter 3). The issue of how the sensitivity to speaker evaluation is factored into the derivation is left to further research.

The issue of inflection is tricky: there is no dedicated inflection for [αGender] in Lithuanian . √Nouns that are [αGender] can co-occur only with one inflection, namely ***a.*** This inflection is otherwise always associated with √nouns that are [feminine].
I hypothesize that "feminine" inflection is the spell-out of an αGender: i.e., it simply has no specification for gender, and therefore it is compatible with [feminine]. At this point

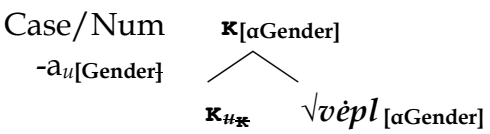
this is only a hypothesis that requires further evidence, but it has been observed that when an affix is shared by several classes, it encodes a default, unmarked feature (Noyer 2004). I am assuming therefore that the choice of [feminine] for common [Gender] is a sign that [feminine] indicates the unmarked subcategory. Note that vocabulary items must be compatible with the most features, i.e. when a root is selected from the entire root stock, the one that has more specific features is selected over the one that has more general feature, known as the Subset principle (Sauerland 1995). Masculine is specified as [masculine], but [Gender] is not specified for [feminine], [feminine] is, rather, the default spell out of [Gender] marking[80].

(36) a. Case/Num**[masculine]**



b. Case/Num**[αGender]** ← context

Spell out



The discourse context would fix whether the entry is to be interpreted as feminine or masculine. In terms of grammar, one can only infer the labile gender of these √nouns from the modifier agreement with them (i.e., from the inflection of an adjective), because the modifiers can be of either [feminine] or [masculine] gender (as discussed in chapter 3).

As summed up in table 33, Blackfoot and Lithuanian are similar in that they use category-specific features to set apart nouns, [Animacy] and [Gender] respectively, and category-specific suffixes are sensitive to the category-intrinsic feature.

[80] The view that one value of Gender is a default value has typological implications that need to be explored further. That there may be one default Gender value has been also suggested (but not elaborated further) for Amharic (Kramer 2009).

Table 33. √Noun-suffix agreement: Lithuanian versus Blackfoot

	√noun c	suffix *u*c1
Blackfoot	[animate]	*u*[animate]
	[inanimate]	*u*[inanimate]
	[Animacy]	*u*[animate] or *u*[inanimate]
Lithuanian	[feminine]	*u*[feminine]
	[masculine]	*u*[masculine]
	[Gender]	*u*[feminine]

The two languages diverge in cases where √nouns lack a particular subcategory and are labile with respect to a category (shaded in the table above). For √nouns labile in [Animacy], Blackfoot allows either [animate] or [inanimate] plural suffixes. Lithuanian uses the [feminine] inflection to spell-out nouns labile in [Gender] because feminine is the unmarked form, i. e. just [Gender], while masculine nouns are specified as [masculine][81].

One could therefore expect that [Gender] and [Animacy] have the same formal properties. Wiltschko (2009) shows that [Gender] and [Animacy] are used for classification of nouns in German and Blackfoot, and differ in their formal properties. Wiltschko concludes that they must be syntactically different, i.e. occupy different positions. The problem with this approach however is that even the ***same*** intrinsic features for the ***same*** category may not have the same formal properties. For example, German and Lithuanian both use [Gender] for classification of nouns, yet the Gender systems differ significantly in subcategories and in formal properties. German has neuter, masculine, feminine; Lithuanian has common, masculine, feminine. Common and neuter are not comparable in their properties. Common gender is used for a well-defined set of pejorative lexical entries that denote human animate entities, neuter is not restricted like this. German nominalizers are affiliated with a particular gender (Wiltschko 2009), while some Lithuanian nominalizers are affiliated with a particular gender and some are not (for more discussion on Lithuanian nominalizers see chapter

[81] The relationship between markedness and the behavior of labilve features needs to be explored further.

5). According to Wiltschko's criteria the formal differences in [Gender] would indicate that they occupy different syntactic positions whereas I assume that all nominal classificatory devices occupy the same syntactic position **κ**[82].

Next, I turn to the categorization of verbs in Blackfoot and Lithuanian.

Verbal category. Table 34 shows that Blackfoot and Lithuanian converge in the verbal feature ***c***:

Table 34. Blackfoot versus Lithuanian √verb *c*

	Blackfoot	Lithuanian
feature **c**	Transitivity	Transitivity

I have shown that [Transitivity] is the defining property of √verbs in Blackfoot and Lithuanian. I propose that the categorization structure for v is the thematic structure, i.e. how many participants or arguments a verb requires[83]. For the purposes of the study, I abstract away from the particulars of different types of arguments (e.g., GOAL, PATIENT and the like). Only the lack or absence of the internal argument is relevant to the discussion. Note, however, that the two languages differ in one subcategory of verbs: pseudo-intransitives versus concealed transitives. A great number of morphologically intransitive verbs are syntactically pseudo-intransitive in Blackfoot: they have an optional object, but crucially, the object, if present, is always an NP rather than a DP. Recall that Lithuanian concealed transitives (introduced in section 3.2.1.1) are unlike pseudo-intransitives: their objects are optional, yet they are the same as the objects of genuine transitives.

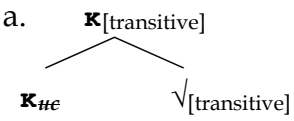
Blackfoot √verbs. [Transitivity] is the feature ***c*** of the category verb. √verbs may be associated with the following subcategories: [transitive], and [intransitive] (which split further into genuine intransitive and pseudo-intransitive by syntactic

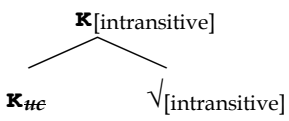
[82] This may or may not be a problem for the assumed Universal Spine. On the one hand, I will have to show that it is indeed the case that classificatory devices of nouns occupy the same position. On the other hand, there may be some internal layered hierarchy ('shells') of the classificatory devices. The interaction, if any, between noun classifiers and categorizers is a starting place for future research.

[83] Literature on the thematic structure and different kinds of thematic roles is huge, and can be traced back to Panini, estimated 600 or 300 BC (Katre, 1987). Among current work, see for example Grimshaw (1990) , Williams (1984) and Dowty (1989), among many others.

behaviour, but which are not differentiated by morphological marking). [transitive] encodes the obligatoriness of an object (e.g. ***hit*** requires an object). [intransitive] encodes the absence of an DP object (e.g., ***sleep*** has no object), although the NP object is available for the pseudo-intransitive subtype.

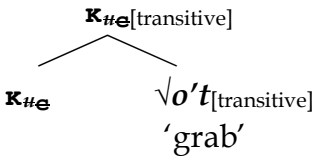
The uninterpretable κ_{uc} is valued by a root of a particular sub-category:

(37) a. 

b. 

If the categorizing head assigned [Transitivity] any √verb could be of any [Transitivity]. While this is true for many languages, including Cree, a related Algonquian language (Hirose 2000), it is not the case in Blackfoot (see section 2.4 of this dissertation). [Transitivity] values are uniquely associated with √verbs. The selectional tests based on transitivity suffixes support the claim: only √verbs that intrinsically encode [Transitivity] are selected by deriving and agreeing transitivity suffixes (see 2.4 for details). It follows that the categorizing head κ_{uc} is valued by √verbs. I will now illustrate each possible variant of [Transitivity] with an example.

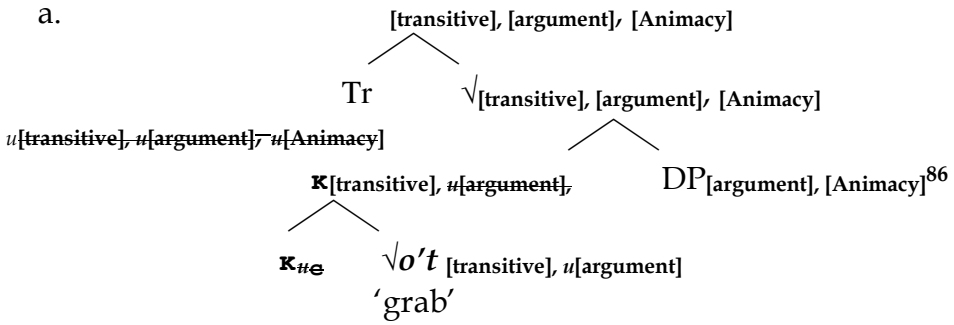
Transitive. [transitive] roots like ***o't*** 'grab' would value the κ_{uc} as follows:

(38) 

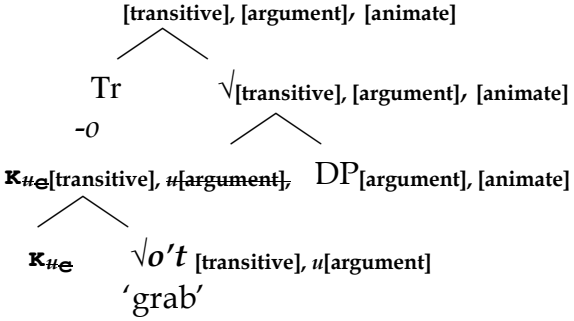
Once the κ_{uc} head is valued as [transitive], the whole projection is [transitive]. Next, the √verb merges with an internal DP argument, and then it is selected by an agreeing transitivity suffix. Recall that the Transitivity suffix for intrinsically transitive √verbs contains more than one feature: in addition to the feature ***c*** in agreement with the intrinsic transitivity of the root it also encodes additional information about the argument (discussed briefly in sections 2.1.2, and 2.2.1.1). Thus it is a cluster of features

<*u*[transitive], *u*[argument]>[84],[85]. The animacy of a particular argument decides the animacy marking of the verb, i.e. the verb itself does not encode [Animacy], the transitivity suffix that merges with the verb encodes the animacy of the object. The derivation is captured in (39)a, with an animate argument in (39)b and inanimate in (39)c:

(39) a.



b.



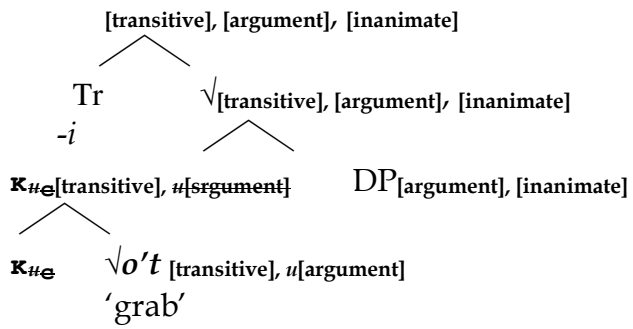
Spell out

[84] Building on Glougie (2000), where DPs are arguments, so [argument], while bare NPs are not, hence [nonargument].

[85] The suffix selects for the feature [transitive] that has already valued the categorizer **κ**. This is possible if one takes a view that formal features of the goal are copied onto the probe during Agree operation (Watanabe 2000).

[86] The tree has the following unresolved problem: a Determiner Phrase is a sister node to a root. On the one hand, this correctly captures the Blackfoot data as described in chapter 2, where I show that the root has inherent transitivity, i.e the ability to project an argument. On the other hand, I still need to explain how the DP is projected. To be able to account for the root- DP relation, one needs to first understand Blackfoot determiner system and noun phrases. I leave this significant issue for further research.

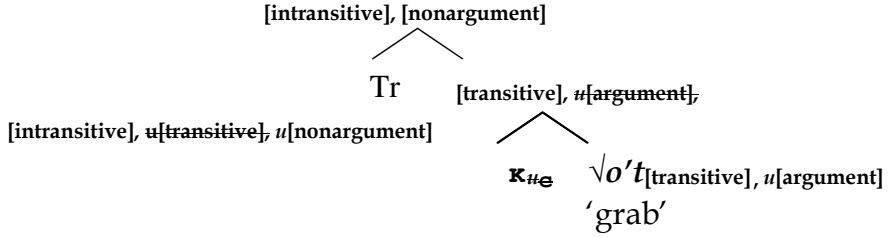
c.



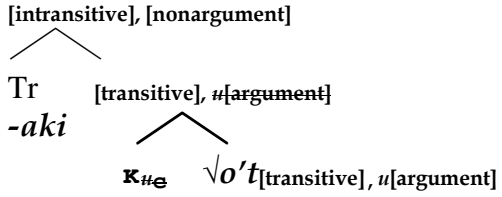
A transitive √verb may be selected by a deriving suffix ***-aki*** to form an intransitive, in this case a pseudo-intransitive[87]. The suffix ***-aki*** contains the features <[intransitive], *u*[transitive], *u*[nonargument]>. The suffix selects for an intrinsically [transitive] √verb and derives a morphologically intransitive verb, which behaves as a pseudo-intransitive syntactically and allows for only [nonargument] objects whose animacy is irrelevant, i.e. the object can be either animate or inanimate, yet its animacy would not be reflected on the verb. If a transitive √verb combines with ***-aki***, the derivation looks like the following (40):

(40)

a.



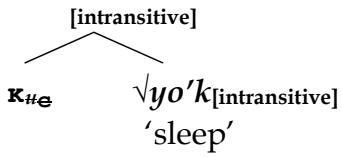
b.



Intransitive. Genuine intransitives [intransitive] roots like ***yo'k*** 'sleep' value the uninterpretable $\kappa_{u\mathbf{c}}$ as below:

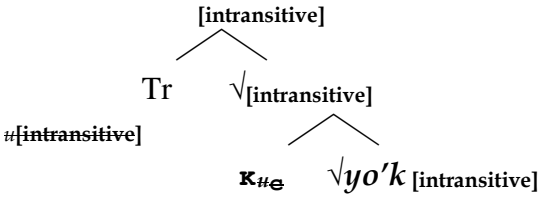
[87] As noted in 2.2.2.2, only the pseudo-intransitives are derived. I have yet to find a genuine intransitive that has been derived.

(41)



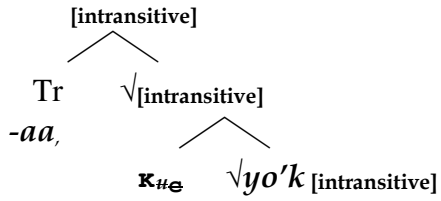
When the $\kappa_{u\kappa}$ head is valued as [intransitive], the whole projection becomes [intransitive]. Next, the intransitive √verb merges with a selecting transitivity suffix ***–aa*** which contains features <*u*[intransitive] >. The derivation is as in (42):

(42) a.



b.

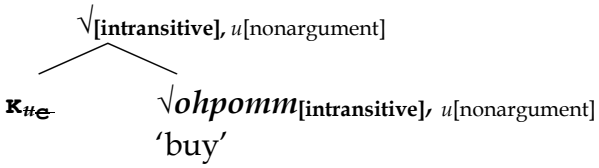
Spell out



Based on the judgements of my speaker, this particular √verb, ***yo'k***, cannot be derived into a transitive with the deriving suffixes ***at/atoo***. However, some intransitives do allow a derivation into transitives. In that case, a deriving suffix ***-at/atoo*** is used. The same suffix is used to derive transitives from the pseudo-intransitive subtype of intransitives, therefore this derivation is addressed in the section on pseudo-intransitives that follows immediately below.

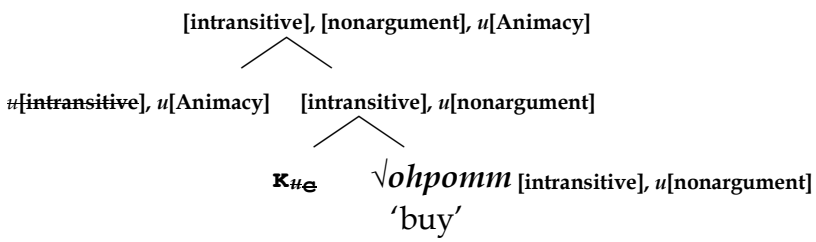
Intransitives. Pseudo-intransitives Lastly, the pseudo-intransitive subtype of intransitives, e.g., a √verb like ***ohpomm*** 'buy' values κ_{uc} as in (43) below:

(43)



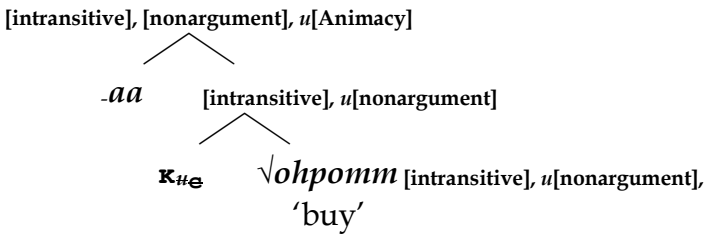
The pseudo-intransitive intransitive root will make the entire projection morphologically intransitive and syntactically pseudo-intransitive.
Next, the intransitive merges with a selecting transitivity suffix ***–aa*** which contains the feature <*u*[intransitive], *u*[Animacy] >. As mentioned before, the suffix can combine either with a pseudo-intransitive or an intransitive √verb because the inflections select for intrinsic intransitives as a subcategory, and not for the subtypes within intransitives. The derivation is as in (44):

(44) a.



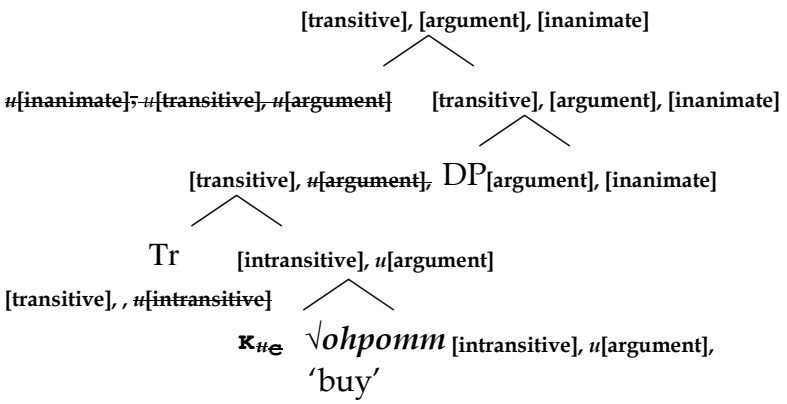
b.

Spell out



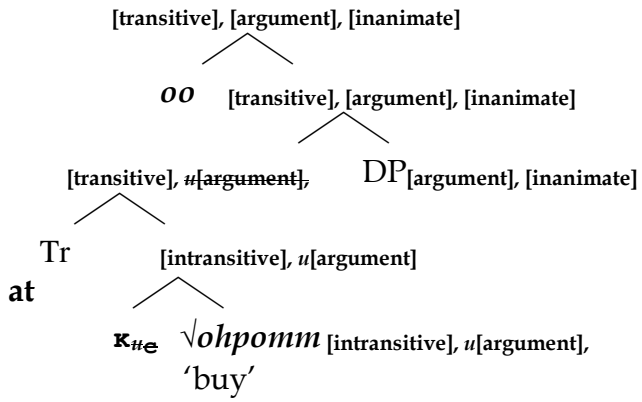
To derive a transitive from either a pseudo-transitive or an intransitive, one can use ***-at/atoo***. The suffix ***-atoo*** contains the features <[transitive], u[intransitive]>. Given that ***-atoo*** (transitive inanimate) differs from ***-at*** (transitive animate) only by ***–oo***, I conclude that this is a complex suffix: ***-oo*** signals the inanimacy of objects. It selects for an intransitive √verb and derives a transitive. Its animacy is in agreement with an inanimate DP. An example of derivation with ***-atoo*** is shown below:

(45) a.



b.

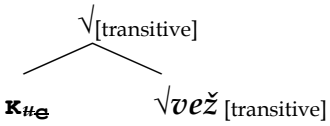
Spell out



Lithuanian √verbs. Like in Blackfoot, [Transitivity] is the feature ***c*** of the √verbs**.** The subcategories are [transitive] and [intransitive]. However, unlike Blackfoot, Lithuanian does not have transitivity suffixes which select for √verbs based on their intrinsic transitivity. The indicators of the intrinsic transitivity are the presence, absence or optionality of an object (discussed in 3.2.1.1).

Transitive. Consider for example, *vež* 'transport', which is an intrinsically [transitive] root. It values the uninterpretable $к_{u\subset}$:

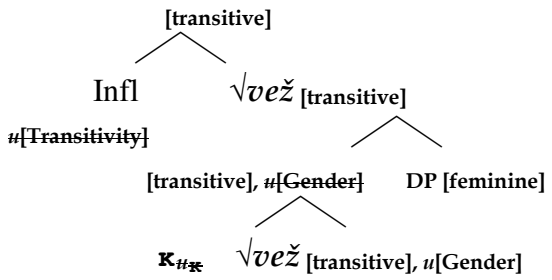
(46)



Next, the transitive √verb merges with an object and is selected by a tense and person suffix (only the features relevant to discussion are included), as in (47):

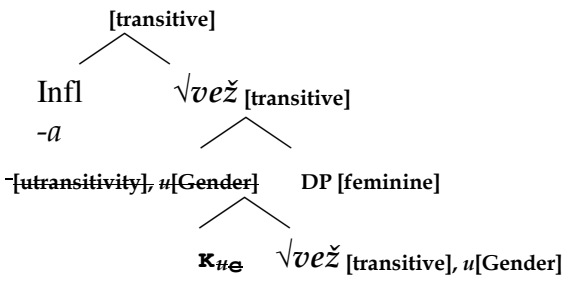
(47) ***veža*** 'he transports' (Pres.3sg)

a.



b.

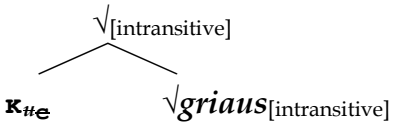
Spell out



The √verb selects for a noun which may be of any gender (and it is usually in Accusative case[88]). For the sake of clarity, I put in features of a [feminine] noun, but it can be a noun of any gender. Note that the tense suffix ***-a***, present third singular in this case, selects for a verb of any transitivity, i.e. is selecting for a category rather than subcategory. This contrasts with Blackfoot where transitivity suffixes select for subcategories.

Intransitive [intransitive] entries like ***griaus*** 'thunder' follow the same pattern of categorization but with a different result:

(48)

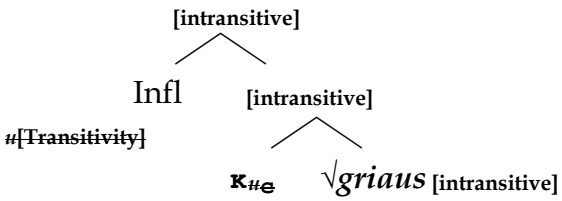


The [intransitive] √verb values the κ*u*c and therefore the whole projection is [intransitive]. Then the √verb is selected by a tense/person suffix:

[88] The object may be a noun in case other than Accusative, and it may even be clausal object. Other properties of the object are irrelevant for the question in focus, namely root categorization.

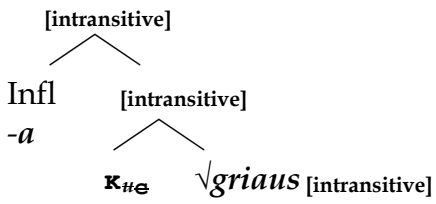
(49) *griaudžia*[89] (Pres.3sg)

a.



b.

Spell out



Labile verbs. I assume that labile verbs are concealed transitives in Lithuanian (cf. Hale and Keyser 2002). The objects of the labile verbs are no different than the objects of the transitive verbs:

(50) Transitive (genuine transitive)

a. *Ona gaudo.
On-a gaud-o
Ann –FEM.NOM.SG chase-PRES.3SG
Intended: 'Ann is chasing.'

b. Ona gaudo avį.
On-a gaud-o av-į
Ann –FEM.NOM.SG chase-PRES.3SG sheep-FEM.ACC.SG
'Ann is chasing a sheep.'

(51) Labile (concealed transitive)

a. Ona gieda.
Ann -a gied-a
Ann- FEM.NOM.SG chant- PRES.3SG
'Ann is chanting.'

[89] s-dž alternations are due to phonology.

b. Ona gieda giesmę.
Ann -a gied-a gie-sm-ę
Ann- FEM.NOM.SG chant- PRES.3SG chant –NOMZ-FEM.ACC.SG
'Ann is chanting a chant.'

As is clear from examples (50)-(51), the genuine transitive ***gaudo*** 'chase' and concealed transitive ***gieda*** 'chant' have the object that is the same in its morphosyntactic characteristics: a feminine noun in accusative case, singular. If the two verbs were different in their transitivity, then it would be plausible to expect a difference in the morphosyntactic characteristics of the object (like in Blackfoot). This leads me to conclude that genuine transitives and concealed transitives fall into the same subcategory of transitive verbs in Lithuanian. Therefore, the derivation of concealed transitives is the same as that of genuine transitives, which have already been described.

In sum, Lithuanian and Blackfoot make use of the same feature **c** for √verb, namely [Transitivity]. The languages differ in that verbal subcategories in Blackfoot are revealed through interaction with transitivity suffixes, while Lithuanian lacks selecting suffixes that would reveal the subcategories of the √verb. The subcategories are only known through the presence, absence and optionality of the object; tense/person suffixes that select for √verbs select only for the category verb rather than for its subcategories. Table 35 highlights the similarities and the differences.

Table 35. √Verb-suffix agreement: Lithuanian versus Blackfoot

	√verb c	**suffix *u*c**
		selecting transitivity suffix
Blackfoot	[transitive]	*u*[transitive]
	[intransitive]	*u*[intransitive]
		deriving transitivity suffix
	[transitive]	*u*[transitive], [intransitive]
	[intransitive]	*u*[intransitive], [transitive]
		selecting tense/person inflection
Lithuanian	[transitive]	*u*[Transitivity]
	[intransitive]	*u*[Transitivity]

Thus, as the table reveals, although the two languages share [Transitivity] as the categorial feature for verbs, the particular incarnations of transitivity are distinct. Specifically, the two languages differ in the selectional properties of the suffixes and in the expression of verbal transitivity itself. Every verb in Blackfoot contains overt transitivity suffixes that interact with the transitivity intrinsic to the root, i.e. with the subcategory of the root; while every Lithuanian verb has a tense/person suffix that selects for the verb category rather than for a specific transitivity subcategory.

Adjective category. Blackfoot and Lithuanian also differ with respect to the adjective class. Recall that Blackfoot lacks a class of adjectives, while Lithuanian does not (chapter 2-3). I claim that the difference is due to the absence or presence of a category-intrinsic selectable feature ***c*** . That is, Lithuanian has such a feature, but Blackfoot does not as contrasted in table 36.

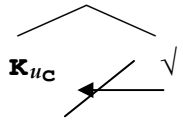
Table 36. Blackfoot versus Lithuanian √attributive *c*

	Blackfoot	**Lithuanian**
content of feature ***c***	n.a.	Degree

In Lithuanian, the feature ***c*** is [Degree]: √adjectives split into [gradable] or [non-gradable].

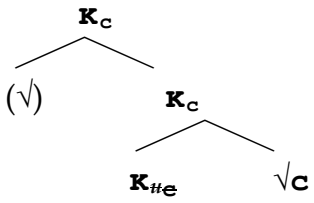
Blackfoot attributives. Blackfoot √nouns and √verbs contain a feature ***c***, [Animacy] and [Transitivity], respectively. In other words, √nouns and √verbs are intrinsically associated with features that serve to value the uninterpretable feature associated with the categorizing position **κ**. I have argued that Blackfoot √attributives do not contain any kind of feature that would serve to be the content of $\boldsymbol{\kappa}_{u\mathbf{c}}$. In other words, √attributives lack ***c***. Due to the lack of the feature ***c***, Blackfoot √attributives cannot be inserted into the categorization structure. Otherwise the uninterpretable feature associated with $\boldsymbol{\kappa}_{u\mathbf{c}}$ would remain uninterpretable and the derivation would crash. As a result, attributives cannot take the root slot.

(52)



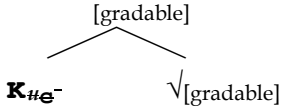
The absence of ***c*** on √attributives is also responsible for the fact that √attributives can not combine with categorial suffixes: feature-driven c-selection does not apply. Consequently, the only position they can surface in is that of a modifier, where ***c***-selection is irrelevant. (53) illustrates how an √attributive is grammatical in a construction where c-selection has already applied to a root, and the c-selecting suffixes do not interact with the category-less √attributive[90]:

(53)

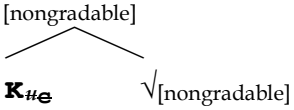


Lithuanian √adjectives. In contrast to Blackfoot, Lithuanian has a class of adjectives. √adjectives have feature ***c***: [Degree].

(54) a.



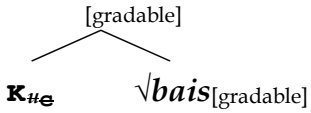
b.



Lithuanian √adjectives fall into [gradable] and [nongradable], as I have shown in chapter 3. Both subcategories are selected by case/number inflection, pronominal affixes and a nominalzer; but only the [gradable] subcategory is selected by comparative suffixes (for details, see 3.2.3).

Gradable. A [gradable] √adjective like *bais* 'horrible' provides valuation for the $\kappa_{u\mathrm{C}}$:

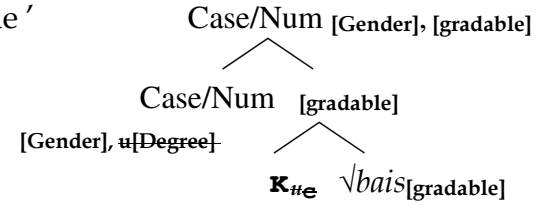
(55)



[90] Except for a handful fossilized forms with ***–ssi/ii***.

Then the √***bais*** is affixed with a case/number suffix for either masculine or feminine gender, depending on the gender of the modified noun:

(56) a. ***bais*** 'horrible'



b. ***baisus*** 'horrible (masc.sg.nom)'

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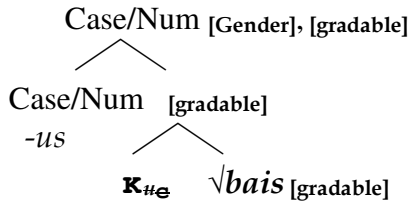
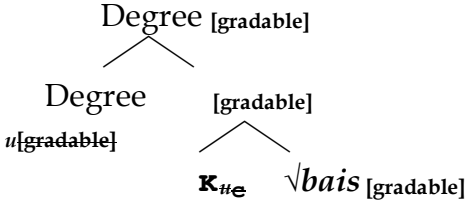


In this case, the case/number suffix selects for a root with the intrinsic feature [Degree].When a comparative suffix ***-esn*** selects for an √adjective, the √adjective has to be [gradable][91]:

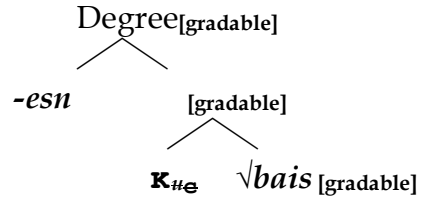
(57) ***baisesnis*** 'more horrible' (masc.sg.nom)

a.



b.

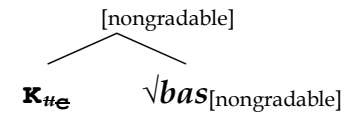
Spell out



Non-gradable. A [nongradable] √adjective like ***bas*** 'bare-foot' values the κ_{uC} in the same manner as a [gradable] one:

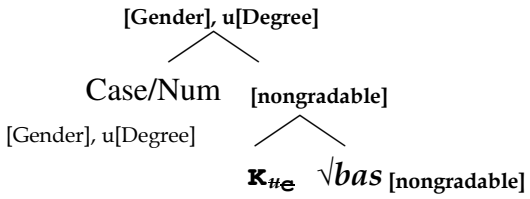
[91] A case/number inflection used with comparative stems is different from the case/number inflection used with simplex adjectives, but this does not bear on the analysis of categorization.

(58)



Then the √***bas*** is affixed with a case/number suffix just as its [gradable] equivalent is:

(59) a. ***bas*** 'barefoot'



b. ***basas*** 'barefoot (masc.sg.nom)'

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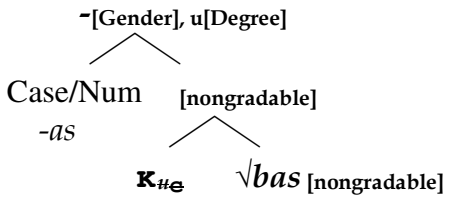


In the √adjective category of Lithuanian, we have captured how distinct suffixes select for different guises of a Root: case/number suffix selects for category, i.e. [Degree], while comparative suffix selects for subcategory, [gradable]. The summary is in table 37.

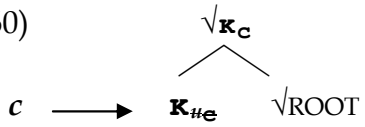
Table 37. Lithuanian √adjective c

	√**adjective c**	**suffix** *u***c**
Blackfoot	n.a.	**n.a.**
		Case/Num
Lithuanian	[gradable]	*u*[Degree]
	[nongradable]	*u*[Degree]
		Comparative
		u[gradable]

4.3.2.2 ROOTS: Lithuanian

Since Blackfoot lacks ROOTS, I can only show the Lithuanian incarnation of this variety. I argue that ROOTS are best analyzed as lacking an intrinsic categorizing feature ***c***. As such they cannot value the unvalued *u**c*** feature associated with **κ** . Instead, the *u**c*** on **κ** must be valued by some other means. I argue that valuation in this case is done via morphological marking (including zero derivation); what I call **m-valuation**. In other words, the feature ***c*** is associated with κ_{uc} overtly or covertly. This is schematized in (60), where the arrow indicates that feature ***c*** values κ_{uc} independently of the root.

(60)



where ***c*** = [Gender], [Transitivity] or [Degree]

The ROOT and the feature ***c*** enter syntax independently. There is nothing in syntax that would prevent a ROOT from combining with the feature ***c*** from ***any*** category. In this case, any combination of ROOT -***c*** is possible. I propose that this accounts for the category-neutral behaviour of ROOTS. I will now illustrate my proposal with the category-neutral ROOT √***šiurp*** 'shiver', which may morph into the nominal, verbal or adjectival category (for more data on Lithuanian category-neutral ROOTS see 3.1.2).

Nominal √*šiurp*. In principle, in the case of ROOTS, one should be able to assign any subcategory of [Gender] to the same ROOT, [feminine] or [masculine]. There are entries where this is the case, and there are entries where only one [Gender] is assigned. I leave the particulars of how the choice of [Gender] is resolved to further research[92]. In the case of a ROOT like √***šiurp*** 'shivers,' either [feminine] or [masculine] can be assigned. Moreover, √***šiurp*** 'shivers' can be of more than one declension of a particular gender as illustrated in (61):

[92] The approach of Ferrari-Bridgers (2007) may yield the fullest account. Based on Italian, she suggests that a particular choice of gender for a noun will be depend on a constellation of semantic, morphosyntactic and phonological factors.

(61) a. Mane šiurpa ima.
man-e šiurp-a im-a
1SG-ACC.SG shiver-FEM.NOM.SG take-3SG.PRES
'I got shivers.'

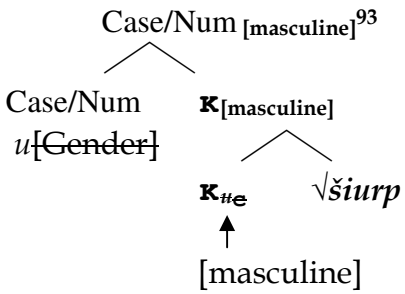
b. Mane šiurpas ima.
man-e šiurp-as im-a
1SG-ACC.SG shiver-MASC.NOM.SG take-3SG.PRES
'I got shivers.'

c. Kokia šiurpė! Apsikirpk.
kok-ia šiurp-ė ap -si -kirp-k
what- FEM.NOM.SG shiver- FEM.NOM.SG PREF-REFL-cut-IMP
'What a mess of a hairstyle! Get a haircut.'

Examples in (a) and (b) mean the same, but differ in their gender. Examples (a) and (c) are of the same gender, but differ in their meaning, though the meaning is related. The English translation for the example (c) fails to transmit the meaning that the hair looks messy as if it has stood up due to having shivers.

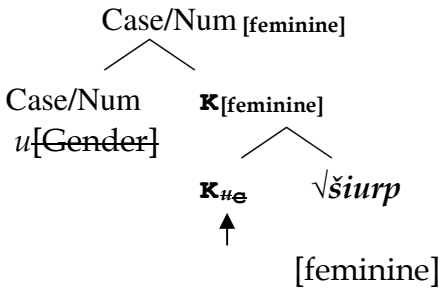
When √***šiurp*** 'shivers' is assigned [Gender], the derivation is as below:

(62) a. [masculine]

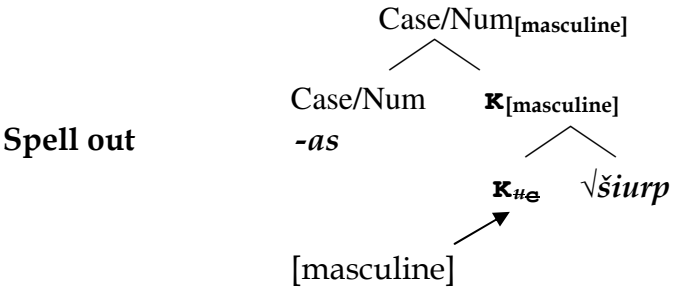


93 I represent the portmanteau morpheme as one head rather than three distinct heads because the hierarchical order of Case and Number remains to be established, and the discussion is irrelevant to the issue at hand.

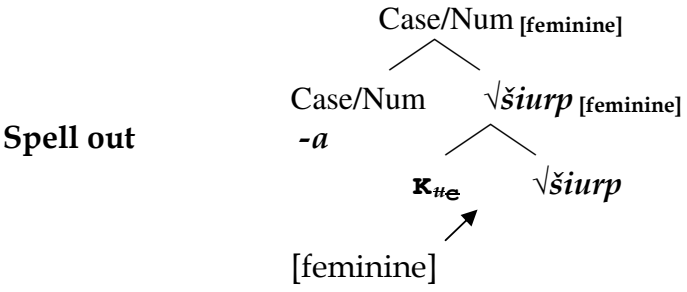
b. [feminine]



c. ***šiurpas*** 'shivers, horror(masc.sg.nom)'



d. ***šiurpa*** 'shivers, horror (fem.sg.nom)'



Verbal √***šiurp.*** In the case of ROOTS, one should be able to assign any transitivity value to the same ROOT, [transitive] or [intransitive]. There are entries where this is the case, and there are entries where only one [Transitivity] value is assigned. As with the [Gender] of nominals, I leave the particulars of how the choice of [Transitivity] is resolved to further research.

In the case of √***šiurp*** 'shivers' both [transitive] and [intransitive] are attested. As discussed in the previous section, Lithuanian, unlike Blackfoot, does not have transitivity suffixes that reveal the transitivity associated with roots. Therefore the

transitive/intransitive use of √***šiurp*** can only be seen at clause level with and without object:

(63) a. Nakties vėsumas ***šiurp***ia pečius.
nakt-ies vės-um-as
night-FEM.GEN.SG cool-NOMZ-MASC.NOM.SG.

...šiurp-ia peč-ius
shiver-PRES.3SG shoulder-MASC.SG.NOM

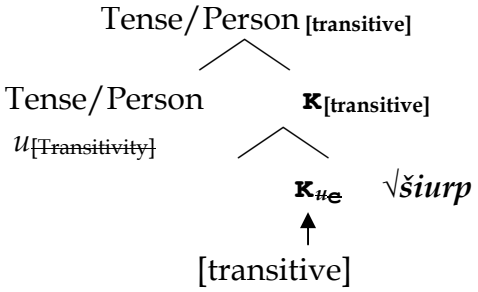
Lit.: 'The coolness of the night shivers the shoulders.'
'The coolness of the night makes the shoulders shiver.'

b. Kūnas ***šiurp****sta.*
kūn-as ***šiurp-***sta
body-MASC.SG.NOM shiver-PRES.3SG
'The body is shivering.'

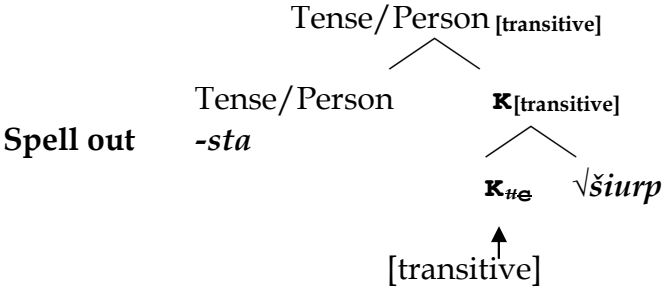
Since transitivity is covert, derivations show only that √***šiurp*** can be selected by a tense/person suffix (only the relevant transitivity features provided):

(64)

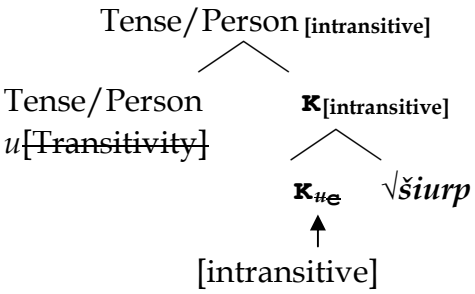
a. ***šiurpia*** (pres.sg.transitive)



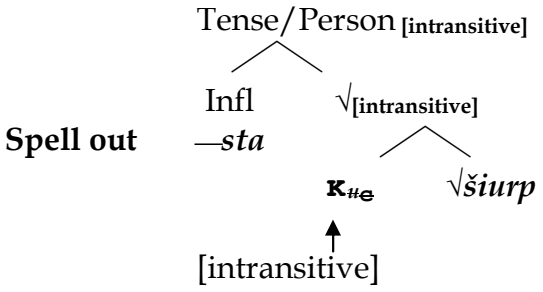
b.



c.



d. ***šiurpsta*** (pres.sg.intransitive)



In (64) a-b, I show the derivation of a transitive verb with √***šiurp***, while (64) c-d show the derivation of an intransitive verb with the same ROOT.

Adjective √*šiurp*. Lastly, the same ROOT √***šiurp*** may also be used as an adjective. It belongs to a gradable subcategory[94]. It may be of either gender, as illustrated in (65), where (a) is an example of a masculine use of the adjective, and (b) is an example of a feminine use of the adjective:

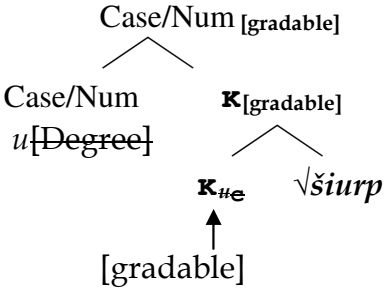
(65) a. Vaikus nustebino šiurpus vaizdas.
vaik-us nustebin-o šiurp-us vaizd-as
child-MASC.ACC.PL surprise-PAST.3PL shiver-MASC.NOM.SG view- MASC.NOM.SG
'The children were surprised by a horrible view.'

[94] To my knowledge, there is no variation in gradability with ROOTS used as adjectives, either a given root is gradable or not. I have to address the issue of how gradbility differs from either transitivity or gender in the sense which can show variation in subcategorization of the same ROOT.

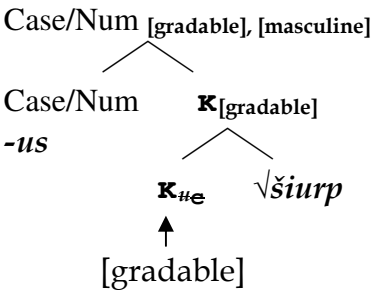
b. Vaikus nustebino šiurpi ragana.
vaik-us nustebin-o šiurp-i ragan-a
child-MASC.ACC.PL surprise-PAST.3PL shiver-FEM.NOM.SG witch- FEM.NOM.SG
'The children were surprised by a horrible witch.'

The derivation process of an adjective with √***šiurp*** is like in (66):

(66)

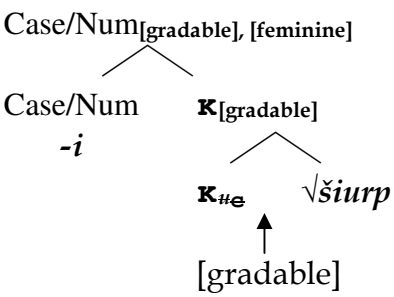


b.



Spell out

b.



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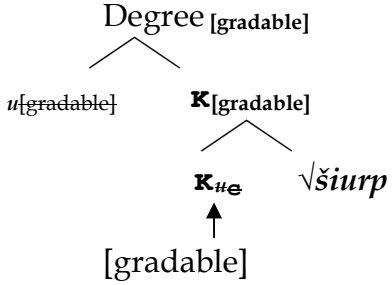
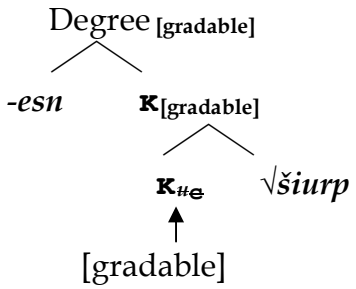
The ROOT may also be selected by a comparative suffix ***-esn***, as illustrated in (67):

(67)

a.



b.



4.4 Alternative approaches

In this section, I examine several alternative approaches to categorization and explain why these approaches cannot account for the patterns of root categorization in Blackfoot and Lithuanian.

Traditional approaches. The generalizations about Blackfoot and Lithuanian roots appear to be identical to the classic subdivision into parts of speech where verbs are characterized as events, nouns as entities and adjectives as properties (e.g., Dionysius Thrax in Robins 1997:41). I transcend the traditional observations on two counts. On the one hand, I establish language-specific morphosyntactic criteria to identify categories. In particular, I show that category-specific suffixes may be sensitive to the category intrinsic to a root. In other words, suffixes may c-select for certain roots. On the other hand, my proposal has been couched within the universalist approach towards natural language. Consequently, my analysis accounts for the variation we observe in the patterns of categorization of roots. I propose that categorization is driven by abstract features such as [Animacy], [Gender], [Transitivity] and [Degree].

Syntactic approaches From a syntactic perspective, categorial identity is defined by its distribution (Chomsky 1970, Jackendoff 1977, Abney 1987, among others). In other words, "each category has a defining distributional property" (Déchaine 1993:32).

Nouns are found in syntactic environments particular to nouns, such as being selected by a determiner or taking subject position in a clause. Verbs inflect for tense. Adverbs and adjectives are gradable. Of course, there are language-specific variations: some languages lack determiners, in which case demonstratives or case inflection may be used; some languages lack tense, in which case there may be evidence for zero tense or other verb-particular environments. Details of the cross-linguistic variation notwithstanding the essence of the proposal remains the same: the syntactic approach separates category from lexical entry. The load of categorization is shifted to the syntactic structure. Structural constraints determine traditional lexical properties such as syntactic category type and argument structure (Marantz 1997, Borer 2005, among others).

In line with the syntactic approach, I have used language-specific distributional tests to single out roots of particular categories in Blackfoot and Lithuanian. If the structural constraints alone determined the category, then all roots should be able to surface in all categories. At the very least we would expect a subset of roots to be ROOTS. As we have seen however, this is not the case in Blackfoot; and in Lithuanian we have found both roots and ROOTS. To complement the syntactic derivation, I have introduced the feature ***c***. The variation in the content of ***c*** and the locus of its merge allows for the variation in the root types.

Feature-driven approaches. Minimalist feature-driven approaches towards categorization are still few and are being developed. The scarcity of a discussion reflects the state of affairs in the theory of universal and language specific features. The study on inventory of features, their bundling and content is still in its infancy, and a part of an active research agenda (Adger & Svenonius 2009, Embick & Noyer 2009, Müller 2008).

Within the generative school of thought there are two recent attempts to develop a feature-driven account for categorization of roots: Lowenstamm (2008) and Kramer (2009). Both authors have explored the categorization of nouns. Both assume that (i)

roots are part of the categorization structure where the categorizing head ***n*** merges with a root; (ii) nounhood is defined by [Gender]. On the basis of data from Yiddish (Germanic) and French (Romance), Lowenstamm (2008) argues that [Gender] is the content of ***n***: the merge with ***n*** renders a root nominal.

Kramer (2009), based on data from Amharic (South Semitic), distinguishes between grammatical and natural Gender. Natural gender is based on world knowledge and is the content of ***n***. Grammatical gender is part of the root and 'emerges when there is no natural gender' (Kramer 2009:128).

My account of Blackfoot and Lithuanian converges with that of Lowenstamm (2008) and Kramer (2009) in viewing [Gender] as a feature intrinsic to nouns. However, I diverge from both in two respects: first, [Gender] is one of the possible nounhood features, but not the only one. For example, [Animacy] can be a nounhood-defining feature, too. Second, and more importantly, Lowenstamm (2008) assumes that roots are category-neutral, i.e. ROOTS. Kramer (2009) does not distinguish between roots and ROOTS either. For her, [Gender] spans two layers – ***n*** and the root itself - and the interaction between the two layers results in particular instantiations of gender specification for √nouns. Moreover, neither Lowenstamm (2008) nor Kramer (2009) offer an account on how the categories of verbs and adjectives come about. In that sense, their account is partial, and it remains to be seen how their system works if applied to all categories.

There is yet another recent analysis of patterns of noun categorization, namely that of Ferrari-Bridgers (2007), who also addressed noun classification in relation to [Gender] based on Italian data. Her approach differs significantly both from Kramer (2009) and Lowenstamm (2008), and therefore it is discussed separately. Ferrari-Bridgers' views, implicit and explicit, are radically opposite to the ones advocated in this study. First and foremost, she states that Gender is assigned to nouns, while I argue that Gender (and Animacy) is the feature that gives rise to nounhood. In other words, for Ferrari-Bridgers (2007) nounhood is a primitive, Gender is a construct. The problem

is that she does not define what being a noun entails. She argues that only 2% of Gender assignment is unpredictable, while the rest can be predicted based on a combination of semantic, lexical, morphological and phonological features. Note that the term 'features' is used in several senses here, referring to abstract meaning, ontological meaning, particulars of derivational rules and phonological features of sound (and even phonotactics). Here are some examples, of particular features that Ferrari-Bridgers (2007) proposes:

> -[±human] addresses whether the entry is human or not;
> -lexical [±innercore] relates to whether the entry is of Italian inner stock subclass versus [±loan], a loan from another language;
> -[±simple] applies to morphologically simplex versus derived entries;
> -[±plural] takes into account number, plural versus singular

Thus the conspiracy of all these features from distinct subsystems produces a particular [Gender] marking. If these factors are taken into account the accuracy of prediction for [Gender] assignment stated by Ferrari-Bridgers (2007) is very high, a desirable result. However it is not clear on the basis of what the features listed interact with each other until nounhood itself is defined.

Another example of a feature-driven approach is that of Lieber (1990, 2004). She addresses the issue of categorization in the context of word formation from the point of view of lexical semantics. Lieber (2004) grounds her discussion - mostly on word formation and only indirectly on categories - in cognitive primitives. She proposes the following basic division between nouns and verbs (adjectives forming a subset of verbs):

(68)

SUBSTANCES/THINGS/ESSENCES		SITUATIONS	
[+material]	[-material]	[+dynamic]	[-dynamic]
chair	time	kiss	be
man	fact	eat	happy

Lieber 2004:26

The two features [material] and [dynamic] are not mutually exclusive and can form clusters (*skeletons*, in Lieber's terms). The different combinations of features form different subcategories within the nominal and verbal domains. Particular affixes are sensitive to particular clusters of features: selection and derivation are driven by feature matching (*co-indexation*, in Lieber's terms).

Lieber's (2004) approach is close to the account developed in this study. I, too, use feature clusters and a feature driven derivation to account for the categoriazation of Blackfoot and Lithuanian roots. Yet Lieber's account would not fully capture the patterns we have observed in Blackfoot and Lithuanian. My first concern is the assumption that one can subcategorize nouns relying solely on one feature, [material]. Maybe it is possible for a language like English, the only source of Lieber's data; but it would not work for either Blackfoot or Lithuanian. The feature [material] does not play a role: it would not capture how affixes in either Lithuanian or Blackfoot select for relevant roots based on their intrinsic animacy or gender respectively. In other words, an account of subcategorization patterns across languages has to allow for more than one feature defining nounhood.

Under [dynamic], Lieber includes adjectives [-dynamic] and verbs [+dynamic]. This is an intuitively appealing account from a semantic point of view, and, on a more abstract level, could probably work for both Blackfoot and Lithuanian verbs. However, it is hard to tie [dynamic] to any particular morphosyntactic characteristic. Unlike Transitivity, which is prominently encoded by Blackfoot affixes, dynamicity is not expressed morphosyntactically (cf. Ritter & Rosen 2009, who show how in Blackfoot distinct transitivity suffixes do not vary in dynamicity). In addition, the selecting and deriving affixes are more sensitive to transitivity than to dynamicity specification: one can find [-dynamic] roots both in the verbal (e.g., ***ksimsst*** 'think') and attributive (e.g., ***sok*** 'good') domains, but only √verbs can combine with transitivity suffixes.

Furthermore, I find it problematic that [-dynamic] is a negative definition of adjectivehood, i.e. an adjective is not expected to be [+dynamic]. With respect to

Lithuanian, √adjectives are better defined as either [nongradable] or [gradable] as it is a prominent and selectable feature particular to √adjectives.

Finally, Lieber's (2004) account has nothing to say about ROOTS: such a possibility is not contemplated. In contrast to Lowenstamm (2008) and Kramer (2009), who focus more on ROOTS, Lieber (2004) focuses chiefly on roots. The closest she comes to talking about category-neutrality is in terms of polysemy when the meaning becomes underdetermined due to vastly abstract semantic content.

Interface approaches. To my knowledge, there is only one feature-driven account that covers all lexical categories (Josefsson 1998). In her account of Swedish (Germanic) Josefsson argues that word classes in Swedish are a property of inflection (1998:29). Josefsson proposes that word classes prototypically match major ontological categories, such as [THING] for n, [EVENT] for v, [PROPERTY] for a (1998:35). The ontological categories are assumed based on cognitive models by Jackendoff (1985) and Lakoff (1987) who posit that we understand and think of the world in idealized abstract categories. In Swedish, these ontological categories are not intrinsic to particular sets of roots (like in Blackfoot), but are loosely associated with concepts expressed by roots, while roots oscillate between various ontological possibilities (what allows for these oscillations is not entirely clear). Crucially, "the affixation of inflectional morphology downloads the meaning of the word into one of those domains. Nominal inflection yields the Thing perspective, verbal morphology yields the Event perspective etc." (Josefsson 1998: 36-37). So a nominal like ***häst*** 'horse' is derived as follows:

(69) N^0 [THING [#Thing:häst#]]

häst [#Thing:häst#] N^0[THING] Josefsson 1998: 37

Entities enclosed by #..# refer to the actual word, while ***häst*** 'horse' refers to a linguistic object. Once the categorizing inflection is attached, the object is classified as noun. Basically, the 'thingness' of the inflection agrees with the 'thingness' of the lexical entry.

In this sense, Josefsson's proposal is similar to the feature-driven agreement proposed in this thesis.

If the root is a prototypical verb, such as *spring* 'run' and is used as a noun, nominalization occurs:

(70) N^0 [THING [#Event: spring#]]

spring [#Event: spring#] N^0[THING] Josefsson 1998: 38

In this case, 'THING' of the nominal inflection overrides the 'event' associated with the root. Thus, for Josefsson, inflectional morphology derives categorial classes. In other words, the boundary between derivation and inflection is blurred. The difference between inflectional and derivational affixes lies in that only the derivational suffixes are sensitive to Event subtypes (state, acitivity and the like) and the Number of Thing (mass, count).

Even this crude summary of Josefsson's (1998) account shows significant overlaps with the account proposed in this thesis. Both accounts assume categorization structure and some sort of feature necessary for categorial classification (cf. Blackfoot Animacy versus Swedish Thing, Transitivity versus Event). However, Josefsson addresses only the Swedish data and does not contemplate typological variation. Her account would not extend to the Blackfoot facts: such as the lack of what she calls *oscillation* between categories, and *selecting* rather then *deriving* categorial morphology. Lithuanian inflections are not *deriving* either, even though there is a subset of ROOTS that exhibits category-neutral behaviour.

4.5 Conclusions and predictions

The descriptive generalizations of the classification of Blackfoot and Lithuanian roots have been cast within a feature-driven syntax. Using categorization structure and the feature ***c***, I have shown how the categorization of roots and ROOTS can be implemented. Specifically, I argued that the feature ***c*** may merge with roots either prior to syntax or in syntax. When ***c*** forms a bundle with roots prior to syntax in the **Vocabulary**, these roots enter syntax as categorized units and value the uninterpretable feature ***c*** hosted by the categorizing head **κ**. Conversely, ***c*** can merge with the categorizing head first, to value its uninterpretable feature ***c.*** Next, ROOTS merge with the valued category head. Thus, the categorial affiliation of roots is fixed: they belong to one category because they have formed an atom prior to entering syntax. The categorial affiliation of ROOTS is malleable: it depends on what feature ***c*** has merged with the categorizing head $\boldsymbol{\kappa}_{uc}$. The fact that Blackfoot roots follow one of the categorization patterns, and Lithuanian utilizes both patterns is an argument in favour of the proposed categorization mechanism, i.e., both patterns can be found within and across languages. Further evidence is required to show that the feature-driven categorization can be verified intra-linguistically, independently of the processes pertaining to roots.

Intra-linguistically, I predict that independent evidence for the feature **c** can be obtained through analysis of re-categorization processes. If the feature ***c*** is intrinsic to a particular category, it would be reasonable to expect to find the same feature elsewhere in the grammar. It is plausible to expect to find the feature ***c*** in re-categorization environments assuming that a shift in category entails the shift from one category intrinsic feature ***c1*** into a feature ***c2*** intrinsic to another, as discussed in 4.2. If Blackfoot nominal feature ***c*** is [Animacy] then nominalization should entail adding [Animacy] to verbs. The nominal feature ***c*** in Lithuanian is [Gender] and therefore nominalization should add [Gender] to verbs. The verb-intrinsic feature in Blackfoot and Lithuanian is [Transitivity] so

verbalization should endow nouns with [Transitivity]. Blackfoot attributives lack an intrinsic feature ***c***, and therefore re-categorization into the attributive class should not be possible. There simply are no means to do it: a derivational morpheme that would re-categorize nouns or verbs into attributives would have to add some feature ***c*** intrinsic to attributives. Given that there is no such feature ***c***, re-categorization should be impossible. Finally, Lithuanian deverbal and denominal adjectives should obtain [Degree]. I investigate these predictions in detail in chapter 5.

Chapter 5 Re-categorization in Blackfoot and Lithuanian

This chapter explores the morpho-syntax of re-categorization - overt or covert shifts from one category into another category - in Blackfoot and Lithuanian. The goal is to provide further evidence for the proposed feature ***c***. I expect to find that the same category-intrinsic features utilized to classify roots into categories are used for re-categorization.

The chapter is organized as follows. In section 5.1 I discuss re-categorization in Lithuanian and in section 5.2 I discuss re-categorization in Blackfoot. I show how nominalization, verbalization and adjectivization are constructed in both languages. I conclude and raise further issues in 5.3.

5.1 Re-categorization in Lithuanian

First, I exemplify nominalization in Lithuanian, and show that the feature [Gender] is obtained both by verbs and adjectives as a result of re-categorization, in this case nominalization (5.1.1). Then I show that verbalization of nouns and adjectives results in the addition of a value for [Transitivity] (5.1.2). Finally, I explain how nouns and verbs acquire the feature [Degree] when they are adjectivized.

5.1.1 Nominalization

In this section, I discuss the patterns of nominalization in Lithuanian. I show that deverbal nominals can be derived with the suffixes ***–im*** and ***-sen***. The nominalizer ***–im*** is of [masculine] gender, while ***-sen*** is [feminine]. Deadjectival nominals are formed with the suffix ***–um.*** The gender of the nouns derived with this suffix may vary. I discuss each case in turn. Then I suggest a formal representation of nominalizations utilizing the feature ***c***.

Deverbal nouns with *-im*. Nominalization with the nominalizer ***-im*** derives event nominalizations. All nouns derived by ***–im*** are associated with [masculine] gender. For example, ***-im*** attaches to ***pirk***- in (1):

(1) a. Moterys pirko obuolius.
moter -ys pirk-o obuol-ius
woman-FEM.NOM.PL buy-PAST.3PL apples-MASC.ACC.PL
'The women bought apples.'

b. Obuolių pirk**im**as auga.
obuol-ių pirk-im-as aug-a
apple-MASC.GEN.PL buy-NOMZ-MASC.NOM.SG grow-PRES.3SG
'The apple sales are growing.'

c. *Obuolių pirk**im**a auga.
obuol-ių pirk -im-a aug-a
apple-MASC.GEN.PL buy-NOMZ-FEM.NOM.SG grow-PRES.3SG
Intended: 'The apple sales are growing.'

As can be seen in the examples above, ***-im*** assigns [masculine] to ***pirk***- 'buy' in (b), which is used verbally in (a). It is ungrammatical to change its gender, as shown in (c).

Level of attachment. The nominalizer ***-im*** is productively used with verbal stems, too:

(2) a. Paaugliai anglinėja senose minose.
paaugl-iai angl-inė-ja sen-ose min-ose
teen-MASC.NOM.PL coal-VERBZ-PRES3PL old-FEM.LOC.PL mine- FEM.LOC.PL
'The teens collect coal in old mines.'

b. Paauglių anglinėj**im**as kelia nerimą.
paaugl-ių angl-inė-**im**-as kel-ia
teen-MASC.GEN.PL coal-VERBZ-NOMZ-MASC.NOM.SG rise- PRES3SG

nerim-ą
anxiety -MASC.ACC.SG
'The teens' collecting of the coal is a source of anxiety.'

In (a), we see ***anglinė*** as a denominal verb, with a verbalizer ***-inė***. The denominal verb is turned into a noun again with nominalizer in ***-im*** (b).

Deverbal nouns with *–sen.* Deverbal nouns derived with nominalizer ***-sen*** are also event nominalizations, but this nominalizer suffix is associated with [feminine] gender. For example, ***-sen*** attaches to ***elg-*** 'behave' in (3):

(3) a. Vaikai elgiasi mandagiai.
vaik-ai elg-ia-si mandagiai
child-MASC.NOM.PL behave-PRES.3PL-REFL politely
'Kids are behaving politely.'

b. Vaikų elg**sen**a - nepriekaištinga.
vaik-ų elg-**sen**-a ne-priekaišt-ing-a
child-MASC.GEN.PL behave-NOMZ-FEM.SG.NOM NEG-reproach-ADJZ-FEM.NOM.SG
'The behaviour of the kids is beyond reproach.'

c. *Vaikų elg**sen**as - nepriekaištingas.
vaik-ų elg-**sen**-as ne-priekaišt-ing-a
child-MASC.GEN.PL behave-NOMZ-MASC.SG.NOM NEG-reproach-ADJZ-MASC.NOM.SG
Intended: 'The behaviour of the kids is beyond reproach.'

In (a), ***elg-*** 'behave' is used as a verb, without any gender, while in (b) it has been re-categorized into an abstract noun of feminine gender. A change in gender is not allowed, as evidenced in (c).

Level of attachment. The suffix ***-sen*** may be found on stems, too, as illustrated in (4)[95]:

(4) a. jaunikauti
jaun-ik-au-ti
young-NOMZ-VERBZ-INF
'behave as a bachelor'

b. jaunikausena
jaun-ik-au-sen-a
young-NOMZ-VERBZ-NOMZ-FEM.NOM.SG
'bachelor-like behaviour'

We can see how a denominal verb in (a) is re-categorized into a deverbal noun of feminine gender in (b).

Deadjectival nouns. Deadjectival nouns can be derived with the nominalizer ***-um.*** The derived nominal denotes the property of the base adjective, and in most cases is of [masculine] gender. However, there are instances where the derived nominal can

[95] As a native speaker, I find this one and other stem level derivations with ***–sen*** quaint. However, they are listed in LKŽ dictionary (www.lkz.lt).

be of either masculine or feminine gender. Thus, the nominalizer suffix ***–um*** provides the [Gender] as the feature c, but is not necessarily tied to a particular value (unlike the nominalizer ***–im*** that derives only masculine deverbal nouns). The use of the nominalizer ***–um*** is exemplified in (5).

(5) a. Anglės - gražios moterys.
angl-ės graž-ios moter-ys
English- FEM.NOM.PL beautiful- FEM.NOM.PL woman- FEM.NOM.PL
'English women are beautiful.'

b. Anglių graž**um**as – legendinis.
angl-ių graž-**um**-as legend-in-is
English-FEM.GEN.PL beautiful-NOMZ-MASC.NOM.SG legend-ADJZ-MASC.NOM.SG
'The beauty of English women is legendary.'

As one can see, ***-um*** assigns [masculine] to the √adjective. However, as evidenced by the example below, the [Gender] value may vary, and two distinct [Genders] of the same lexical entry can even be encountered within the same clause[96].

(6) Ta tyl**um**a – tai kapinių tyl**um**as.
ta tyl-**um**-a tai kapin-ių
that silent-NOMZ-FEM.NOM.SG that graveyard-MASC.GEN.PL

tyl-**um**-as
silent-NOMZ-MASC.NOM.SG
'That silence is the silence of graveyard.' www.lkz.lt

Tyl may be of masculine or feminine gender once turned into a noun.

Level of attachment. The nominalizer ***-um*** can also be used at stem level:

(7) a. žmogiškas
žmog-išk-as
human-ADJZ-MASC.NOM.SG
'humane'

b. žmogišk**um**as
žmog-išk-**um**-as
human-ADJZ-NOMZ-MASC.NOM.SG
'humanity, kindness'

[96] It remains to be seen whether I can establish some sort of pattern to which genders assignment is preffered, and for what reason.

Here, the adjective is denominal as the presence of the adjectivizer ***-išk*** indicates (for more details on this adjectivizer, see section 3.2.3.2 and section 5.1.3). The nominalizer is attached after the adjectivizer.

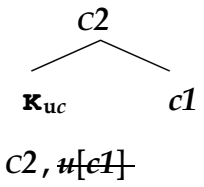
In this sample of Lithuanian nominalization, we have seen that nominalization results in obtaining the feature [Gender] or subcategories thereof, and may occur at either the root or the stem level, shown in table 38:

Table 38. Sample of nominalization in Lithuanian

suffix	selects	derives	attaches at
-im	v	$n_{[masculine]}$	root or stem
-sen	v	$n_{[feminine]}$	root or stem
-um	a	$n_{[Gender]}$	root or stem

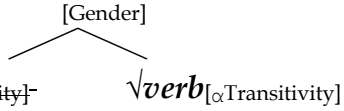
Formal representation. The general pattern of nominalization in Lithuanian can be represented as in (8):

(8)

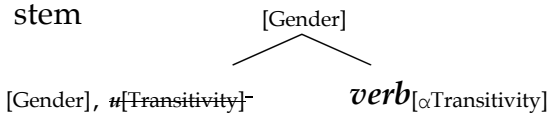


A re-categorizer with an uninterpretable feature ***c1*** selects for a particular category endowed with ***c1***, whether root or stem (root with affixes). In addition, the re-categorizer has its own categorial identity, and carries the feature ***c2***. I.e., I assume that the categorizing structure with the head **κ** is recursive while the features valuing κ_{uc} differ. Category-particular incarnations of re-categorization for root and stem levels would look like in (9). Essentially, recategorizers are category specific in that they select for a particular category (whether stem or root) and derive a nominal by adding a feature for grammatical gender:

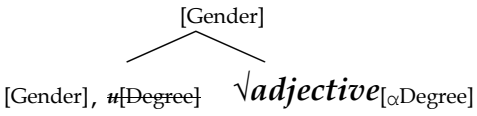
(9) a. root



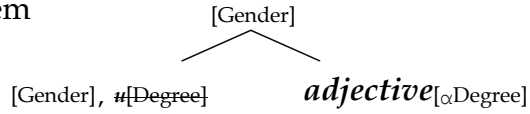
b. stem



c. root

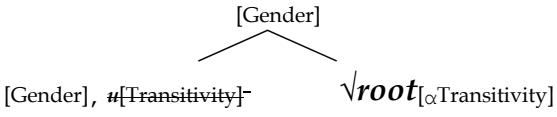


d. stem

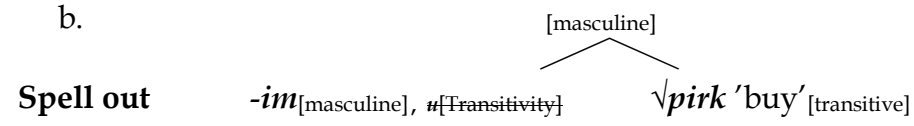


A nominalizer is associated with the feature [Gender] (or a subcategory thereof) and contains an uninterpretable feature [Transitivity] or [Degree]. A linguistic object carrying the relevant interpretable feature merges with the nominalizer and values its uninterpretable feature. The interpretable feature of the nominalizer determines the new categorial identity. A specific example of √verb nominalization with ***–im*** would look as in (10):

(10) a.

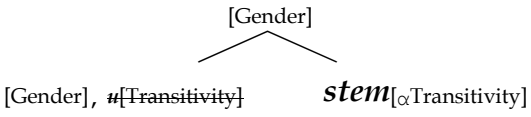


b.

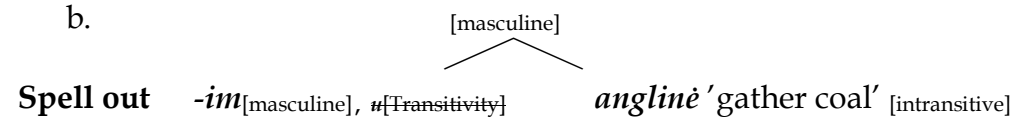


An example of verb stem nominalization with ***–im*** would be as in (11):

(11) a.

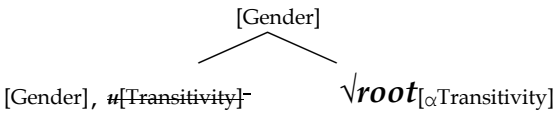


b.

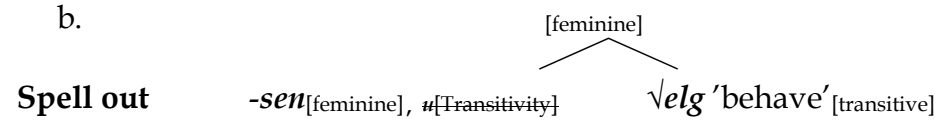


The nominalizer *-im* selects for a verbal stem ***anglinė*** and derives a [masculine] nominal. Nominalization with ***–sen*** would follow the same pattern but with a different gender, [feminine]:

(12) a.

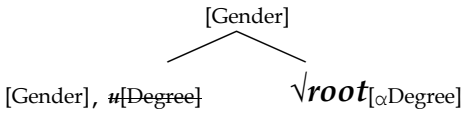


b.

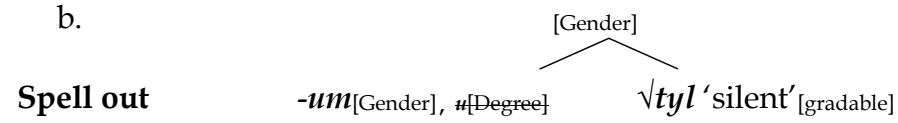


The nominalization of adjectives is more complicated: gender is assigned, as predicted. So while the process of nominalization is the same, as illustrated in (13), more research is needed to establish what determines how a particular gender – [masculine] or [feminine] - is chosen, because some entries, like ***tylumas*** 'silence' (masc) versus ***tyluma*** 'silence'(fem) may be of either gender:

(13) a.



b.



5.1.2 Verbalization

This section addresses verbalization, exemplified by verbalizers ***–au*** and ***-in***. I discuss each in turn. I first address the re-categorization, then discuss the level of attachment and, finally, suggest the formal representation in terms of the feature ***c***, namely [Transitivity].

Verbalization of √nouns and √adjectives with *-au*. The Suffix ***–au*** derives intransitive verbs from nouns and adjectives, although it is rare with the latter[97]. For example, ***–au*** may attach to an √adjective ***aštr*** 'sharp':

(14) a. Aštri pastaba žeidžia.
aštr-i pastab-a žeidž-ia
sharp-FEM.NOM.SG comment- FEM.NOM.SG hurt-PRES.3SG
'A sharp comment hurts.'

b. Dar jaunas tu prieš mane aštraut.
dar jaun-as tu prieš mane aštr-au-ti
still young-MASC.NOM.SG you.NOM.SG against me.ACC.SG sharp-VERBZ-INF
'You are way too young to snap at me.' www.lkz.lt

In (a), we see an ***aštr*** 'sharp' in its adjectival form, modifying a noun, while in (b) it has been re-categorized into an intransitive verb.

In (15), denominal adjectvization is illustrated with the noun √***gryb*** 'mushroom' re-categorized into a verb with ***–au***:

(15) a. Lietuva garsėja grybais.
Lietuv-a gars-ė-a gryb-ais
Lithuania-FEM.NOM.SG sound-VERBZ-PRES.3SG mushroom-MASC.INS.PL
'Lithuania is known for its mushrooms.'

b. Lietuviai mėgsta grybauti.
lietuv-iai mėg-sta gryb-au-ti
lithuanian-MASC.NOM.PL like-PRES.3G.PL mushroom-VERBZ-INF
'Lithuanians like to gather mushrooms.'

In (a), ***grybais*** is an object of a verb, while in (b) it has turned into a verb.

Level of attachment With nominals, ***-au*** can attach at the root level, as seen above, and it can also attach at the stem level:

[97] In the searchable online dictionary of Lithuanian (www.lkz.lt), I have found only two deadjectival verbs out of ~ 200 entries with this nominalizer.

(16) a. bitė
bit-ė
bee-FEM.NOM.SG
'a bee'

b. bitininkas
bit-inink-as
bee-NOMZ-MASC.NOM.SG
'a beekeeper'

c. bitininkauti
bit-inink-**au**-ti
bee-NOMZ-VERBZ-INF
'to keep bees'

I have not found any adjectival stems with ***-au***.

The suffix ***–in*** derives causative verbs[98]. It can derive causative verbs from verbs, nouns and adjectives. It is considered to be one of the most productive verbal suffixes (Ambrazas, 1994: 387). The derived verbs are [transitive] and mean either 'cause to do what the base denotes' or 'cause to acquire whichever properties are denoted by the base'. In other words, the verbalizer ***–in*** is tied to a particular value of the verbal transitive feature namely [transitive].

Verbalization of √nouns with *-in*. Let us take a √noun like ***veln*** 'devil'. When ***–in*** is added, a transitive verb is derived:

(17) a. Velniai dūksta.
veln-iai dūk-sta
veln- MASC.NOM.PL riot- PRES3PL
'The devils are rioting.'

b. Per daug manęs nevelnink, pats negudrus.
per daug manęs ne-veln-**in**-k,
too much I- GEN.SG NEG -devil- CAUS-IMP

…pats ne-gudr-us
self-MASC.NOM.SG NEG-smart- FEM.ACC.SG
'Don't paint me as a devil, you are not much better yourself.' www.lkz.lt

[98] This particular causativizer has been chosen for its relatively high frequency. There are others as well. For example, the suffix ***-(i)uo*** can also be used to derive causatives.

sandėlys	→	sandėliuoti
sandėl-ys		sandėl-iuo-ti
warehouse-MASC.NOM.SG		warehouse-CAUS-INF
'a warehouse'		'to store'

We can see that the noun which takes the nominal inflections of gender, case and number in (a), is now associated with verbal inflection for the imperative in (b).

Verbalization of √adjectives with *-in*. If combined with an √**adjective**, ***-in*** yields a transitive verb, too:

(18) a. Anglės - gražios moterys.
angl-ės graž-ios moter-ys
English- FEM.NOM.PL beautiful- FEM.NOM.PL woman- FEM.NOM.PL
'English women are beautiful.'

b. Moterys graž**in**asi kosmetika.
moter-ys graž **-in** -a -si kosmetik-a
woman-MASC.NOM.PL beautiful- CAUS-PRES3PL-REFL cosmetic- FEM.NOM.PL
'The women use cosmetics to get beautiful.'

Causativation of √verbs. The suffix can also be used within verbal category. In this case, it is not re-categorization but rather re-subcategorization. When ***–in*** attaches to √**verbs**, it derives transitives from intransitives, as illustrated in (19).

(19) a. Slyvos noko.
slyv-os nok-o
plum-FEM.NOM.PL ripen-PAST.3PL
'The plums were ripening.'

b. *Yra būdų nokti slyvas greičiau.
yra būd-ų nokti slyv-as greičiau
be.PRES3PL way-MASC.GEN.PL ripen-INF plum-FEM.ACC.PL faster
Intended: 'There are ways to speed up the ripening of the plums.'

c. Yra būdų nok**in**ti slyvas greičiau.
yra būd-ų nok-**in**-ti slyv-as greičiau
be.PRES3PL way-MASC.GEN.PL ripen-CAUS-INF plum-FEM.ACC.PL faster
'There are ways to speed up the ripening of the plums.'

In (a), the ***slyvos*** 'plums' is the only argument of the intransitive ***nok*** 'ripen'. The example in (b) shows that transitive use of ***nok*** is ungrammatical. In (c) plums is the object, because ***–in*** turns ***nok*** 'ripen'into a transitive.

Level of attachment. In the examples above, we have seen ***–in*** at the root level. The suffix may be found at the stem level, too:

(20) a. sidabruoti
sidabr-uo-ti
silver-VERBZ-INF
'to shine as silver'

b. sidabruo**din**ti[99]
sidabr-uo-**din-**ti
silver-VERBZ-CAUS-INF
'to endow with silver/its qualities' www.lkz.lt

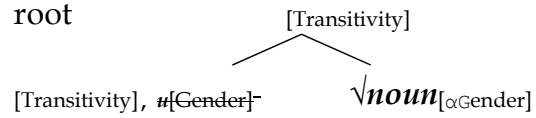
In essence, ***-in*** selects for any category and may attach at either the root or stem level. In this sample of Lithuanian verbalization, we have seen that verbalization results in obtaining [Transitivity] or subcategories thereof, and may occur at either the root or stem level, as shown in table 39:

Table 39. Sample of verbalization in Lithuanian

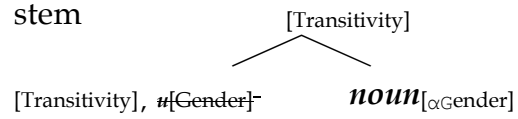
suffix	selects	derives	attaches at
-au	n, a	v[intransitive]	root or stem for n root for a
-in	v, n, a	v[transitive]	root or stem

Formal representation. Category-particular incarnations of verbalization for root and stem levels can be represented as in (21):

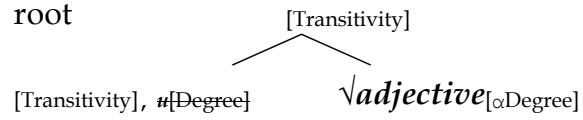
(21) a. root



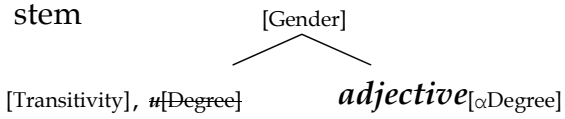
b. stem



(22) a. root



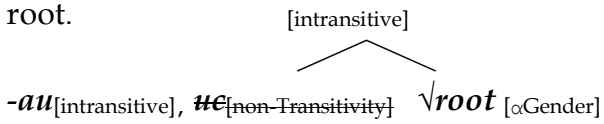
b. stem



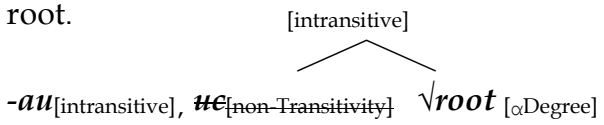
[99] ***-din-*** is an allomorph of ***–in***.

Verbalization with ***–au*** is one example of re-categorization into verbs. We know that ***–au*** selects for either nouns or adjectives but excludes verbs, but we do not (yet) know on what grounds verbs are excluded. Until I determine the reason behind this selectional restriction, I have to stipulate the restriction. I posit that derivation of verbs with ***–au*** occurs as in (23):

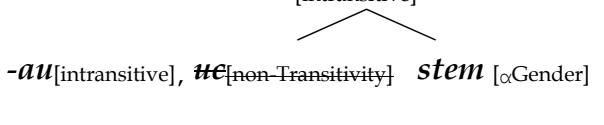
(23) a. root.



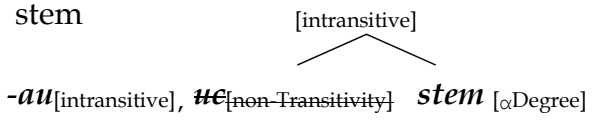
b. root.



c. stem



d. stem



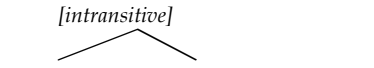
Essentially, ***–au*** selects for any category (root or stem) except verbs. Either a root or a stem values the uninterpretable ***uc,*** and an [intransitive] verb is derived. A particular example of verbalization with ***–au*** would look like in (24):

(24) a.

Spell out

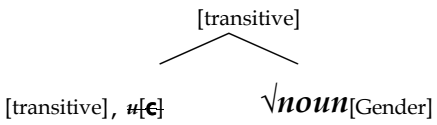
b.

Spell out

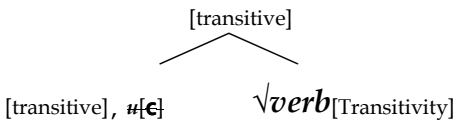


Compared to ***–au,*** verbalization with ***-in*** is less complicated: it selects for any category and derives a transitive verb. Formally this can be represented as in (25)-(26):

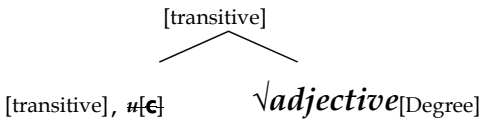
(25) a.



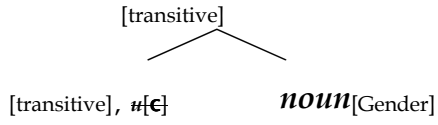
b.



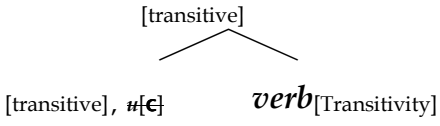
c.



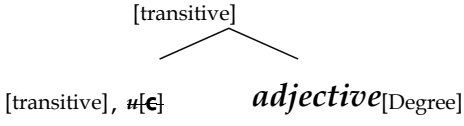
(26) a.



b.

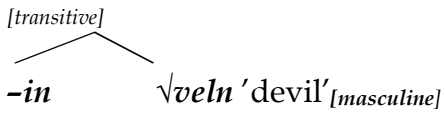


c.



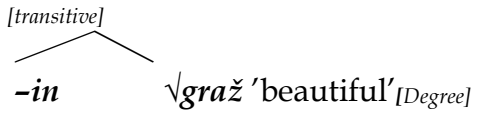
The causative may take a root or stem of any category and re-categorize it into a verb[100]. A particular example of verbalization with ***–in*** is given in (27):

(27) a.



Spell out

b.



Spell out

[100] Note that this verbalizer cannot select transitive verbs. This depends on how the re-categorizer itself has been defined in the feature-driven syntax: recall that a re-categorizer has to select for a feature other than that which it already contains (discussed in 4.3).

5.1.3 Adjectivization

In Lithuanian, adjectives are a category defined by their own category-specific feature, namely [Degree], therefore we expect adjectivization to be possible. This is indeed the case, as I will now show.

Adjectivization of √nouns. The adjectivizers ***-in*** and ***-išk*** form denominal adjectives. The derived forms express a property denoted by the nominal. The two suffixes differ in that ***-in*** derives non-gradable adjectives and ***-išk*** derives gradable adjectives. Both suffixes add ***c*** = [Degree], characteristic to the Lithuanian adjective category. In (28), an adjective ***medinis*** 'wooden' is derived from the noun ***medis*** 'a tree'.

(28) a. Kieme auga medis.
kiem-e aug-a med-is
yard-MASC.LOC.SG grow-PRES.3SG tree-MASC.NOM.SG
'A tree is growing in the backyard.'

b. Morta pirko med**in**į suolą.
Mart-a pirko-o med-**in**-į
Mort-FEM.NOM.SG buy-PAST.3SG wood- ADJZ-MASC.ACC.SG

...suol-ą
bench-MASC.ACC.SG
'Martha bought a wooden bench.'

c. *med**in**esnis suolas
med-**in**-esnis suol-as
wood- ADJZ-SUF$_D$ bench-MASC.ACC.SG
Intended: 'the more wooden bench'

In (b), we see the adjective derived with ***-in*** modifying the noun. In (c), we see the ungrammaticality of the adjective with a comparative degree suffix. As discussed in 3.2.3.1, this is expected with non-gradable adjectives.

In (29), an adjective ***velniškiausia*** 'the most devilish' is derived from the noun ***velnias*** 'devil'.

(29) a. Velnias – smagus personažas.
veln-ias smag-us personaž-as
devil-MASC.NOM.SG fun-MASC.NOM.SG character-MASC.NOM.SG
'The devil is a fun character.'

b. Fokstrotas vadintas veln**išk**a išmone.
fokstrot-as vadint-as veln-**išk**- a
foxtrot-MASC.NOM.SG call-MASC.NOM.SG devil-ADJZ- FEM.INS.SG

...išmon-e
invention-FEM.INS.SG
'Foxtrot has been called a devilish invention.'

In (b), we see the derived adjective used with a superlative suffix, indicating that gradability has been acquired due to suffix ***–išk***.

Level of attachment. In the examples above, both adjectivizers attach at the root level. Both adjectivizers can attach at the stem, level, too. For example, here is ***-išk*** at the stem level, as can be seen in (30):

(30) a. amatas
amat-as
craft-MASC.NOM.SG
'craft'

b. amatininkas
amat-inink-as
craft- SUF_N- MASC.NOM.SG
'craftsman'

c. amatininkiškas
amat-inink-išk-as
craft- SUF_N -ADJZ-MASC.NOM.SG
'characteristic of a craftsman'

In (b), a nominal suffix ***-innik*** attaches to a √noun, and a different noun is derived. Next, in (c) the adjectivizer attaches to the nominal stem and an adjective is derived.

In (31), we see ***–in*** at the stem level:

(31) a. asmuo
asmen-uo
person-MASC.NOM.SG
'a person'

b. asmenybė
asmen-yb-ė
person-NOMZ-FEM.NOM.SG
'a personality'

c. asmenyb**in**is
asmen-yb-**in**-is
person-NOMZ-ADJZ-FEM.NOM.SG
'related to a personality' www.lkz.lt

In (b), a nominal suffix ***-yb*** attaches to a √noun, and a different noun is derived. Then in (c) the adjectivizer ***-in*** attaches to the nominal stem and an adjective is derived.

Adjectivization of √verbs[101]**.** To illustrate the formation of deverbal adjectives I use the suffix ***–sn-***, which adds the adjectival feature [gradable]. In (32), we see an intransitive √verb ***verk*** 'cry', first used with temporal morphology, and then derived into an adjective that may modify either masculine or feminine nouns:

(32) a.Vaikas dažnai verkia.
vaik-as dažnai verk-ia
child-MASC.NOM.SG often cry-PRES.3SG
'The child cries often.'

b. Koks verk**sn**us berniukas!
kok-s verk-**sn-**us bern-iuk-as
what-MASC.NOM.SG cry-ADJZ-MASC.NOM.SG male-DIM- MASC.NOM.SG
'What a cry-baby boy!'

---

[101] As it is common in many languages, verbal participial forms are used adjectivally and could be considered the biggest source of deverbal adjectives:

(i) myl**int**i moteris
myl **-int** -i moter-is
love-**PRES.PART**-FEM.NOM.SG woman-FEM.NOM.SG
'a loving woman'

(ii) myl**int**is vyras
myl **–int** -is vyr-as
love-**PRES.PART**-MASC.NOM.SG man-MASC.NOM.SG
'a loving man'

I view the participial forms as a mixed category. On the one hand, participial forms encode temporal information which is not a part of underived adjectives (bolded in the examples above). On the other hand, participial forms can be selected by the pronominal suffixes that pick out all and only adjectives in the underived categories (see discussion in 3.2.3.2), bolded below:

(iii) mylinti moteris → mylinč**ioji**
myl -int -i moter-is myl -int **–ioji**
love-PRES.PART-FEM.NOM.SG woman-FEM.NOM.SG love-PRES.PART-FEM.NOM.SG
'a loving woman' 'the loving one'

For the time being, I set this interesting problem of mixed categories aside.

c. Kokia verk**sn**i mergaitė!
kok-s verk-**sn**-i merg-ait-ė
what- FEM.NOM.SG cry-ADJZ- FEM.NOM.SG female-DIM- FEM.NOM.SG
'What a cry-baby girl!'

In (33), we can see the newly derived adjective with a degree suffix:

(33) Ona – verk**sn**esnė už Joną, bet Adomas verk**sn**esnis už visus.
Ona verk-**sn** -esn-ė už Jon-ą
Ann cry-ADJZ-DEG-FEM.NOM.SG than John-MASC.ACC.SG

...bet Adomas verk-**sn**-esn-is už vis-us
but Adam cry-ADJZ-DEG-FEM.NOM.SG than all-MASC.ACC.PL
'Ann is way more of a cry-baby than John, but Adam is the biggest cry-baby of all.'

Level of attachment. A search of the online dictionary and media (newspapers) has only found examples of ***-sn*** attaching at root level, as exemplified above.

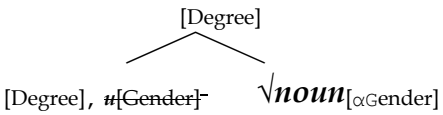
In sum, we have seen that both nouns and verbs can be re-categorized into adjectives, as summarized in table 40 below.

Table 40. Sample of adjectivization in Lithuanian

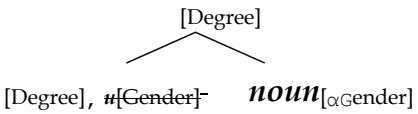
suffix	selects	derives	attaches at
-in	n	$a_{[nongradable]}$	root or stem
-išk	n	$a_{[gradable]}$	root or stem
-sn	v	$a_{[gradable]}$	root

Formal representation. The general pattern of adjectivization can be represented as in (34) - (35):

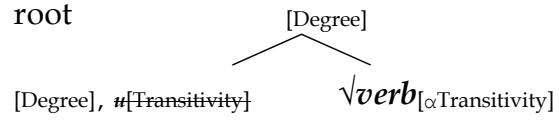
(34) a. root



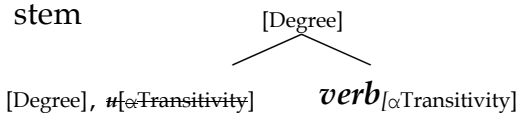
b. stem



(35) a. root



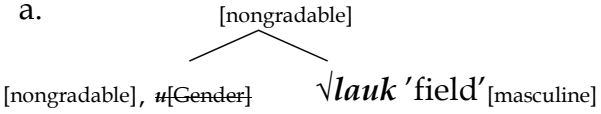
b. stem



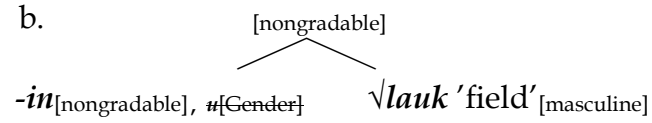
Adjectivizers contain [Degree] and derive gradable or non-gradable adjectives. Particular adjectivizers may attach to particular categories, nouns or verbs. Whether the adjectivizers attach only to roots or also to stems may vary.

(36) shows how a particular incarnation of adjectivization will look like with the denominal adjectivizer ***–in:***

(36) a.

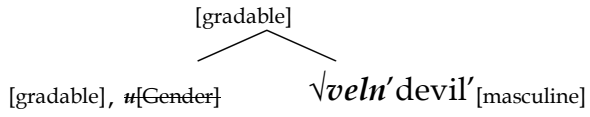


b.

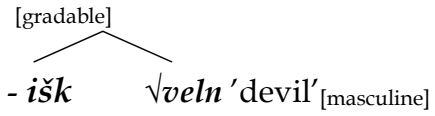


The suffix ***–in*** selects for √nouns based on the feature [Gender] and derives [non-gradable] adjectives. Another denominal adjectivizer, ***– išk,*** is represented in (37):

(37) a.



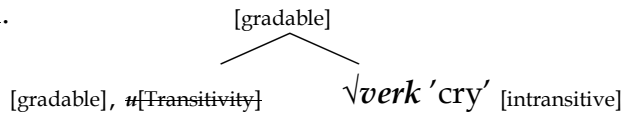
b.



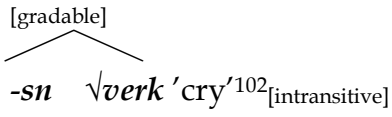
This adjectivizer selects for nouns and derives [gradable] adjectives.

An instance of deverbal adjecitivization with with ***-sn*** can be represented as in (38):

(38) a.



b.



The deverbal adjectivizer *-**sn*** derives [gradable] adjectives.

5.1.4 Summary of re-categorization in Lithuanian

We have seen that in case of Lithuanian, category-intrinsic features (i.e, [Transitivity] for verbs, [Gender] for nouns, and [Degree] for adjectives) are used in re-categorization. In this sense, I have accomplished the goal set at the beginning of the chapter, namely to provide additional evidence for the existence of the feature ***c*.** The lack or existence of category specific derivational re-categorization morphemes support the view that some roots are intrinsically categorized and selected as such. It is consistent with the assumption that roots may be categorized.

The particular affixes discussed were meant as examples of the re-categorization, and by no means cover the rich derivational morphology of Lithuanian (there are ~ 200 affixes to be accounted for). I exemplified each subcategory within each category: [masculine] and [feminine] for [Gender]; [transitive], [intransitive] for [Transitivity];

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[102] This is an intransitive verb. The suffix ***-sn*** can also attach to verbs other than intransitive, e.g. concealed transitive ***ėsti*** 'to feed' (about animals):

Ėsni mano karvelė.
ės-sn-i man-o karv-el-ė
feed-ADJZ-FEM.NOM.SG my-GEN.SG cow-DIM-FEM.NOM.SG
'My cow eats well.' www.lkz.lt

It is not my goal to illustrate all the subcategories involved, so I do not go over all possible variants of the base verb selected by this adjecitivizer.

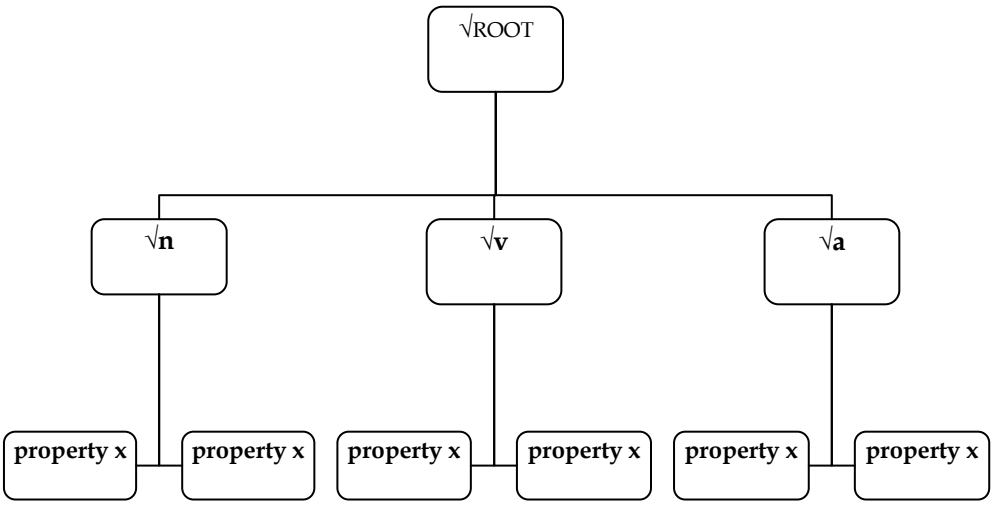
and [gradable] and [non-gradable] for [Degree]. The patterns are given briefly in table 41.

Table 41. Sample of re-categorization patterns in Lithuanian

Suffix	Selects for	Derives
-im	category v	subcategory n:[masculine]
-sen	category v	subcategory n:[feminine]
-um	category a	category n:[Gender]
-au	category n or a	subcategory v:[intransitive]
-in	any category	subcategory v:[transitive]
-in	category n	subcategory a:[nongradable]
-išk	category n	subcategory a: [gradable]
-sn	category v	subcategory a:[gradable]

In addition, I checked for selectional restrictions and level of attachment. It is noteworthy that even this small set of derivational affixes shows variation. Some affixes select for a particular category (e.g. nominalizer ***–um*** for adjectives), while other affixes select for more than one category (e.g. causative ***–in*** for any category). Moreover, some re-categorizers select for a particular subcategory, and some for a particular category. This variation is expected if we keep in mind that categories may be accessible at the categorial or subcategorial level:

(39)



The lack of homogeneity in re-categorizers is yet another argument in favour of the proposed organization of the categorial features. If confirms that re-categorizers are also sensitive to the distinct levels of categorial information. Note also, that many of the discussed derivational morphemes may attach to either root or stem level, i.e. they select for a category in the broad sense, disregarding its internal structure.

One might wonder how the fact that re-categorization processes for roots and stems are the same bears on the analysis of root categorization, the focus of this study. While it is true that re-categorization of roots and stems is the same, I argue that it does not undermine the analysis of root categorization. Categorization and re-categorization share the use of categorial features necessary for the construction of a category. This has been the reason I explored re-categorization: to find more evidence for feature ***c***. However, while the two processes share the same category specific features, the linguistic elements involved are not the same. To the best of my knowledge, there are no category neutral stems in Lithuanian, while I have argued for two types of roots (categorized and category neutral) and I have shown that the two types can be distinguished with the help of tests.

In future research, I intend to explore what factors determine sensitivity to a particular category versus subcategory, and whether it has any further consequences to the architecture of the grammar.

5.2 Re-categorization in Blackfoot

This section explores re-categorization in Blackfoot. In 5.2.1, I show how nominalization can be equated with the addition of the feature [Animacy]. 5.2.2 addresses verbalization. The lack of attributivization is taken up in 5.2.3. The findings are summarized in 5.2.4.

5.2.1 Nominalization

In this section, I exemplify nominalization in Blackfoot. First I examine the nominalization of verbs. Then I explain the gap in nominalization, namely the lack of nouns formed from attributives and why this is expected. Re-categorization into nouns is exemplified with the nominalizers ***-a'tsis*** 'tool'[103], ***–o'p,*** and finally nominalization via a zero nominalizer.

Deverbal nouns. Nominalization in Blackfoot may take place either by means of overt suffixes or else via zero derivation, but crucially only *beyond* the root level. Different types of nominalization are illustrated in (40).

(40) a. iihtáóhpomma**o'p**[104]
iiht-a-ohpommaa-**o'p**
means-buy-INT-NOMZ
'money'

b. iihtáóhpomma**o'p**iksi
iiht-a-ohpommaa-**o'p** -iksi
means-buy-INT-NOMZ-AN.PL
'money'

c. áíkkato**o'p**
a-ikk-atoo-**o'p**
IMP-blow- TA-NOMZ
'a balloon' F&R 1995:20, 5

d. áíkkato**o'p**istsi
a-ikk-atoo-**o'p**-istsi
IMP-blow- TA-NOMZ-IN.PL
'balloons'

(41) a. isstssimá**a'tsis**
i -sstss-imaa **–a'tsis**
?-burn- INT-**NOMZ**
'a match'

b. ómahksstssimá**a'tsi**istsi
omahk-sstss-imaa-**a'tsis**-istsi
big-burn- INT-NOMZ-IN.PL
'big matches'

c. isskimá**a'tsis**
i-ssk-imaa-**a'tsis**
?-break-INT-NOMZ
'a sharpener ' F&R 1995:72, 70

d. póksskimá**a'tsi**iksi
ohpok-ssk-imaa-**a'tsis**-iksi
small-break- INT-NOMZ -AN.PL
'small sharpeners'

---

[103] In Frantz & Russell (1995:15), ***-a'tsis*** is listed as 'tool'.

[104] There are many noiminalizations where the preverb ***iiht-*** and the nominalizer ***-o'p*** co-occur, and it may appear that they form a circumfix. However, there are some examples where they can occur independently of each other, e.g. the form for ***áíkkatoo'p*** 'balloon' seen in (40).

(42) a. áóttaki
a -ottak-i-ø
IMP-dip out liquid-INT-NOMZ
'a bartender'

b. áóttakiiksi
a -ottak-i- ø -iksi
IMP-dip out liquid-INT. NOMZ -AN.PL
'bartenders' F&R 1995:10

In (40), the nominalizer ***-o'p*** turns ***ohpommaa*** 'buy' and ***ikkatoo*** 'blow' into the nominals 'money' and 'balloon', respectively (a-d). In (41), the nominalizer ***-a'tsis*** turns the verbal stem ***isskimaa*** and ***isstssimaa*** into nominals. (42) is an instance of zero nominalization: ***ottaki*** is used nominally without any overt nominalizer[105]. Given that the plural can be attached to ***ottaki*** and given that the plural is not deriving (as discussed in 2.2), I assume that there is an underlying nominalizer. We know that these are verbal stems: they all contain transitivity suffixes and some carry the imperfective marker ***a-***. The derived stems are nominal: they combine with the nominal plural suffixes. The nominalizations combine with the two different plural markers, animate or inanimate. This indicates that the derived nominals have obtained [Animacy]. Crucially, the animacy specifications may not be reversed, as evidenced by the ungrammaticality of (43) as compared to (41):

(43) a. *omahksstssimá**a'tsi**iksi
omahk-sstss-imaa-**a'tsis**-iksi
big-burn-INT-NOMZ-AN.PL
'big matches'

b. *poksskimá**a'tsi**istsi
ohpok-ssk-imaa-**a'tsis**-istsi
small-break-INT-NOMZ -IN.PL
'small sharpeners'

Recall that neither can the animacy of simplex nominals be reversed, as has been discussed in section 2.3. In this aspect nominalization is akin to categorization.

I have now shown that verbs may be used nominally in Blackfoot and furthermore that nominalization is a result of adding an [Animacy] feature to a verbal stem. This is expected if the feature intrinsic to nouns is [Animacy], as argued in

[105] The nominal use of verbal predicates without any overt nominalizer is very common and productive. Uhlenbeck (1938:12) notes that 'In general it may be said, that any form of verbum finitum, transitive or intransitive, occasionally may be used and treated as noun.'

chapters 2 and 4. There remain two unresolved issues: (i) the level of attachment for nominalizers; (ii) the particular value of [Animacy] with which nominalizers associate.

For the reasons that I have not been able to establish thus far, nominalization is restricted to stem level in Blackfoot. Root-level nominalization is not attested, as illustrated below.

(44) a. *isstss**a'tsis**
i -sstss- **a'tsis**
?**-**burn- **NOMZ**
'a match'

c. *issk**a'tsis**
i-ssk-**a'tsis**
?-break-NOMZ
'a sharpener'

In (a), the nominalizer ***-a'tsis*** is added to a bare √verb, i.e., a root without transitivity suffixes. The result is ungrammatical. Thus, the generalization is that root level re-categorization is not allowed in Blackfoot, i.e., the feature intrinsic to a particular category is only c-selectable at the stem level. In the feature-based system I have been proposing this means that c-selectional properties are sensitive to purely morphological properties (such as the difference between roots and stems). I do not know why this is the case, and leave this significant issue for further research.

We have also seen that the same nominalizer may be [animate] or [inanimate]. Thus far, I have been unable to ascertain what determines the particular animacy assignment[106].

Lack of attributive nouns. Next we turn to the nominalization of attributives. In 2.4, I have argued that that √attributives do not contain any selectable feature ***c*** and, consequently, do not form a category. Given that they are not a category, they are not c-selectable. Therefore re-categorization of √attributives is predicted to be impossible. This prediction is borne out. Attributive nominals are not attested in the dictionary and cannot be obtained via elicitation. For example, the nominalizing suffix -

[106] But recall the observation by Wiltschko (2009) that [animate] in Blackfoot is used to mark culturally novel items. This also holds for derived nouns, to the best of my knowledge.

ssin/–n may not attach to √attributives like *ikkina* ('soft') or *ksikk* ('white'). The result is ungrammatical as shown in (45)[107]:

(45) a. *ikkina**n**
ikkina-**n**
soft-NOMZ
Intended: 'softness'

b. *ksikki**n**
ksikk-i-**n**
white-EPENT-NOMZ
Intended: 'whiteness'

c. *ikkin**ssin**
ikkina-**ssin**
soft-NOMZ
Intended: 'softness'

d. *ksikki**ssin**
ksikk-i-**ssin**
white-EPENT-NOMZ
Intended: 'whiteness'

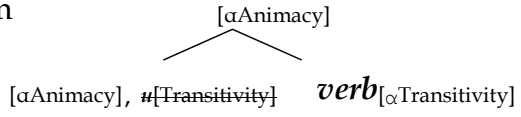
In sum, the pattern of nominalization available in Blackfoot is less complex in comparison to Lithuanian. Only stem-level verbs can be nominalized, and the same nominalizer may be associated with [animate] or [inanimate], i.e. the restrictions are thus far unclear. The summary is in table 42.

Table 42. Sample of nominalization in Blackfoot

suffix	selects	derives	attaches at
-a'tsis	v	n[Animacy]	stem
-o'p	v	n[Animacy]	stem
-ssin	v	n[Animacy]	stem
ø	v	n[Animacy]	stem

Formal representation. Abstractly, nominalization can be represented as follows:

(46) stem



A nominalizer selects for a verbal stem (never a root) and derives a nominal which is either [animate] or [inanimate]. Therein lies the problem: thus far, I have not been able to establish under which conditions a particular subcategory of [Animacy] is assigned.

[107]The elicitation efforts were often followed by a remark of the consultant: 'We just don't do this in Blackfoot.'

For now I stipulate that nominalizers encode [Animacy], while a particular subcategory – [animate] or [inanimate] - is decided by factors yet to be uncovered. An example of such a derivation could look like this (cf. example (41) above):

(47) a. [αAnimacy] ← [animate] or [inanimate]

Spell out ***-a'tsis*** √***verb***[αTransitivity]

b. ***isstssimaa'tsis*** 'a sharpener' [inanimate]

-a'tsis[Animacy], ~~*u*[Transitivity]~~ ***isstssimaa***[intransitive]

c.. ***isskimaa'tsis*** 'a match' [animate]

-a'tsis[Animacy], ~~*u*[Transitivity]~~ isskimaa [intransitive]

The blue print of a **spell out** is like in (47)a. A particular incarnation could be either as (47)b for, inanimates (47)c, for animates. The transitivity suffixes are the same on the two verbs, so there is no syntactic reason for the difference in animacy. The semantics of these verbs do not give any particular reason to differentiate animacy either.
My goal to illustrate that nominalization is associated with adding [Animacy] has been accomplished, although I need to determine the sub-categorial values.

The failure of deattributive nominalization can be represented as in (48):

(48)

-NOMZ[Animacy], *u*[??] √attributive

The derivation crashes, because (i) there is no feature ***c*** to select for; (ii) attributives do not form stems specific to their category, and root-level nominalization does not occur.

To express the intended concept, my Blackfoot consultant consistently offers periphrastic alternatives to nominalizations, such as the one below:

(49) otsiksikka'pssini mátt(ohk)soka'pii
ot -ksikk -a'p –ssi-ssin-i matt-(ohk)-sok -a'p -ii
3POSS-white-about/around-NOMZ-? NEG-?- good-about/around-INT
Lit.: 'Her being white is not good.'
'Her whiteness is not good.'

In lieu of deattributive nouns, the preferred strategy is a construction with the light verb ***a'pssi*** that has been nominalized. Crucially, √***ksikk*** 'white' is not nominalized on its own[108].

In conclusion, I have shown that nominalization adds [Animacy] to verbal stems. In other words, the feature inherent to Blackfoot √nouns is also encoded by nominalizers as expected.

As expected, √attributives cannot be re-categorized as they do not constitute a category in the first place.

5.2.2 Verbalization

Verbalization in Blackfoot is not attested if one were to look for a dedicated verbalizer (akin to Blackfoot nominalizers **–**discussed in the previous section).
One could also view verbalization as driven by light verbs (on the assumption that the boundary between lexical suffixes and light verbs is fuzzy); see more in Corver et al. 2001). Verbalizations of light verb constructions abound.
Essentially, light verbs differ from lexical verbalizing suffixes in that the light verbs can be morphologically free (cf. English ***make it trivial)***, while the verbalizing suffixes have

[108] Here, the underlying form of the stem is hard to ascertain exactly due to phonological processes in stem-nominalizer interactions. The underlying sequence may be either ***-a'p +ssin*** (or, historically, ***- hsin*** that has surface form ***-ssin***, Frantz 1991:116) or ***-a'pss+ssin***, but either form would result in a string of too many *s* segments, some of which would be deleted. Thus it is unclear, what is the source of the surface ss. The reliable part is the obligatory presence of ***a'p*** that interferes between the nominalizer and the root, and indicates that the nominalizer can not attach to the root directly. Recall that a similar process it attested in secondary derivations (discussed in section 2.2.2.2 where –transitive suffix ***atoo*** merges with adjectival stems that contains ***–a'pssi***. However, in that context phonological interactions do not obscure the boundaries, and ***–ss*** clearly belongs to the ***–a'pssi*** stem because ***atoo*** does not contain any *s* segments.

to be bound (***trivialize it***). But in Blackfoot all morphemes are bound, therefore the free/bound distinction is irrelevant. I distinguish Blackfoot light verbs based on these three criteria:

(i) they have transitivity suffixes just like √verbs;
(ii) yet they *require* a modifier root to form a grammatical expression unlike most of √verbs
(iii) they are very productive

Frantz & Russell's (1995) dictionary lists a number of √verbs that meet these criteria. For example, these are entries like: ***–hk*** 'acquire', ***-(w)a's*** 'become', ***-ihka's*** 'behave in a certain way', ***istot-*** 'make/do' and so on (see appendix D for a sample of stems with some of these light verbs). As long as one views these kinds of constructions as verbalization, then verbalization is attested in Blackfoot. The relevant fact is that the roots or stems which attach to a verbalizer become verbal predicates. In that sense, [Transitivity], i.e. the feature inherent to √verbs, is found in re-categorizing environments.

I have briefly discussed verbalization of √nouns in section 2.3. There, I have used ***–hk*** 'acquire' and ***-(w)a's*** 'become' as examples of verbalizers that select exclusively for √nouns.

In this section I discuss two other verbalizers: ***-ihka's*** 'behave in a certain way' and ***istot-*** 'make/do'. These two verbalizers select for roots of more than the nominal category, in contrast to the aforementioned ***–hk*** 'acquire' and ***-(w)a's*** 'become'. For example, ***istot-*** can be found with either √attributives (a), √nouns (b), or √verbs (the latter is rare) as in (c):

(50) a. **ikkin**íístotsit!
ikkina-istot-i-t
soft/slow-do-TI-IMPER
'soften it!' F&R 1995:34

b. nit**áákii**stotoa
nit-**aakii**-istot-o-wa
1SG-woman-make-TA-1>3
'I made him a woman.'
Context: made him behave like a woman, care for children & cook

c. áaksoyiistotoyiiwa
yaak-oo-istot-o-yiiwa
FUT-eat-make-TA-3>4
'She will prepare a meal for him.' F&R 1995:134

Verbalizer ***-ihka's*** is attested both with √nouns (a) and √attributives (b):

(51) a. áttsáakiihka'siwa
mattsi **–aakii** -ihka's -i -wa
again -woman-behave-INT-3SG
'She acted like a whore.' F&R 1995:200

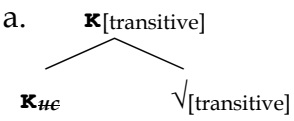
b. Anna Sam **owk**ihka'si
anna Sam a-**ok**-ihka's-i
DET Sam IMP-bad-behave-INT
'Sam is acting badly.'

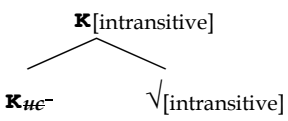
In sum, verbalization is essentially a construction with light verbs. I.e., we know these are verbs because they take on transitivity suffixes, and the lightness of meaning is compensated with a modifier root attaching to the left of the verb root Table 43 highlights the pattern.

Table 43. Sample of verbalization in Blackfoot

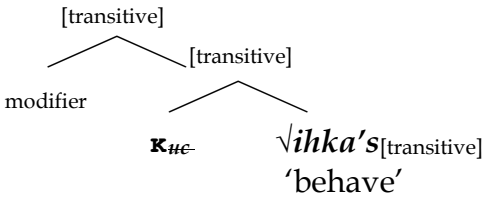
Light √verb	Selects for	Derives
light verb ***istot*** *'make/do'*	mostly a or n, some v	category v:[transitive] or [intransitive]
light verb ***ihka's*** *'behave'*	category a or n	category v:[transitive] or [intransitive]

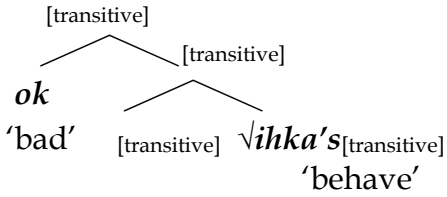
Formal representation. Whether it is ***istot-*** or ***-ihka's***, we see that [Transitivity] is attained by the means of a light verb (see 4.3.2.1 for more detail). Essentially, the verb merges with the categorizer κ_{uc}, which is valued by the light √verb root of a particular sub-category:

(52) a. 

b. 

A particular incarnation would be the structure of a verb with an obligatory modifier:

(53) a. 

b. 

Spell out

If ***-ihka's*** were a dedicated derivational verbalizer on its own, it should be uniform in its transitivity. This is not the case. Light √verbs always occur with whatever set of transitivity suffixes are associated with that particular light √verb (underlined):

(54) ***-hk<u>aa</u>, -(w)a'si, istotsi, istoto, -ihka'si, -ihka'sat***

And their transitivity suffixes cannot be shuffled at will:

(55) ****-hksi, *-(w)a'saa, *istotatoo, *-ihka'so***

Since I argue that these are √verbs, ungrammaticality is expected because [Transitivity] is inherent to √verbs and only particular Transitivity suffixes can co-occur with a particular √verb, even when these verbs are what I call light. Based on this data, I argue that what appears like re-categorization into verbs is in fact an instance of light √verb constructions with specific transitivity suffixes. Thus, formally, verbalization is the same as the derivation of a verb of whichever transitivity it happens to be, only with a modifier attached.

5.2.3 Adjectivization

Given that I have argued for the lack of a categorial identity associated with attributives in Blackfoot, I predict that there is no morpheme associated with re-categorization into the class of attributives. This prediction is borne out. Neither in the dictionary (Frantz & Russell 1995) nor in elicitation can one find a morpheme that would convert nouns or verbs into attributives. To convey denominal or deverbal notions, the consultant provides constructions with light verbs. The consultant's suggestions concur with entries found in the dictionary, for example:

(56) a. inaihka'si
ninaa-ihka's-i
man-behave-INT
'act bossy' F&R 1995:48

b. wattsaakiihka'si[109]
matt -aakii -ihka's -i
again-woman-behave-INT
'act whorishly' F&R 1995:200

In both examples, the light verb ***-ihka's*** 'behave' is used to construct a denominal notion. Similarly, deverbal notions are either paraphrased or constructed with the help of verbal stems:

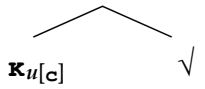
(57) ámo napayín akohkóttsoatoo'p
amo napayin yaak-ohkott-oo-atoo-'p
DET bread FUT -able -eat-TI- 1>3-?IRREAL
Lit.: 'One would be able to eat this bread.'
'This bread is edible.'

As the verb-internal composition (presence of transitivity suffixes and a modal like ***ohkott-*** 'able') and literal translation indicate, 'edible' is conveyed as a clausal construction. Thus, √nouns and √verbs may be used attributively through periphrastic constructions.

[109] I cannot account for the ***s*** in ***matts***- sequence.

Formal representation. The failure to categorize a root as an attributive has been represented as in (58) (repeated from 4.3.2.1):

(58)



Due to the lack of the feature ***c***, the root cannot value the categorizer. Consequently, an attributivizer cannot exist in Blackfoot because it would not have a feature **c** for valuation, and the derivation would crash.

5.2.4 Summary of re-categorization in Blackfoot

In as much as the Blackfoot re-categorization facts are understood, they support the existence of the feature **c**. There are two pieces of evidence to support this claim: the nominalization facts and the lack of attributivization.

The nominalization facts can be interpreted as supporting evidence for the existence of the category-intrinsic feature ***c.***

The lack of attributivization is consistent with my claim that √attributives lack a category-specific feature ***c***. Under the assumption that both categorization and re-categorization are driven by ***c***, the lack of attributivization is expected and accounted for.

The verbalization facts are more complicated. There is no dedicated verbalizing morpheme. In that sense, verbalization is not attested in Blackfoot. Yet light verb constructions are utilized to convey the necessary meanings.

Table 44 summarizes the findings:

Table 44. Sample of re-categorization patterns in Blackfoot

Suffix	Selects for	Derives
-ø	category v	category n:[animate] or[inanimate]
-o'p	category v	category n: [animate] or [inanimate]
-a'tsis	category v	category n: [animate] or[inanimate]
-ssin/-n	category v	category n:[animate] or [inanimate]
light verb ***istot*** *'make/do'*	mostly a or n, some v	category v:[transitive] or [intransitive]
light verb ***ihka's*** *'behave'*	category a or n	category v:[transitive] or [intransitive]

Last but not least, I stipulated that re-categorization occurs only at stem level.

5.3 Conclusions and open issues

The goal of this chapter has been to find more evidence for the feature **c**, specifically in environments beyond roots.

The Lithuanian facts of re-categorization have supported the hypothesis that if a particular feature is found in the patterns of the categorization environment, the same feature will be found in the patterns of re-categorization. I found evidence to that end both at the root and stem levels which contrasts with Blackfoot stem level re-categorization only[110]. Re-categorization into nominals entails the assignment of [Gender], into verbs the assignment of [Transitivity] and into adjectives the assignment of [Degree]. Thus the feature ***c*** intrinsic to each category has been observed in re-categorization.

The interpretation of the Blackfoot re-categorization facts is less clear-cut. Nominalization results in the attainment of the nominal feature [Animacy], as predicted. Contrary to expectations, no verbalizers are attested in Blackfoot, unless one views light verb constructions as instances of verbalization. It remains to be seen how

[110] It remains to be seen whether this is a sign of further differences in organization of linguistic objects in the grammars of the two languages.

one could account for the absence of verbalizers. As predicted, attributivization is not attested. Given that attributives do not form a category of their own due to the lack of feature ***c***, re-categorization has been predicted to be impossible, too.

Chapter 6 Conclusions and open issues

In this chapter, I first summarize the findings and the proposals on the categorization of roots laid out in this dissertation (6.1). Then I outline a future research agenda based on the open issues that have emerged during the investigation for this study (6.2).

6.1 Conclusions

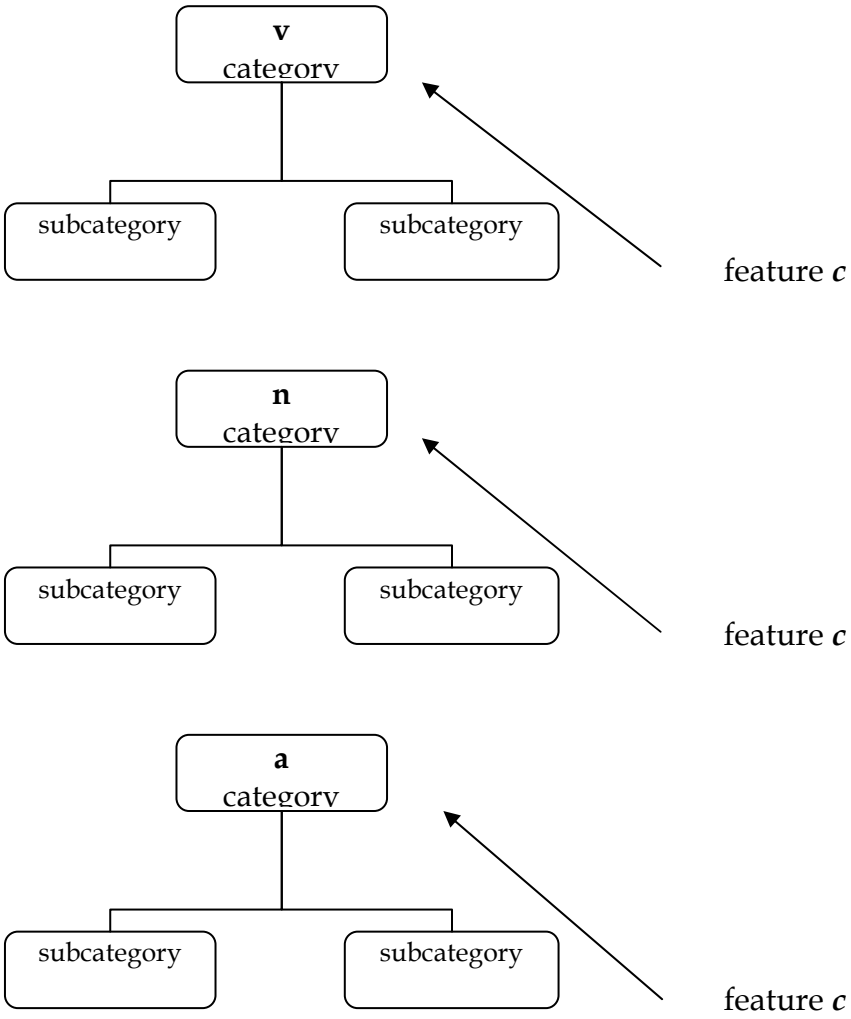
In chapter 1, I set out to determine whether all roots are ROOTS, i.e., whether category-neutral behaviour is intrinsic to roots as has been proposed in recent years (starting with Marantz 1997). Based on the case studies of Blackfoot and Lithuanian, I have concluded that not all roots are ROOTS, and that we have to recognize that roots do not form a homogenous class.

I have shown that some roots enter the syntax already categorized and do not exhibit category-neutral behaviour, while other root are ROOTS and attain their category syntactically (in line with Marantz 1997, Borer 2005). Both roots and ROOTS can be found within one language, e.g. Lithuanian, while some languages may have only one type, e.g. roots in Blackfoot (chapters 2-3).

In the course of exploring what determines the destiny of roots, I have developed language-specific diagnostics necessary to establish the categorial affiliation of a root. Specifically, I use root-affix interaction to ascertain the categorial affiliation of roots. Although the diagnostics are language-specific, the core principle is the same: c-selectional properties of affixes reveal subsets of roots that fall into particular categories. Crucially, I found that the distributional patterns of roots are not determined by the affixes; rather, the roots encode a category-specific property that affixes select for. In essence, a root-intrinsic property constitutes a particular category.

The formal account builds on the category-intrinsic properties of roots (chapter 4). I cast the category-intrinsic property of a root as feature ***c*** within feature-driven syntax (Adger & Svenonius 2009, Embick & Noyer 2009, Müller 2008, among others), and proposed the following blueprint for categorization:

(71) Feature *c*: content for v, n and a



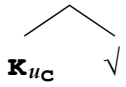
Under this view, the presence and content of the feature ***c*** determines the affiliation with a particular category. As a working hypothesis, I assume a two-way split of categories within subcategories (there is nothing in the system that would prevent the existence of more subcategories). I also assume that affixes may have access to either the categorial or subcategorial level of the featural content. Thus if the feature ***c*** of

nominals is, for example, [Animacy], category-specific suffixes may select for [animate] √nouns, or [inanimate] √nouns, or nouns that encode just [Animacy] without an [animate]/[inanimate] specification.

I have argued that the feature ***c*** is universally available, but its content and interpretability may vary. Thus, while in one language the content of nominal ***c*** is [Animacy], in another language it may be, for example, [Gender].

To accommodate the feature ***c*** syntactically, I have adapted Marantz's (1997) categorization structure and made use of the valuation mechanism of feature-driven syntax. Specifically, in line with Marantz (1997) I have proposed a categorizing head **κ** as a sorting device for roots and ROOTS. I have diverged from Marantz (1997) in that I posit an uninterpretable feature *u**c*** hosted by **κ .**

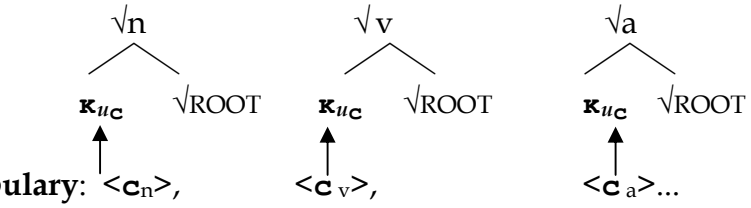
(72)



For the derivation to proceed, **κ** *u***c** needs to be valued. An interpretable feature **c** values **κ** *u***c** via the operation Generalized Agree (adapted from Pesetsky & Torrego 2006): an uninterpretable feature probes for an interpretable feature until valuation occurs.

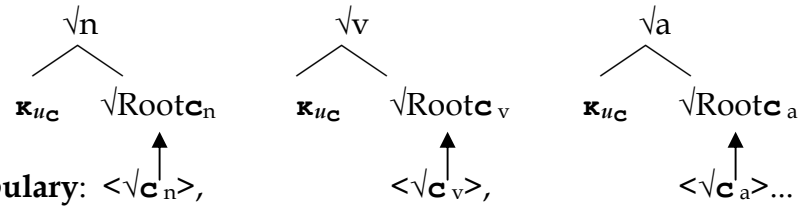
I have argued that the origin of an interpretable feature **c** may differ. If a ROOT merges with **κ** *u***c**, then the feature ***c*** comes either from **Vocabulary** or from a higher head. Given that a ROOT is content only, it may merge with a number of features ***c*** syntactically, hence its category-neutral behaviour:

(73)



In contrast, roots are already endowed with feature ***c*** prior to entering syntax. Once a root merges with $\kappa_{u\mathbf{c}}$, the root provides the interpretable feature ***c***. Given that the root contains a particular feature ***c***, category-neutral behaviour does not occur.

(74)



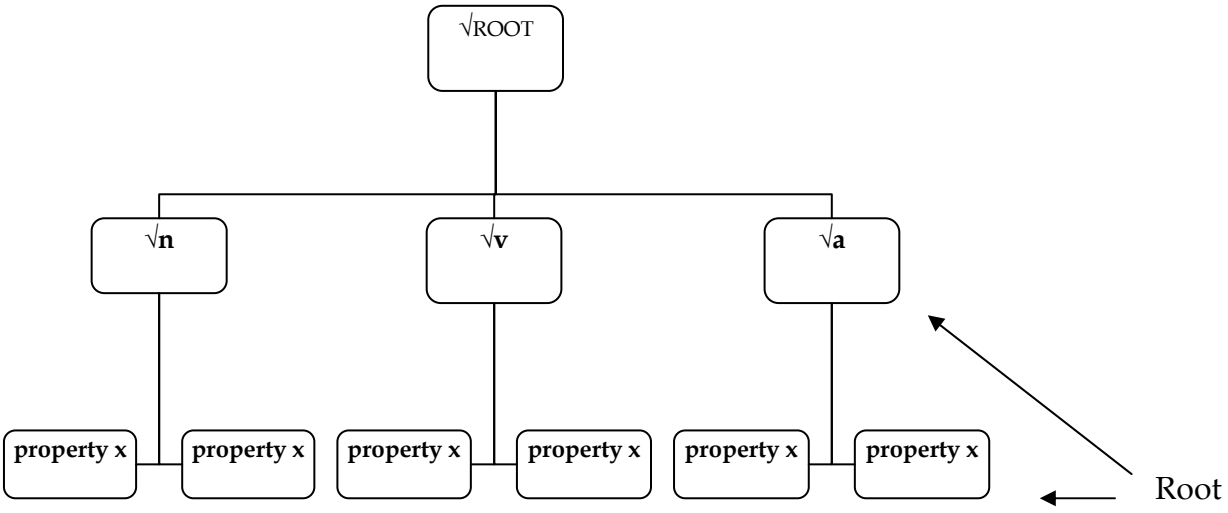
Thus the account captures the existence of both roots and ROOTS, and motivates the difference by the locus of affiliation with feature ***c***. Additional variation is due to language-particular content of feature ***c***.

6.2 Open issues

The proposed account captures the behaviour of roots and ROOTS in Blackfoot and Lithuanian. However, as a result of this study, more questions emerged than could be answered herein. In what follows, I highlight the more prominent empirical, analytical and theoretical issues to be addressed in further research.

Empirical One immediate question that ought to be answered is: how are category-specific affixes organized in the two languages? Recall that I have proposed the following organization for the two types of roots:

(75)



I expect to find that categorial affixes are not homogenous either, and may be organized along similar lines depending on their sensitivity to categorial properties.

Understanding the properties of the affixal system may also lead to a better understanding of what I call linguistic objects of mixed properties, such as Lithuanian participles (briefly mentioned in chapter 5, section 5.1.3), which exhibit properties that pertain both to verbs (tense marking) and to adjectives (pronominal suffixation).
The next large question that has not been addressed at all is the issue of morpho-phonology, i.e. what role does phonology play, if any, in the assignment of a particular inflection, or is it the case that morphological factors alone determine a particular inflection. For example, as noted in chapter 3, there are five declensions in Lithuanian. In essence, there is more than one way to encode the same [Gender]. Assuming that redundancy is avoided in grammar, the number of declensions may indicate further subdivisions within nominal category. In other words, the question is whether the number of declensions is significant in terms of categorization patterns (particular declensions encode particular types of nouns even though they are the same in Gender), or motivated by phonological factors.

Another large issue pertains to the typology of noun taxonomy. The categorization of roots into √nouns is a way of classification. Some languages use

dedicated classifiers to sort nouns (Aikhenvald 2000). The interesting question here is how categorizers relate to classifiers, if at all.

Analytical The most puzzling question to me is why Blackfoot lacks ROOTS. The issue is: what is it in the set-up of the grammatical system that prevents their existence? At the same time, I need to understand why particular roots are ROOTS in Lithuanian, i.e. I have argued that they do not contain an intrinsic feature ***c***, but I have nothing to say as to why this is the case. I speculate that this may be due to the semantics of particular ROOTS.

Another puzzle to be solved is the status of relative roots (akin to prepositional prefixes in English or Lithuanian) and medials (root modifiers) in Blackfoot (briefly discussed in chapter 2, section 2.1.1). On the one hand, they are unlike roots in that they cannot form independent linguistic objects by combining with category-specific affixes. On the other hand, they exhibit root-like properties. Relative roots, for example, could be considered intrinsically transitive since they can introduce an argument.

Theoretical The perspective on categorization taken in this study is feature-driven. Essentially, being of a particular category amounts to having a particular feature. However, there are large questions to be settled with respect to categorial features. What makes a particular feature categorial? What are possible categorial features?

Moreover, it remains to be explored how a particular categorial feature relates to the rest of the grammar of a particular language. For example, we have seen that in both Lithuanian and Blackfoot discourse-level information interacts with categorial features in the nominal domain. Common gender nouns in Lithuanian depend on discourse context for a particular incarnation of gender; while culturally novel entities tend to be assigned animate specification in Blackfoot. How does this interface with discourse take place?

Another issue to be explored is the lack of a categorial feature. For example, I have argued that Blackfoot attributives form an elsewhere category because they do not

have a category-specific feature. What implications does this have to the organization of the grammar as a whole, i.e. what happens with featureless linguistic objects, how does their behaviour change, and how is the lack of features compensated? This perspective is also interesting with respect to language attrition. If, for example, [Gender] is the intrinsic feature of nounhood, how does the breakdown of [Gender]-specification take place (cf. Plaster & Polinsky 2007 on loss of gender in heritage languages)? What are the consequences?

Last but not least I have briefly noted in chapter 3 that features form clusters, e.g. [Gender], [Number] and [Case]. What are the forces that draw features into clusters? What is the hierarchy of such clusters?

Now that I have proposed that features determine the categorial destiny of roots, the next question is what determines the origin and destiny of features?

Bibliography

Abney, Steven. 1987. The English noun phrase in its sentential aspect. Cambridge, MA: MIT dissertation.

Aikhenvald, Alexandra. 2000. Classifiers: A Typology of Noun Categorization Devices. Oxford: Oxford University Press.

Ambrazas, Vytautas. (ed.) 1997. Lithuanian grammar. Vilnius: baltos lankos.

Ambrazas, Vytautas. (ed.) 1994. Dabartinė lietuvių kalbos gramatika. Vilnius: Mokslų ir enciklopedijų leidykla.

Arad, Maya. 2005. Roots and patterns. Dordrecht: Springer.

Adger, David, Svenonius, Peter. 2009. Features in Minimalist Syntax. Manuscript. Available online: http://ling.auf.net/lingBuzz/000825.

Adger, David. 2003. Core Syntax: A Minimalist Approach. Oxford: Oxford University Press.

Baker, Mark. 2008. The Syntax of Agreement and Concord. Cambridge: Cambridge University Press.

Baker, Mark. 2003. Lexical categories. Cambridge: Cambridge University Press.

Baker, Mark. 1996. The Polysynthesis Parameter. NY: Oxford University Press.

Baker, Mark. 1988. Incorporation: A Theory of Grammatical Function Changing. Chicago: University of Chicago Press.

Béjar, Susana, Rezac, Milan. 2009. Cyclic Agree. In Linguistic Inquiry volume 40 (2). 35-73.

Bestien, Betty. 2004. Blackfoot ways of knowing. Calgary: University of Calgary Press.

Bliss, Heather, Gruber, Bettina. 2011. Anchoring participants: the case of Blackfoot proclitics. Talk handout, 21st colloquium of Generative Grammar, Sevilla, April 7-9.

Bliss, Heather, Glougie, Jennifer. 2009. Speaker variation and the phonetic realization of Blackfoot obviation morphology. Proceedings of WSCLA XIV. Vancouver: University of British Columbia Working Papers.

Bliss, Heather. 2005. Topic, Focus and Point of View in Blackfoot. Proceedings of the 24th West Coast Conference on Formal Linguistics, ed. by Alderete, Johnet al. Somerville, MA: Cascadilla Proceedings Project. 61-69.

Bloomfield, Leonard. 1946. Algonquian. Linguistic structures of native America. Viking Fund Publications in Anthropology 6, ed. by Hoijer, Harry. New York: Viking Fund. 85-129.

Borer, Hagit. 2005. The normal course of events. Oxford: Oxford University Press.

Borer, Hagit. 2004. The grammar machine. The Unaccusativity Puzzle: Explorations of the Syntax-Lexicon Interface, ed. by Alexiadou, Artemis, Anagnostopoulou, Elena, Everaert, Martina. Oxford: Oxford University Press. 288-331.

Brittain, Julie. 2003. A distributed morphology account of the syntax of the Algonquian verb. Proceedings of the 2003 Annual Conference of the Canadian Linguistic

Association, ed. by Somesfalean, Stanca, Burrell, Sophie. Montreal: Université du Québec à Montréal. 26-41.
Butt, Miriam. 2006. Theories of case. Cambridge: Cambridge University Press.
Chomsky, Noam. 2000. Minimalist Inquiries: The Framework. Step By Step: Essays In Syntax in Honor of Howard Lasnik, ed. by Martin, Roger, Michaels, David, Uriagereka, Juan. Cambridge: MIT Press. 89–155.
Chomsky, Noam. 1995. *The Minimalist program*. Cambridge: MIT Press.
Chomsky, Noam. 1981b. Lectures on Government and Binding. Dordrecht: Foris.
Chomsky, Noam. 1981a. Principles and parameters in syntactic theory. Explanation in Linguistics, ed. by Hornstein, Norbert, Lightfood, David. 123-146.
Chomsky, Noam. 1970. Remarks on nominalization. Readings in English Transformational Grammar, ed.by Jacobs, Roderick, Rosenbaum, Peter. Waltham: Blaisdell. 184-221.
Chomsky, Noam. 1965. Aspects of the Theory of Syntax. Cambridge: MIT Press.
Cinque, Guglielmo. 1999. Adverbs and Functional Heads. A Cross-Linguistic Perspective. New York: Oxford University Press.
Clark, Eve, Clark, Herbert. 1979. When Nouns Surface as Verbs. Language, 55 (4). 767-811.
Craik, Brian. 1982. The animate in Cree language and ideology. Papers of the 13th Algonquian Conference, ed. by Cowan, William. Ottawa: Carleton University. 29-35.
Crystal, David. 2008. A dictionary of linguistics and phonetics. Oxford: Blackwell.
Corbett, Greville. 2006. Agreement. Canbridge: Cambridge University Press.
Corver, Norbert and Henk van Riemsdijk. (eds.) 2001. Semi-lexical categories. Berlin: Mouton de Gruyter.
Darnell, Regna, Vanek, Anthony. 1976. The semantic basis of the animate/inanimate distinction in Cree. Papers in Linguistics 9. 159-180.
Dahlstrom, Amy. 1995. Motivation versus predictability in Algonquian gender. Papers of the 26th Algonquian Conference ed. by Pentland, David.Winnipeg: University of Manitoba. 52-66.
Davis, Henry, Matthewson, Lisa. 1999. On the functional determination of lexical categories. Révue Québecoise de Linguistique 27. 27–69.
Déchaine, Rose Marie. 1993. Predicates across categories. Amherst: Graduate Linguistic Student association.
Denny, Peter. 1978. Verb class meanings of the abstract finals in Ojibway inanimate intransitive verbs. International Journal of American Linguistics 44. 294-322.
Demirdache, Hamida, Matthewson, Lisa. 1996. On the Universality of Syntactic Categories. Proceedings of the North East Linguistic Society 25. 79-93.
Dixon, Robert, Aikhenvald , Alexandra. (eds.) 2004. Adjective classes. Oxford: Oxford University Press.

Dixon, Robert. 2004. The small adjective class in Jarawara. Adjective classes, ed. by Dixon, Robert, Aikhenvald, Alexandra. Oxford: Oxford University Press. 178-197.
Doetjes, Jenny. 2008. Adjectives and degree modification. Adjectives and adverbs. Syntax, semantics and discourse, ed. byMcNally, Louise, Kennedy, Christopher. NY: Oxford University Press. 123-157.
Dunham, Joel. 2009. Noun incorporation in Blackfoot. Manuscript, University of British Columbia.
Embick, David, Noyer, Rolf. 2007. Distributed Morphology and the Syntax/Morphology Interface. Oxford Handbook of Linguistic Interfaces, ed.by Ramchand, Gillian, Reiss, Charles. Oxford Handbook of Linguistic Interfaces. Oxford: Oxford University Press. 289-325.
Embick, David. 2000. Features, Syntax and Categories in the Latin Perfect. Linguistic Inquiry. Volume 31 (2). 185-230.
Ferrari-Bridgers, Franca. 2007. The predictability of Gender in Italian. Lingua et Linguistica, ed. by Davis, Graeme, Bernhardt, Karl., Shakespeare Centre Press. 146-158
Fillmore, Charles. 1968. The Case for Case. Universals in Linguistic Theory, ed. by Bach, Emmon and Harms, Robert New York: Holt, Rinehart, and Winston. 1-88.
Frantz, Donald, Russell, Lena. 1995. Blackfoot dictionary of stems, roots and affixes. Toronto: University of Toronto Press.
Frantz, Donald. 1991. Blackfoot grammar. Toronto: University of Toronto Press.
Frantz, Donald. 1971. Toward a Generative Grammar of Blackfoot (with Particular Attention to Selected Stem Formation Processes). Summer Institute of Linguistics Publications in Linguistics and Related Fields, 34. Norman: Summer Institute of Linguistics of the University of Oklahoma.
Gelderen van, Elly. 1993. The rise of functional categories. Amsterdam: John Benjamins.
Glougie, Jennifer. 2000. Topics in syntax and semantics of Blackfoot quantifiers and nominals. Vancouver: University of British Columbia MA thesis.
Hale, Ken, Keyser, Samuel. 2002. Prolegomenon to a Theory of Argument Structure. Cambridge: MIT Press.
Hegarty, Michael. 2005. A feature based syntax of functional categories. Berlin: Mouton de Gruyter.
Hirose, Tomio. 2000. Origins of predicates: evidence from Plains Cree. Vancouver: University of British Columbia dissertation.
Hockett, Charles. 1958. A course in modern linguistics. New York: Macmillan.
Jackendoff, Ray. 1985. Semantics and Cognition. Cambridge: MIT Press.
Jackendoff, Ray. S. 1977. X' syntax: a study of phrase structure. Cambridge: MIT Press.
Jelinek, Eloise, Demers, Richard 1994. Predicates and pronominal arguments in Straits Salish. Language 70. 697–736.
Johansson, Sara. 2008. The status of nominal gender in Algonquian: evidence from psych verbs. Proceeding of Canadian Linguistics Association Annual

Conference, ed. by Jones, Susie
http://homes.chass.utoronto.ca/~claacl/actes2008/actes2008.html
Josefsson, Gunlög. 1998. Minimal Words in Minimal Syntax. Word formation in Swedish. Amsterdam: John Benjamins.
Katre, Sumitra, 1987. Astadhyayi of Panini. Austin: University of Texas Press.
Kayne, Richard. 1995. The Antisymmetry of Syntax. Cambridge: MIT Press.
Kinkade, Dale. 1983. Salish evidence against the universality of 'Noun' and 'Verb.' Lingua 60. 25–39.
Kramer, Ruth. 2009. Definite markers, phi-features, and agreement: a morphosyntactic investigation of the Amharic DP. Santa Cruz: UC Santa Cruz dissertation.
Lakoff, 1987. Lakoff, George. 1987. Women, fire, and dangerous things: What categories reveal about the mind. Chicago: University of Chicago.
Lieber, Rochelle. 2004. Morphology and lexical semantics. Cambridge: Cambridge University Press.
Lieber, Rochelle. 1990. On the organization of the lexicon. New York: Garland Press.
Levin, Beth. 1993. English verb classes and alternations. Chicago: University of Chicago Press.
Lowenstamm, Jean. 2008. On n, nP and √. The Sounds of Silence: Empty Elements in Syntax and Phonology, ed. by Hartmann Jutta, Hegedus, Veronika, van Riemsdjik , Henk. Amsterdam: Elsevier. 105-140.
Lyovin, Anatole. 1997. An introduction to the languages of the world. New York: Oxford University Press.
Naktinienė, Gertrūda, Paulauskas, Jonas, Petrokienė, Ritutė, Vitkauskas, Vytatutas, Zabarskaitė, Jolanta (eds.) 1941-2002. Lietuvių Kalbos Žodynas, volume I-XX. Online http://www.lkz.lt.
Noyer, Rolf. 2004. A constraint on intercalss syncretism. Yearbook of Morphology, ed. by Booij, Geert, van Marle, Jan. Dordrecht: Springer. 273-315.
McLaughlin, Fiona. 2004. Is there an adjective class in Wolof? Adjective classes, ed.by Dixon, Robert, Aikhenvald , Alexandra (eds.) Oxford: Oxford University Press. 242-261.
McNally, Louise, Kennedy, Christopher (eds.) 2008. Adjectives and adverbs. Syntax, semantics and discourse. NY: Oxford University Press.
MacKenzie, Marguerite, Marie-Odile Junker, Luci Salt, Elsie Duff, Daisy Moar, Ruth Salt, Ella Neeposh, Bill Jancewicz, Alice Duff, Patricia Diamond, Pearl Weistche & Anna Blacksmith (eds.) 2004-2010. The Eastern James Bay Cree Dictionary on the Web: English-Cree and Cree-English (Northern and Southern dialects). http://dict.eastcree.org/
Marantz, Alec. 1997. No Escape from Syntax: Don't Try Morphological Analysis in the Privacy of Your Own Lexicon. University of Pennsylvania Working Papers in Linguistics, volume 4(2), Proceedings of the 21st Annual Penn Linguistics Colloquium, ed. by Dimitriadis, Alexis, Siegel, Laura, Surek- Clark, Clarissa, Williams, Alexander. 201-225.

Marvin, Tatjana. 2002. Topics in the stress and syntax of words. Cambridge: MIT dissertation.
Montler, Timothy. 2003. Auxiliaries and other categories in Straits Salish. International Journal of American Linguistics 69. 103–134.
Müller, Gereon. 2008. Inflectional Morphology in a Minimalist Grammar. Manuscript, Leipcig.
Pesetsky, David, Torrego, Esther. 2006. Probes, goals and syntactic categories. Proceedings of the 7th annual Tokyo Conference on Psycholinguistics, ed. by Otsu, Yukio. Minato: Keio University.
Plaster, Keith, Polinsky, Maria. 2007. Women are not dangerous things: Gender and categorization. Harvard Working Papers in Linguistics, 12. Cambridge: Harvard University. http://nrs.harvard.edu/urn-3:HUL.InstRepos:3209556
Pollock, Jean-Yves. 1989. Verb Movement, Universal Grammar, and the Structure of IP. Linguistic Inquiry 20(3). 365-424.
Potts, Christopher. 2007. The expressive dimension. Theoretical Linguistics 33(2). 165-197.
Proulx, Paul. 1989. A Sketch of Blackfoot Historical Phonology. International Journal of American Linguistics 55(1). 43-82.
Quinn, Connor. 2004. A Preliminary Survey of Animacy Categories in Penobscot. Manuscript, (updated version of 2001, http://www.conormquinn.com/professional.html)
Quinn, Connor. 2001. A Preliminary Survey of Animacy Categories in Penobscot. Papers of Algonquian Conference 32. 395-426.
Ritter, Elisabeth, Rosen, Sara Thomas. 2009. Blackfoot animacy: implications for event structure and clause structure. Lexical semantics, syntax and event structure, ed. by Hovav, Malka Rappaport, Doron Edit, Sichel, Ivy. Oxford: Oxford Univeristy Press. 124-152.
Ritter, Elisabeth, Wiltschko, Martina. 2009. Varieties of INFL: TENSE, LOCATION, and PERSON. Alternatives to Cartography, ed. by Broekhuis, Hans, van Craenenbroeck, Jeroen, van Riemsdijk, Henk Berlin, New York: Mouton de Gruyter. 153-203.
Rizzi, Luigi. 1997. The Fine Structure of the Left Periphery. Elements of Grammar, ed. by Haegeman, Liliane. Dordrecht: Kluwer Publications. 281-334.
Rizzi, Luigi. 1982. Issues in Italian Syntax. Dordrecht: Foris Publications.
Robins, Robert. 1997. A short history of linguistics. London: Longman.
Rothstein, Suzan. 2004. Structuring events. Hong Kong: Blackwell.
Rullmann, Hotze, You, Aili. 2006. General number and the semantics and pragmatics of indefinite bare nouns in Mandarin Chinese. Where semantics meets pragmatics, ed. by Heusinger, von, Klaus, Turner. Amsterdam: Elsevier. 175-197.

Russell, Lena Heavy Shields, Genee, Inge. 2006. The Blackfoot language: current position and future prospect. Talk at the 38th Algonquian conference, University of British Columbia.
Sapir, Edward. 1921. Language: An Introduction to the Study of Speech. New York: Harcourt.
Sauerland, Uli. 1995. The Late Insertion of Germanic Inflection. Manuscript,MIT.
Siebert, Frank. 1941. Certain Proto-Algonquian consonant clusters. Language 17. 298-303.
Siebert, Frank. 1967. Discrepant consonant clusters ending in *-k in Proto Algonquian: a proposed interpretation of salutatory sound changes. Contributions to anthropology: linguistics I, ed.by DeBlois, Albert Contributions to anthropology: linguistics I. 48-59.
Sohn, Ho-min. 2004. The adjective class in Korean. Adjective classes, ed.by Dixon, Robert, Aikhenvald, Alexandra.Oxford: Oxford University Press. 223-242.
Spencer, Andrew. 2004. English. Morphology, ed. by Booij,Geert, Lehmann, Christian, Mugdan, Joachim. Berlin: Walter de Gruyter. 1255-1267.
Steriopolo, Olga. 2008. Form and function of expressive morphology. Vancouver: University of British Columbia dissertation.
Taylor, Alan. 1969. A grammar of Blackfoot. Boulder: University of Colorado disseration.
Trubetzkoy, Nikolai. 1939. Grundzüge der Phonologie. Travaux du Cercle Linguistique de Prague 7.
Uhlenbeck, Christianus Cornelius. 1938. A concise Blackfoot grammar: based on material from the southern Peigans. Amsterdam: Noord-Hollandsche uitgevers-maatschappij.
Valentine, Randolf. 2001. Nishnaabemwin Reference Grammar. Toronto: University of Toronto Press.
Verkuyl, Henk, de Swart, Henriette, van Hout, Angeliek (eds.) 2005. Perspectives on aspect. Berlin: Springer.
Watanabe, Akira. 2000. Feature copying and binding. Syntax 3(3). 159-181.
Wetzer, Harrie. 1996. The typology of adjectival predication. New York: Mouton de Gruyter.
Wiltschko, Martina. 2009. How do languages classify their nouns? Cross-linguistic variation in the manifestation of the mass/count distinction. Proceedings of WSCLA XIV. Vancouver: University of British Columbia Working Papers.
Wiltschko, Martina. 2005. The syntax of pre-categorial roots. Proceedings of WSCLA X, ed. by Armoskaite, Solveiga, Thompson, James. Vancouver: University of British Columbia Working Papers. 245-258.
Wolfart, Christoph. 1973. Plains Cree. A grammatical study. Philadelphia: The American Philosophical Society.

Appendix A

Verb-transitivity suffix sample

Key:

***** unattested due to semantic reasons
- unattested
? unknown

verb: root or stem	**TA**	**TI**	**INT**	**PSEUDO INT?**	**gloss**
a'p-ssk	o	i	?	?	seek
ihkiit	at	atoo	aa	✓	bake
ihtawa'pss	at	atoo	-	×	be lucky about
iin	o	?	?	?	recognize
iiyika'kim	at	atoo	aa	×	try hard
iitsinik	o	*	i	✓	tell stories
ika'k	i	i	aki	✓	chop
ikamo's	at	atoo	i	✓	steal
o't	o	i	aki	✓	grab
istot	o	i	aki	✓	make/do
ikiiht	o	i	?	?	do to
ikiik	at	atoo	i	✓	win
ikkamss	at	atoo	i	×	be quick with
ikk	at	atoo	i	✓	inflate, blow
ikkiaak	at	atoo	i	?	trap, catch
iksamaoko'si	at	*	i	?	give birth
iksiin	(zero)	i	aki	✓	touch
iksikiin	(zero)	*	aki	✓	awaken
iksiksiimohk	at	atoo	i	?	whistle
iksimi'nikk	t	*	i	?	kill
iksimsst	at	atoo	aa	✓	think/desire
iksisskahk	o	i	aki	✓	nudge
iksisttoksi	i	ii	?	✓	nail together
ikskim	at	*	aa	✓	hunt game
i't	imm[111]	i	aki	✓	feel emotions
inaamaahk	at	atoo	aa	✓	acquire gun
inaan	at	atoo	i	?	own
inaihka's	at	atoo	i	?	act bossy

[111] Suppletion.

verb: root or stem	**TA**	**TI**	**INT**	**PSEUDO INT?**	**gloss**
inakat	(zero)	oo	aki	✓	roll
in	o	i	-	-	see
inihk	ohto	ihtsi	i	✓	sing
innissko	o	*	aki	✓	chase off
innoot	at	atoo	aa	✓	butcher
i'nok	at	atoo	aa	✓	dig
ipapain	o	i	-	×	see in a dream
ipapao'k	at	atoo	aa	×	dream
ipássk	at	atoo	aa	✓	dance
ipikss	at	atoo	i	×	flee
ip	i	ohtoo	?	?	bring
ipotaahk	o	*	aki	✓	flush fowl
ipo	at	atoo	i	✓	speak
isam	ihtsi	ohtoo	?	?	save as a keepsake
istáaapssi	at	atoo	?	?	lazy
istokahk	o	*	aki	✓	trip (someone)
isttapinn	(zero)	i	aki	✓	lace, weave
isttohk	ihtsi	ohtoo	i	?	lie down
isttók	i	i	i/aki	✓	knock on
isttsikaahk	i	i	aki	✓	iron
isttsikáánihka's	at	*	i	✓	bear ill will or resentment
isttsit	at	atoo	aa	✓	roast
isttsíttssk	o	*	imaa	?	dunk into the snow for discipline
i'tsaawaahk	o	*	aa	?	pack the lunch for
itsinik	o	*	i	✓	recount a story
ittahsiinihk	ihtsi	ohtoo	i	✓	sing a song to
ohk	at	*	i	✓	bark at
ohkoon	o	i	imaa	✓	find
ohkot	(zero)	*		?	give
ohpomm	at	atoo	aa	✓	buy
ok	at	atoo	aa	✓	rope/snare
okihka's	at	atoo	i	✓	defy, resist, act bad toward
oksisaissk	o	i	?	✓	chase
okspainn	zero	i	aki	✓	stick to
oks	i/stoo	stoo	aki	✓	read/count

verb: root or stem	**TA**	**TI**	**INT**	**PSEUDO INT?**	**gloss**
ono	o	*	?	?	recognize
onoot	at	atoo	i	✓	desire
oo	at	atoo	i	✓	eat
o't	o	i	aki	✓	take
otot	i	oo	?	?	use as fuel, throw into fire
ottak	o	*	aki	✓	give drink to
sapsski	i	*	?	?	punch on the face
si'k	o	i	?	?	cover, hide
siks	siksip	sikstsi	sikstaki	✓	bite
simi	i	*	i	?	drink, give drink
sina	?(zero)	i	aki	✓	draw, take a picture of
sin	ip	ihtsi	?	?	lick
siso	at	atoo	i	✓	cut into stripes
sokin	zero	*	aki	✓	doctor, treat medically
sopo	at	atoo	i	✓	report
ssiksa'pini	?i	*	?	?	blacken the eye of
ssinn	(zero)	i	aki	✓	break with a hand
ssk	o	i	aa	?	break, cause to be bankrupt
ssksin	o	i	?	?	know
ssksinima't	i	*	?	?	teach
sskska't	omo	i	aki	✓	care for
sspommo	o	*	?	?	help
sst	at	atoo	aa	?	want, desire

Appendix B

Noun pluralization sample

I Simplex nouns

Animate forms

aakii	aaki**iksi**	a'pís	a'pí**iksi**
aakii-ø	aakii- **iksi**	a'pis-ø	a'pis-**iksi**
woman- AN.SG	woman -AN.PL	rope- AN.SG	rope-AN.PL
'woman'	'woman'	'rope'	'ropes'
imitaa	imitaa**iksi**	isttoan	isttoa**iksi**
imitaa-ø	imitaa-**iksi**	isttoan-ø	isttoan**-iksi**
dog- AN.SG	dog -AN.PL	knife- AN.SG	knife -AN.PL
'dog'	'dogs'	'knife'	'knives'
itan	itan**iksi**		
itan- ø	itan-**iksi**		
daughter- AN.SG	daughter- AN.PL		
'daughter'	'daughters'		
kiááyo	kiááyo**iksi**	ko's	ko's**iksi**
kiaayo-ø	kiaayo-**iksi**	ko's- ø	ko's**iksi**
bear- AN.SG	bear- AN.PL	dish- AN.SG	dish- AN.PL
'bear'	'bears'	'dish'	'dishes'
koon	kóón**iksi**		
koon-ø	koon-**iksi**		
ice- AN.SG	ice- AN.PL		
'ice'	'ice cubes'		
nínaa	nína**iksi**	náámaa	náámaa**iksi**
ninaa-ø	ninaa-**iksi**	naamaa-ø	naamaa-**iksi**
man- AN.SG	man- AN.PL	gun- AN.SG	gun- AN.PL
'man'	'men'	'gun'	'guns'
pokon	pokon**iksi**		
pokon-ø	pokon-**iksi**		
ball- AN.SG	ball-AN.PL		
'ball'	'balls'		

oápssp	oápssp**iksi**	óós	óós**iksi**
oapssp-ø	oapssp**-iksi**	oos-ø	oos-**iksi**
eye- AN.SG	eye-AN.PL	derriere -AN.SG	derriere -AN.PL
‘eye’	‘eyes’	‘derriere’	‘derriere’
ookítsis	ookítsi-**iksi**	óótoyi's	óótoyi's**iksi**
ookitsis-ø	ookitsi-**iksi**	ootoyi's-ø	óótoyi's-**iksi**
toe- AN.SG	toe- AN.PL	navel- AN.SG	navel- AN.PL
‘toe/finger’	‘toes/fingers’	‘navel’	‘navels’
otokís	motokíí**iksi**		
otokis-ø	motoki-**iksi**		
skin - AN.SG	skin - AN.PL		
‘skin’	‘skins’		

Inanimate forms

iinán	iiná**ístsi**	iin	iin**istsi**
iinan-ø	iinan-**istsi**	miin-ø	miin-**istsi**
banana- IN.SG	banana -IN.PL	berry IN.SG	berry-IN.PL
‘banana/marrow’	‘bananas/marrows’	‘berry’	‘berries’
i'ksisako	í'ksisako**istsi**	ksááhko	ksááhko**istsi**
i'ksisako- ø	i'ksisako-**istsi**	ksaahko-ø	ksaahko-**istsi**
meat IN.SG	meat -IN.PL	land -IN.SG	land -IN.PL
‘meat’	‘meats’	‘land’	‘lands’
ko’s	ko’s**istsi**	kóópis	kóópi**istsi**
ko’s-ø	ko’s **-istsi**	koopis-ø	koopis-**istsi**
dish- IN.SG	dish- IN.PL	soup -IN.SG	soup- IN.PL
‘dish’	‘dishes’	‘soup’	‘soups’
maatáák	maatáák**istsi**	miisták	miisták**istsi**
maataak-ø	maataak-**istsi**	miistak-ø	miistak-**istsi**
potato- IN.SG	potato- IN.PL	mountain- IN.SG	mountain- IN.PL
‘potato’	‘potatoes’	‘mountain’	‘mountains’
ónnikis	onniki**istsi**	óóhkotok	óóhkotok**istsi**
onnikis-ø	onniki-**istsi**	oohkotok-ø	oohkotok-**istsi**
milk- IN.SG	milk- IN.PL	stone- IN.SG	stone- IN.PL
‘milk’	‘kinds of milks’	‘small stone/rock’	‘small stones/rocks’

ótookis	ótooki**istsi**	ootohtón	ootohtón**istsi**
otookis-ø	otooki-**istsi**	ootohton-ø	ootohton-**istsi**
kidney- IN.SG	kidney- IN.PL	heel- IN.SG	heel- IN.PL
'kidney'	'kidneys'	'heel'	'heels'
ottsis	ottsi**istsi**	owáá	**owáistsi**
ottsis-ø	ottsis-**istsi**	owaa-ø	owaa **-istsi**
gut-IN.SG	gut-IN.PL	egg - IN.SG	egg - IN.PL
'gut'	'guts'	'egg'	'egg s'
napayin	napayin**istsi**		
napayin-ø	napayin-**istsi**		
bread-IN.SG	bread-IN.PL		
'bread'	'breads'		

II Derived nouns

Animate forms

ááattsistaa	ááattsista**iksi**
aaat-tsist-aa- ø -ø	aaat-tsista-**iksi**
move-?-INT- NOMZ-AN.SG	move-?-INT- AN.PL
'rabbit'	'rabbits'
áóttaki	áóttaki**iksi**
ottak-i- ø- ø	ottak-i- ø- **iksi**
serve drinks –INT-NOMZ- AN.SG	serve drinks – INT-NOMZ- AN.PL
'bartender'	'bartenders'
ásokinaki	ásokinaki**iksi**
a-sok-yinn-aki-ø-ø	a-sok-in-aki-ø-**iksi**
IMP-good-handle-INT-NOMZ-AN.SG	IMP-good-handle-INT-NOMZ-AN.PL
'a doctor'	'doctors'
iihtáísínaakio'p	iihtáísínaakio'p**iksi**
iiht-a-i-sinaa-aki-o'p- ø	iiht-a-i-sinaa-aki-o'p-**iksi**
means-IMP-/-write-INT-NOMZ-AN.SG	means-IMP-/-write-INT-NOMZ-AN.PL
'camera'	'camera'

isskimá**a'tsis**	póksskimá**a'tsi**iksi
i-ssk-imaa-**a'tsis**- ø	ohpok-ssk-imaa-**a'tsis**-iksi
?-break-INT-NOMZ	small-break- INT-NOMZ -AN.PL
‘a sharpener ’	‘small sharpeners’
si'káán	nisi'káán**iksi**
si'k-aa-n - ø	n-isi'k-aa-n-**iksi**
cover- INT-NOMZ-AN.SG	POSS -cover- INT-NOMZ-AN.PL
‘blanket’	‘my blankets’
sisóya'tsis	sisóya'tsi**iksi**
siso-i-a'tsis- ø	siso-a'tsis-**iksi**
cut- INT-NOMZ-AN.SG	cut- INT-NOMZ-AN.PL
‘scissors’	‘scissors’

Inanimate forms

aakíípasskaan	aakíípasskaan**istsi**
aakii -ipassk-aa -n- ø	aakii -ipassk-aa -n-**istsi**
woman-dance-INTR-NOMZ- IN.SG	woman-dance-INTR-NOMZ- IN.PL
‘a women's dance’	‘women's dances’
iihtáísínaakio'p	iihtáísínaakio'p**istsi**
iiht-a-i-sinaa-aki-o'p- ø	iiht-a-i-sinaa-aki-o'p-**istsi**
means-IMP-/-write-INT-NOMZ-IN.SG	means-IMP-/-write-INT-NOMZ-IN.PL
‘a pencil’	‘pencils’
isstssimá**a'tsis**	ómahksstssimá**a'tsi**istsi
i -sstss-imaa **–a’tsis**	omahk-sstss-imaa-**a'tsis**-istsi
?**-**burn- INT**-NOMZ**	big-burn- INT-NOMZ-IN.PL
‘a match’	‘big matches’
iitáísooyo'p table	iitáísooyo'p**istsi**
iit-a-iso-oo-i-o'p- ø	iit-a-iso-oo-i-o'p-**istsi**
there-IMP-horizontal-eat-INT-NOMZ- IN.SG	there-IMP-horizontal-eat-INT-NOMZ- IN.PL
‘a table’	‘tables’
ósskitsipahp	ósskitsipahp**istsi**
o-?sski'tsi-pahpo-i- ø- ø	o-?sski'tsi-pahpo-i- ø- ø
?-scared-shiver-INT- NOMZ- IN.SG	?-scared-shiver-INT- NOMZ- IN.PL
‘a heart’	‘hearts’

paapáó'kaan	nipápao'kaan**istsi**
papa- yo'k-aa-n-ø	ni-papa-yo'k-aa-n-**istsi**
in.a.dream-sleep- INT- NOMZ- IN.SG	POSS-in.a.dream-sleep- INT- NOMZ- IN.PL
'a dream'	'my dreams'
sináákia'tsis	sináákia'ts**istsi**
sinaa-aki-a'tsis- ø	sinaa-aki-a'tsis **–istsi**
write- INT- NOMZ- IN.SG	write- INT- NOMZ- IN.PL
'a book'	' books'

Appendix C

Attributive sample

I Attributive root sample

ihta	lucky
iitsiksist	slow
ikimmát	poor, pitiable
ikkahs	humorous funny odd
ikkam	quick
ikkina	slow/soft
iksikk	white/clear/clean
iksist	hot/warm
immak	few, rare, less than normal
inikk	angry
inno	long
i'nák	small
isimi	sly, secretive
itsik	weak
itso	fine
ííyik	strong, hard
maohk	red
ok	bad
omahk	great
sik	black
sok	good
sskonát	potent, strong
sstonnat	extremely/dangerous/awesome
waanat	pretty/cute/nice

II A'pssi/a'pii forms sample

a'pii	IN.INT	be in a specified way
a'pssi	AN.INT	be in a specified way

ihtawa'pssi	AN.INT	be lucky
iitsiksista'pii	IN.INT	be slow
iitsíksista'pssi	AN.INT	be slow
ikimmáta'pssi	AN.INT	be poor, pitiable
ikkinaa'pssi	AN.INT	tame, gentle, peaceful
iksikka'pii	IN.INT	be clean
iksikka'pssi	AN.INT	be clean
immaka'pii	IN.INT	be rare
immaka'pssi	AN.INT	be rare/scarce
isimia'pii	IN.INT	be secret
isimia'pssi	AN.INT	be sly, secretive
itsówa'pii	IN.INT	be of fine quality
itsówa'pssi	AN.INT	be handsome
oka'pii	IN.INT	be bad
oka'pssi	AN.INT	be bad, mean
sika'pii	IN.INT	be obscene, filthy, dirty
sika'pssii	AN.INT	profanely indecent, filthy, dirty
soká'pii	IN.INT	be good
soka'pssi	AN.INT	be good
sskonáta'pii	IN.INT	be potent, strong
sskonáta'pssi	AN.INT	be strong, potent
sstónnata'pssi	AN.INT	be dangerous
(w)ánata'pssi	AN.INT	be cute/prety
(w)áttsa'pssi	AN.INT	be crazy

Appendix D

Light verb samples

-IHKA'S-

ihka'si	INT	behave in a specified manner
isttsikaanihka'sat	TA	bear ill will or resentment toward
isttsikáánihka'si	INT	
itsiiyihka'si	INT	act proud
ohpókihka'siim	TA	affect/pretend affinity with
okihka'sat	TA	
okihka'si	INT	resist/oppose/defy (some authority), misbehave, lit: act bad
sikahkihka'si	INT	be aloof
sstahpíkihka'si	INT	reticent, aloof
waatsimihka'si	INT	act repentant
wa'koyihka'si	INT	act impudent, be insolent
wattsáakiihka'si	INT	behave whorishly (said of a woman)

-ISTOT-

istotsi	TI	build
istotsi	TI	acquire facility in, become experienced at, become good at
anistá'paistoto	TA	take liberties with/ treat with disrespect
a'pistoto	TA	
a'pistotsi	TI	
á'pistotaki	INT	build/make (something)
iipistoto	TA	
iipistotaki	INT	decrease the volume of your work
ikiaahpiksistoto	TA	cheer up, make cheerful
ikimmatsistoto	TA	impoverish/ make pitiable
ikimmatsistotaki	INT	
ikkaahkaanistoto	TA	clean /tidy up
ikkaahkaanistotsi	TI	
ikkahsistoto	TA	joke around with
ikkahsi'taki	INT	
ikkamistotaki	INT	set a fast pace
ikkiniistoto	TA	

ikkiniistotsi	TI	soften
ikohkiistoto	TA	
ikohkiistotaki	INT	cause embarrassment
iksikká'pistoto	TA	
iksikká'pistotsi	TI	
iksikka'pistotaki	INT	clean
inikksistoto	TA	be mean to
inikksistotsi	TI	
i'pistotsi	TI	wet
ipiyistoto	TA	
ipiyistotsi	TI	
ipiyistotaki	INT	disturb s.o. or s.t., cause a disturbance
isttsá'pistoto	TA	taunt, harass, tease
isttsiistoto	TA	
isttsiistotaki	INT	
isttsikánistot	TA	
isttsikánistotoo	TI	
isttsikanistotaki	INT	shine, polish (s.t.)
ohkó'mistoto	TA	treat tactlessly;
ohpiiyistoto	TA	rush, force to act hastily
ohpiiyistotoohsi	INT	hurry oneself;
ohtsistoto	TA	surprise or shock with news;
oksistotaki	INT	be destructive, disruptive
oksistoto	TA	abuse
omatapistoto	TA	overpower
omiistoto	TA	keep occupied/occupy
ooyiistoto	TA	prepare a meal for
saootsstsimistoto	TA	handle roughly and in an inconsiderate manner
sapistoto	TA	appease, or reach an agreement with
satáístoto	TA	purposely do or say something to in order to offend or anger
satsistoto	TA	attempt to distract
siistonaistoto	TA	demean, lower the dignity of
sskitsistoto	TA	beat (physically) severely
sskohtoistoto	TA	
sskohtoistotaki	INT	do s.t. in order to annoy/spite (s.o.), act rebellious
sskohtoistotoohsi	INT	self-destroy, commit suicide
waanatsistotsi	TI	beautify
waapiiwaanistoto	TA	console
waatowa'pistoto	TA	perform a religious act for/ bestow a religious blessing on
waattsiistoto	TA	cheat
yáaksistotoohsi	INT	dress

yaamitaoksistotsi	TI	needlessly destroy, waste
yáápiistotsimat	TA	cause to live according to 'white' (non-Native) culture
yiinapistoto	TA	
yiinapistotaki	INT	haunt (s.o.)
yiipistotsi	TI	reduce the volume or number of (e.g. pile of workpapers)
yisstsiistoto	TA	bother
yootsipistoto	TA	soil
yootsipistotsi	TI	