

The Syntax of Adjectives in Hocak

By

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A dissertation submitted in partial fulfillment of
the requirements for the degree of

Doctor of Philosophy

(Linguistics)

at the

UNIVERSITY OF WISCONSIN–MADISON

2015

Date of final oral examination: 5/14/2015

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Abstract

This thesis explores the syntactic nature of adjectives in the Siouan language, Hocak. I defend the claim that Hocak has the lexical class of adjective (contra the previous descriptions and analyses; see Lipkind 1945, Susman 1943, and Helmbrecht 2006a). First, I present syntactic evidence from three adjective environments for the existence of adjectives in Hocak. I argue that only adjectives can appear in attributive position, with degree modification, and as secondary resultative predicates (cf. Baker 2003a). This supports the works of both Baker (2003a) and Dixon (2004), who argue that adjectives are universal. Next, I provide a case study on Hocak adjective ordering restrictions. I offer evidence that direct adjectival modification does not necessarily have rigid word order. I argue against Cinque (2010); instead, I propose that the ordering of adjectives in Hocak can be accounted for with two functional heads that contain a stack of features that license attributive adjectives (see Georgi and Müller 2010, Manetta 2010). Finally, I present data from superlative adjectives in Hocak and discuss how they provide more evidence for the attributive nature of superlatives cross-linguistically (cf. Matushansky 2008). I claim that superlatives are not bare or nominalized APs in predicative environments. The investigation of superlatives illuminates how NP-ellipsis operates in Hocak. I argue that the Hocak data support a derivational account of NP-ellipsis (Aelbrecht 2010).

Acknowledgments

First of all, I am extremely grateful to Cecil Garvin for teaching me about his language. Without Cecil this thesis could not have been possible. Cecil was always patient and willing to go beyond my basic elicitation questions to help me understand how the language works. I have truly learned a lot. Working with Cecil not only taught me a new language, but it also created a friendship with a wonderful person. *Pijhiraḡigi*, Cecil.

I also like to thank the members of my thesis committee: Yafei Li, Rand Valentine, Monica Macaulay, Becky Shields, and Grant Armstrong. Thank you in particular to Yafei and Rand – my two advisors. Thank you to Yafei for always keeping his door open, for being patient while I formulate my ideas, and for showing me what good argumentation looks like. I have always enjoyed our thought-provoking conversations. Thank you to Rand for introducing me to Hocak and to Cecil Garvin in the spring of 2012 during a field methods class; thank you for all the wonderful times we spent talking about linguistic and non-linguistic topics. Our trips up to Thunder Bay will always be remembered. In addition, thanks to Jackie Drummy for all the support and help with the administrative side of my thesis.

Fieldwork with Cecil was done in a group setting. I would like to express my thanks to the members of that group: Meredith Johnson, Hunter Thompson Lockwood, Sarah Lundquist, and Mateja Schuck. Thanks also to Iren Hartmann for allowing me to use her Hocak Lexique Pro dictionary.

Much of this thesis has been presented at various conferences. Thank you to the audiences

at the 88th and 89th Annual Meetings of the Linguistics Society of America, the 2014 Winter Meeting of the Society for the Study of Indigenous Languages, and the 50th and 51st Chicago Linguistics Society.

To my friends and family, thank you for the continuous support during my time as a graduate student. I am grateful for my family's constant and unyielding encouragement. And thank you to my parents for allowing me to pursue my passion in linguistics, and thank you to my brother Andrew for his friendship and brotherly advice.

Finally, to Meredith, I cannot thank you enough for all that you've done for me these past few years. You are best co-author, collaborator, and friend anyone could hope for. Thank you for reading countless drafts of my work and for pushing me to make my ideas clearer and more concrete; thank you for your patience and for always listening to my half-baked ideas. I truly believe that I learned more from our amazing conversations over beer than in any classroom.

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List of Abbreviations

1, 2, 3	1st, 2nd, 3rd person
ACC	accusative
ACT	active intransitive verb
ASP	aspect
AUX	auxiliary
COMP	complementizer
DECL	declarative
DEF	definite
DEM	demonstrative
DEM.HOR	demonstrative horizontal/moving
DEM.NEUT	demonstrative neutral/sitting
DEM.VERT	demonstrative vertical
DIM	diminutive
GEN	genitive
INDEF	indefinite
NOM	nominative
O	object agreement
PAST	past tense
PL	plural

POS.HOR	horizontal/moving positional auxiliary
POS.NEUT	neutral/sitting positional auxiliary
POS.VERT	vertical positional auxiliary
PROP	proper noun
S	subject agreement
STAT	stative intransitive verb
SUP	superlative

Chapter 1

Introduction

1.1 Introduction and Overview of the Thesis

This thesis explores the syntactic nature of adjectives in the Siouan language, Hocąk. I defend the claim that Hocąk has the lexical class of adjective. Previous descriptions and some analyses (see Lipkind 1945, Susman 1943, and Helmbrecht 2006a) have claimed that Hocąk lacks an adjective class. These works have focused solely on the morphology of lexical items: since verbs and purported adjectives do not differ with respect to inflectional morphology, they conclude that there are no adjectives in the language. I argue in chapter 2 that we need to consider syntactic environments in order to determine whether Hocąk has adjectives. I show that syntactic properties clearly distinguish a separate class of adjectives. This supports the works of both Baker (2003a) and Dixon (2004), who argue that adjectives are universal.

In chapter 3, I explore the organization of adjectives in the Hocąk noun phrase. I compare the adjective orders in Hocąk to Cinque's (2010) framework, which relies on two sources of DP-internal modification: direct and indirect modification. Adjectives in Hocąk are more freely organized than predicted by Cinque and other recent theories of adjective ordering

restrictions. I argue that adjectives in Hocąk are organized by two functional heads, as opposed to Cinque’s model, which uses a series of functional heads to restrict adjective orders.

The position of superlative adjectives is taken up in chapter 4. There, I defend the notion that superlatives cross-linguistically are attributive. In particular, I claim that superlative phrases in Hocąk are always nominal, and that the superlative adjective modifies an elided head noun (cf. Matushansky 2008). The investigation of superlatives also illuminates how NP-ellipsis operates in Hocąk. I argue that the Hocąk data support a derivational account of NP-ellipsis (Aelbrecht 2010).

Overall, this thesis contributes to our understanding of adjectives cross-linguistically by focusing on how Hocąk adjectives behave: adjectives syntactically appear in predictable environments (chapter 2); violations of adjective ordering restrictions are not necessarily indicative of indirect modification, contra Cinque (2010) (chapter 3); and the data from superlatives in Hocąk provides further support for the proposal that superlatives are not bare or nominalized APs in predicative environments (chapter 4). Below, I provide a brief sketch of Hocąk, and then I outline the thesis in more detail.

1.2 Background on Hocąk

Hocąk (also spelled Ho-Chunk and Hoocąk; formerly known as Winnebago) is a Siouan language spoken in central Wisconsin and Nebraska, United States. As of 1997, the language has around 250 speakers (<http://www.ethnologue.com/>). There are three main dialects of Hocąk: Black River Falls (Wisconsin), Dells (Wisconsin), and Nebraskan. This thesis draws on data from Cecil Garvin, who speaks the Black River Falls dialect. Cecil is a native speaker of Hocąk, who is in his 70s. Unless otherwise indicated, all data comes from elicitation with Cecil Garvin. In the rest of this section, I examine some of the basic grammatical properties

of Hocak.

1.2.1 Phonemic Inventory and Orthography

The Hocak consonant and vowel inventories are shown in Tables 1 through 4. These tables only represent phonemic contrasts. Note that when the IPA symbol is different than the grapheme, the grapheme is placed in parentheses to the right of the IPA symbol. This thesis follows the traditional Hocak orthography, which is based on Roman orthography. In addition, two diacritics are used. The hacek or caron is used on the letters *ǧ*, *š*, and *ž*, and the oganek is used on the letters *q*, *i*, and *y* to mark a nasal vowel. Long vowels are written as double vowels.

Table 1
Pulmonic Consonants

	Bilabial	Labiovelar	Alveolar	Postalveolar	Palatal	Velar	Glottal
Stop	p b		d (t)			k, g	ʔ(ʻ)
Fricative			s z	ʃ(š) ʒ(ž)		x ɣ(ǧ)	h
Affricate				tʃ(c) ɟ(j)			
Trill			r				
Nasal	m		n				
Approximate		w			j (y)		

Table 2
Non-pulmonic Consonants

	Labial	Alveolar	Postalveolar	Palatal	Velar
Ejective stop	pʻ	tʻ			kʻ
Ejective fricative		sʻ	ʃʻ (šʻ)		xʻ

Table 3
Oral Vowels

	Front	Central	Back
High	i i:(ii)		u u:(uu)
Mid	e e:(ee)		o o:(oo)
Low		a a:(aa)	

Table 4
Nasal Vowels

	Front	Central	Back
High	ĩ(ĩ) i:(iĩ)		ũ (ũ) ã:(ũũ)
Mid			
Low		ã (ã) ã:(ãã)	

1.2.2 Agreement and Verbs

Hocak is a head-marking language with an active-stative split. Number is not marked on nouns, but on verbs. The active set of person markers is used to index the subject of active intransitive verbs as well as transitive ones. Examples of active intransitive verbs are *nqq* ‘sleep’ and *njip* ‘swim’. The stative set marks the subject of stative intransitive verbs and the object of transitive verbs. Examples of stative intransitive verbs include *šiiibre* ‘fall’ and *ziibre* ‘melt’. The active set of person markers is shown in Table 5 and the stative set is shown in Table 6.

Table 5

Active Person Marker Set (adapted from Helmbrecht 2006b)

	Singular	Dual	Plural
1 inclusive	—	hĩ-	hĩ-...-wi
1 exclusive	ha-	—	ha-...-wi
2	ra	—	ra-...-wi
3	Ø-	—	-ire

Table 6

Stative Person Marker Set (adapted from Helmbrecht 2006b)

	Singular	Dual	Plural
1 inclusive	—	waąga-	waąga-...-wi
1 exclusive	hĩ-	—	hĩ-...-wi
2	nĩ-	—	nĩ-...-wi
3 (subject)	Ø-	—	-ire
3 (object)	Ø-	—	wa-

Note that in contrast to the 1st and 2nd person marking, the 3rd person markers show a nominative-accusative alignment. 3rd person singular is null, whereas 3rd person plural subjects are indexed with *-ire* and 3rd person plural objects with *wa-*. (1a,b) show an active and stative verb, respectively, with a plural subject while (1c) illustrates a transitive verb with a plural object marked by *wa-* on *ruwĩ* ‘buy’.

- (1) a. Hinũkra wašiire.
 hinũk-ra waši-**ire**
 woman-DEF dance.ACT-3PL.S
 ‘The women danced.’
- b. Wąąkra šiibaire.
 wąąk-ra šiibre-**ire**
 man-DEF fall.STAT-3PL.S
 ‘The men fell.’

- c. Cecilga wažatirera waruwj.
 Cecil-ga wažatire-ra **wa**-Ø-ruwj
 Cecil-PROP car-DEF 3PL.O-3S-buy
 ‘Cecil bought the cars.’

Hocak is similar to other Siouan languages in that nominal arguments (subjects and objects) can be freely omitted from the sentence. Consider the examples in (2), where the two arguments (agent and theme/patient) can be dropped.

- (2) a. Wijukra šuykra hoxataprookeeja haja.
 wijuk-ra šuyk-ra hoxatap-rook-eeja Ø-haja
 cat-DEF dog-DEF woods-inside-there 3S-see
 ‘The cat saw the dog in the woods.’
- b. Hoxataprookeeja haja.
 hoxatap-rook-eeja Ø-haja
 woods-inside-there 3S-see
 ‘[The cat] saw [the dog] in the woods.’ (Johnson et al. 2014, (10))

1.2.3 Positionals

Hocak has a set of elements, traditionally called “positionals,” which describe what position the subject is in (e.g., sitting, standing, or lying down). All three positionals are outlined in Table 7. The positionals in Table 7 represent the 3rd person singular forms. 3rd person plural forms neutralize to *-naqk*. When they are used with local forms, they inflect (see Garvin and Hartmann 2011 for more details).

Table 7
 Positionals in Hocak

Position	Morpheme
Standing	-jee
Sitting (neutral)	-naḱ
Lying down/moving/horizontal	-aḱ

They are primarily used with the auxiliary verb *wa'y-*, as exemplified in (3a) with the standing positional *-jee*, in (3b) with the sitting (neutral) positional *-nak*, in (3c) with the moving/lying down positional *-ak* and in (3d) with the plural positional *-naak*.

- (3) a. Naara sgaasgap wa'ujee.
 naa-ra sgaasgap Ø-wa'uj-**jee**
 tree-DEF sticky 3S-AUX-POS.VERT
 'The tree is sticky.'
- b. Hunterga wamašja wa'unakšana.
 Hunter-ga wamašja Ø-wa'uj-**nak**-šana
 Hunter-PROP strong 3S-AUX-POS.NEUT-DECL
 'Hunter is strong (sitting there).'
- c. Waagax te'e staak wa'ukšana.
 waagax te'e staak Ø-wa'uj-**ak**-šana
 paper this flat 3S-AUX-POS.HOR-DECL
 'This paper is (lying) flat.'
- d. Hoo že'e saagre wa'unakšana.
 hoo že'e saagre wa'uj-**naak**-šana
 fish that fast AUX-POS.3PL.S-DECL
 'Those fish are fast.'

1.2.4 Word Order

The basic word order in Hocak is subject-object-verb (SOV). As illustrated in (4), the subject *hinukra* 'the woman' precedes the object *wažatirera* 'the car', which is to the left of the verb *ruwį* 'buy'.

- (4) Hinukra wažatirera ruwį.
 hinuk-ra wažatire-ra Ø-ruwį
 woman-DEF car-DEF 3S-buy
 'The woman bought the car.'

Hocak also has relatively free word order. Phrases can appear to the left or the right of their canonical positions. A change in word order has discourse-informational effects, as

hinted at by the English translations. A leftward moved noun phrase is associated with a focus (or topic) interpretation, while a rightward moved noun phrase is interpreted as an anti-topic (discourse-old); see (5a–e). Commas are used to represent intonational breaks.

- (5) a. Wažatirera, hinukra ruwɪ.
 wažatire-ra hinuk-ra Ø-ruwɪ
 car-DEF woman-DEF 3S-buy
 ‘The car, the woman bought (it).’
- b. Hinukra ruwɪ, wažatirera.
 hinuk-ra Ø-ruwɪ wažatire-ra
 woman-DEF 3S-buy car-DEF
 ‘The woman bought something, the car.’
- c. Wažatirera ruwɪ, hinukra.
 wažatire-ra Ø-ruwɪ hinuk-ra
 car-DEF 3S-buy woman-DEF
 ‘Someone bought the car, (it was) the woman.’
- d. Ruwɪ, wažatirera, hinukra.
 Ø-ruwɪ wažatire-ra hinuk-ra
 3S-buy car-DEF woman-DEF
 ‘Someone bought something, (it was) the car, the woman.’
- e. Ruwɪ, hinukra, wažatirera.
 Ø-ruwɪ hinuk-ra wažatire-ra
 3S-buy woman-DEF car-DEF
 ‘Someone bought something, (it was) the woman, the car.’
- (Johnson et al. 2014, (8))

In double object constructions, the canonical word order is subject–indirect object–direct object–verb. This is shown below in (6).

- (6) Hinukniłhižą hocɪɕhižą wiiwagaxhižą hok’u.
 hinuk-nɪk-hižą hocɪɕ-hižą wiiwagax-hižą Ø-hok’u
 woman-DIM-INDEF boy-INDEF pencil-INDEF 3S-give
 ‘A girl gave a boy a pencil.’

In Hocak, word order is crucial to disambiguate the subject from the object: with neutral intonation, the first argument is interpreted as the subject. In (7), the first interpretation of the sentence (although pragmatically unlikely) is the only one with neutral intonation; however, the second interpretation is only possible if there is a pause after ‘car’.

- (7) Wažatirera hinukra ruwı.
 wažatire-ra hinuk-ra Ø-ruwı
 car-DEF woman-DEF 3S-buy
 ‘The car bought the lady.’ OR ‘The lady bought the car.’

Hocak is a *wh*-in-situ language. In subject-oriented questions, the *wh*-word remains at the left-edge of the clause; see (8).

- (8) Peežega wažatirera ruwı.
 peežega wažatire-ra Ø-ruwı
 who car-DEF 3S-buy
 ‘Who bought the car?’

The examples in (9) illustrate that the object remains between the subject and the verb when it is questioned. Note that *jaagu* ‘what’ can also appear in initial position of the clause.

- (9) a. Cecilga jaagu ruwı
 Cecil-ga jaagu Ø-ruwı
 Cecil-PROP what 3S-buy
 ‘What did Cecil buy?’
 b. Jaagu Cecilga ruwı
 Jaagu Cecil-ga Ø-ruwı
 what Cecil-PROP 3S-buy
 ‘What did Cecil buy?’

The declarative marker *-šqnaq* surfaces at the rightright of verbal and adjectival predicates of a sentence that makes a statement. However, it can only appear with words that end in a consonant. (10a) shows that when a verb ends in a consonant, it takes *-šqnaq*. In contrast,

(10b) illustrates that since the verb *šiibre* ‘fall’ ends in a vowel, it does not bear *-şanq*. Moreover, *-şanq* cannot be used in interrogative or imperative sentences.

- (10) a. Hocıckra nji eeja njişana.
 hocıcj-njk-ra nji eeja Ø-njiş-şana
 boy-DIM-DEF water there 3S-swim.ACT-DECL
 ‘The boy swam in the lake.’
- b. Hunterga šiibre(*şana).
 Hunter-ga Ø-šiibre-şana
 Hunter-PROP 3S-fall.STAT-DECL
 ‘Hunter fell.’

1.2.5 Nouns

Nouns in Hocak can appear with a variety of determiners and demonstratives. The determiners *-ra* and *-hižq* encode definiteness and indefiniteness, respectively. Each of these are illustrated on the subjects of (11a) and (b).¹

- (11) a. Wijukra waši.
 wijuk-ra Ø-waši
 woman-DEF 3S-dance.ACT
 ‘The woman danced.’
- b. Waqkhižq šiibre.
 waqk-hižq Ø-šiibre
 man-INDEF 3S-fall.STAT
 ‘A man fell.’

Hocak has two broad types of demonstratives. The first type only denotes proximal or distal relationships (i.e., ‘this’ or ‘that’). An example of each is shown in (12).

¹In Hocak, determiners and demonstratives are phonologically bound. Throughout the dissertation, I will refer to *-ra* as a definite determiner and *-hižq* as an indefinite determiner. I do not discuss whether these determiners are suffixes or clitics. This also applies to positional demonstratives (see below).

- (12) a. Naa te'e sgaasgapšana.
 naa te'e Ø-sgaasgap-šana
 tree this 3S-sticky-DECL
 'This tree is sticky.'
- b. Wijukra šuyk že'e haja.
 wujuk-ra šuyk že'e Ø-haja
 cat-DEF dog that 3S-see
 'The cat saw that dog.' (Johnson et al. 2014, (11a))

The other type of demonstrative marks not only proximal and distal relationships, but also the position of the noun that it modifies. These demonstratives are related to the verbal positionals seen in section 1.2.3, and are phonologically bound to the noun. The 3rd person singular forms are displayed in Table 8. 3rd person plural forms neutralize to *-nqaka*. In (13), an example of each distal positional demonstrative is shown. Lastly, proper nouns (e.g., the names of people) are marked by *-ga*.

Table 8
 Positional Demonstratives in Hocak

Position	Proximal	Distal
Standing	-jaane	-jeega
Sitting (neutral)	-nəkre	-nəka
Lying down/moving	-əkre	-əka

- (13) a. Naajeega sgaasgapšana.
 naa-jeega Ø-sgaasgap-šana
 tree-DEM.VERT 3S-sticky-DECL
 'That tree (there) is sticky.'
- b. Wijuknəka p'oop'oššana.
 wujuk-nəka Ø-p'oop'oš-šana
 cat-DEM.NEUT 3S-fluffy-DECL
 'That cat (there) is fluffy.'

- c. Waagaxaḳa parasšana.
 waagax-aḳa Ø-paras-šana
 paper-DEM.HOR 3S-flat-DECL
 ‘That paper (there) is flat.’

1.3 Structure of the Thesis

The rest of the thesis is organized as follows. In chapter 2, I argue that Hocak has adjectives. I begin by reviewing the previous descriptive claims. Lipkind (1945), Susman (1943), and Helmbrecht (2006a) show that stative verbs and adjectives behave similarly morphologically in that they take the same agreement (inflectional) morphology. However, I present evidence adjectives are a separate lexical class in the language. Adjectives exist in three main environments. First, adjectives appear in attributive position, whereas previous analyses would treat them as predicative. They have non-intersective readings, which should not be possible in predicate position. Attributive adjectives also do not have to agree with their head noun, while verbs in relative clauses must. Attributive adjectives also can be stranded under noun phrase ellipsis. In contrast, the head nouns in relative clauses must be overt. Second, adjectives surface as complements of degree heads. Adjectives can be modified by *eegišge* ‘too’ and the superlative morpheme *ho-...-xji*. Verbs, on the other hand, are ungrammatical with these degree modifiers. The last environment is secondary resultative predication. Verbs are barred from this position, while adjectives are grammatical. I offer an explanation for each of these contrasting environments using syntactic machinery in Chomsky 2000, 2001 and Higginbotham 1985 (among other works). Specifically, I assume that the main difference between verbs and adjectives is that verbs have an event-role. This prevents verbs from appearing in attributive position, as the complement of degree heads, and as resultative secondary predicates. In each of these positions, the event-role of the verb cannot be bound by a local Tense head. Adjectives, on the other hand, do not have an event-role; thus, they can

appear in all three of these environments without violating any principles of the grammar.

In chapter 3, I present an analysis of the adjective ordering facts from Hocak. I first review the adjective ordering facts and their interpretations. I then compare the Hocak data to Cinque’s (2010) theory. However, I argue that the data are not compatible with Cinque: while Cinque’s structure can largely account for the order of adjectives in Hocak, it faces problems when it comes to accounting for their interpretation. Instead, I propose that the ordering of adjectives in Hocak can be accounted for with two functional heads that contain a stack of features that license attributive adjectives (see Georgi and Müller 2010, Manetta 2010). Multiple features on a single head result in multiple specifiers, and the ordering of APs is determined by the stack of features on each functional head. Under this approach, the burden of determining language-specific word order is not in the narrow syntax (as in Cinque’s approach), but in the lexicon/functional vocabulary (cf. Borer 1984). I then extend this approach to English and Japanese adjective orders.

In chapter 4, I present data from superlative adjectives in Hocak and discuss how they provide more evidence for the attributive nature of superlatives cross-linguistically (cf. Matushansky 2008). Based on distributional evidence, I show that superlatives behave like nouns in predicative environments. I argue that the Hocak data cannot be accounted for under either the standard view that predicative superlatives are a “subkind” of adjective or an analysis in which the superlative adjective is nominalized by a null affix. Instead, superlatives modify an elided head noun. I follow derivational theories of ellipsis (e.g., Aelbrecht 2010) and assume that D is the licensing head for NP-ellipsis (Lobeck 1995). I conclude that Aelbrecht’s derivational approach provides a natural account of the Hocak data.

Overall, this thesis contributes to a greater understanding of the lexical category adjective by exploring its distribution in a variety of syntactic environments. I defend the claim that adjectives are a universal lexical category by providing evidence that they appear in environments where nouns and verbs do not. Then I show that the order of DP-internal

adjectives reveals that direct modification adjectives can also have free word order. Lastly, I give several pieces of evidence that superlatives are always attributive. In addition, this thesis advances our understanding of Hocak from a theoretical perspective.

Throughout the thesis, I assume the Minimalist framework (see e.g., Chomsky 1995, 2000, 2001). Other assumptions will be introduced along the way.

Chapter 2

The Existence of Adjectives in Hocak

2.1 Introduction

This chapter explores the nature of adjectives in Hocak and argues that the lexical category adjective exists in the language. The descriptive works by Lipkind (1945) and Susman (1943) claim that Hocak lacks the lexical category adjective, and that the items that correspond to adjectives in Indo-European languages form a class of stative verbs in Hocak. Similarly, Helmbrecht (2006a) has argued there are no adjectives in Hocak since there is no distinct inflectional morphology between adjectives and verbs. Rather he follows the traditional literature and claims that adjectives are stative verbs. Helmbrecht concludes with the following:

Evidence for this result can be found in the morphology and syntax of the property words. There is no adjective category establishing morphology . . . nor is there any derivational morphology that involves the change of the syntactic category of words . . . Modification – the prototypical function of adjectives – is expressed by either by modifying intransitive verbs in the NP or by alternative constructions in Hocak involving nouns. (Helmbrecht 2006a:314–315)

- (17) a. xeteire
 xete-ire
 big-3PL.S
 ‘They are big.’
- b. Hunterga maąšja na.
 Hunter-ga Ø-maąšja na
 Hunter-PROP 3S-strong can
 ‘Hunter can be strong.’
- c. Wijukra seepšana.
 wijuk-ra Ø-seep-šana
 cat-DEF 3S-black-DECL
 ‘The cat is black.’

Note that like verbs, purported adjectives in predicative environments do not appear with a copular verb. By comparison, predicative nouns require copular support, such as with the copula *here* ‘be’ in (18).

- (18) Cecilga wagigushiža here.
 Cecil-ga wagigus-hiža Ø-here
 Cecil-PROP teacher-INDEF 3S-be
 ‘Cecil is a teacher.’

In this chapter, I claim that the lexical category adjective exists in Hocak, contra the previous claims. I show that a class of elements behaves differently than (stative) verbs in three major environments: attributive position, with degree modification, and in secondary resultative predication (cf. Baker 2003a). In particular, I argue that *seep* ‘black’ in (15) is in an attributive position and not in a relative clause, as will be shown by the fact that adjectives exhibit a different agreement pattern than stative verbs. In predicative environments, as in (17), I claim that purported adjectives are complements of a null copula. Although verbs and adjectives appear to be the same category, I argue that the apparent lack of adjectives in Hocak is an illusion.

The goal of this chapter is not to provide a theory of lexical categories, or what the universal properties of adjectives are. Rather, I make a modest contribution to the nature of adjectives cross-linguistically by focusing on how Hocak adjectives behave. This chapter offers several pieces of evidence through diagnostics established by Bolinger (1967) and Baker (2003a) that Hocak has a distinct lexical category of adjective. While we find adjectives in Hocak in the places predicted by Baker, I will provide an alternative account for why only adjectives may appear in those particular environments.

The rest of this chapter is organized as follows. I begin this chapter by reviewing the traditional arguments for the lack of adjectives in Hocak in section 2.1.1. In section 2.1.2, I introduce my own assumptions of lexical categories with respect to Hocak. Despite the data presented in section 2.1.1, sections 2.2 and 2.3 provide new data that adjectives must exist in Hocak. I show that adjectives can appear in attributive environments, with degree phrases, and as resultatives predicates. After that, in section 2.4, I examine predicate adjectives and argue that they are complements of a null copula. Section 2.5 provides a brief discussion of typological considerations. Finally, section 2.6 concludes the chapter.

2.1.1 Previous Criteria for The Lack of Adjectives in Hocak

Previously, it has been argued that Hocak has only two lexical categories: nouns and verbs. A third, though less mentioned category, is particles or adverbs. Helmbrecht (2006a:290) in particular follows Dixon's (1982) seminal work, which argues that there are three types of languages with respect to adjectives, as outlined in (19).

- (19) a. Languages that have an open class of adjectives (e.g., English, German, and other Indo-European languages).
- b. Languages that have a closed class of adjectives (e.g., Swahili (Bantu) and Hua (Papau New Guinea)).

- c. Languages that have no adjectives at all.

Helmbrecht claims that Hocak falls into the third class (19c): Hocak lacks the lexical category adjective; rather these elements are stative verbs. This section specifically looks at Helmbrecht's three arguments that Hocak does not have adjectives. These arguments show that verbs and adjectives behave similarly on the surface, which leads Helmbrecht to his conclusion. In the sections that follow, we will find instead that these data are not this simple, and that a closer look reveals that Hocak has adjectives.

First, Helmbrecht (2006a) claims that there is no category-establishing morphology with respect to adjectives. Recall that Hocak has an active-stative split between intransitive verbs. Helmbrecht notes that “adjectives” and stative verbs exhibit parallel agreement morphology, as shown in (20) and (21).

- | | | | | | | |
|------|----|--|----|--|----|---|
| (20) | a. | <i>hṣiibre</i>
<i>hṣi-ṣiibre</i>
1-fall
'I fell.' | b. | <i>nṣiibre</i>
<i>nṣi-ṣiibre</i>
2-fall
'You fell.' | c. | <i>ṣiibraire</i>
<i>ṣiibre-ire</i>
fall-3PL.S
'They fell.' |
| (21) | a. | <i>hṣixete</i>
<i>hṣi-xete</i>
1-big
'I am big.' | b. | <i>nṣixete</i>
<i>nṣi-xete</i>
2-big
'You are big.' | c. | <i>xeteire</i>
<i>xete-ire</i>
big-3PL.S
'They are big.' |

Example (20) illustrates that the stative set of agreement markers may be used with “adjectives.” In (20a,b), *hṣi-* and *nṣi-* mark 1st and 2nd person respectively, and in (20c) *-ire* encodes 3rd person plural. The example in (21) with the stative verb *ṣiibre* ‘fall’ shows that this verb bears the same agreement markers. Since Hocak is an active-stative language, the similarities between (20) and (21) follow if “adjectives” are stative verbs.

Helmbrecht furthers the claim that there is no category-establishing morphology for “adjectives” by asserting that Hocak does not have morphology that measures gradable proper-

ties, such as comparatives or superlatives. Thus, Helmbrecht (2006a) concludes that “adjectives” are not distinguished from stative verbs through inflectional morphology.

Second, Helmbrecht claims that there is no category changing morphology for “adjectives.” That is, Helmbrecht argues that the presence of category altering morphology provides another means to test lexical categories in a language. For example in English, the morpheme *-able* may change a verb into an adjective (*to agree* → *agreeable*). Hocak does not possess any derivational morphology that derives adjectives from verbs, or verbs from adjectives. The closest parallel that Hocak has to such derivational morphology is the causative verb *hii* ‘do, make’, which takes an “adjectival” predicate as its complement, as shown in (22).

- (22) a. sara ‘to be oily’ ~ sara hii ‘to oil’
 b. sgaagre ‘to be molten’ ~ sgaagre hii ‘to melt’
 c. sgee ‘to be clean’ ~ sgee hii ‘to clean’
 (Helmbrecht 2006a:301)

Since Hocak does not have morphology that is specific to an “adjective” class, he concludes that from a morphological point of view Hocak does not have the open class “adjective.” Rather, “adjectives” are no different than stative verbs in Hocak.

Helmbrecht’s third and final argument is that “adjectives” and stative verbs have the same distribution in Hocak. For example, when “adjectives” modify a noun in an NP-internal position, the “adjective” is between the head noun and the determiner, as demonstrated in (23). Helmbrecht notes that the same position that is filled by an “adjective” can be filled by a verb, as in (24).

- (23) Meredithga wagax hakiruxara ceekra ruwɿ.
 Meredith-ga wagax hakiruxara ceek-ra Ø-ruwɿ
 Meredith-PROP book new-DEF 3S-buy
 ‘Meredith bought the new book.’

- (24) Bryanga wəək taanɨ hɨra, hɨkɨpa.
 Bryan-ga wəək taanɨ Ø-hɨɨ-ra, Ø-hɨkɨpa
 Bryan-PROP man tobacco 3S-suckle-COMP 3S-meet
 ‘Bryan met the man who smokes.’

Helmbrecht analyzes sentences like (24) as a relative clause with *wəək* ‘man’ as the head noun. He suggests that relative clauses in Hocək are head external, as roughly schematized in (25).

- (25) NP – [Ø_{RelPro} + Predicate + Det]

Since the predicate of the relative clause can be filled by an intransitive or a transitive verb, Helmbrecht claims that this is additional evidence that “adjectives” are actually verbs in Hocək. In other words, Helmbrecht contends that “adjectives” are verbs based on the linear parallels between relative clauses and attributive modification.

Moreover, “adjectives” can be used predicatively without any morphological modification or without the help of auxiliaries, as seen in (26). Helmbrecht asserts that the lack of auxiliaries is possible for all “adjectives” in Hocək. This possibility extends to verbs as well. (27) shows an example of the verb *nɨɨp* ‘swim’.

- (26) Wijukra seepšana.
 wijuk-ra Ø-seep-šana
 cat-DEF 3S-black-DECL
 ‘The cat is black.’
- (27) Hocɨɨkra nɨɨ eeja nɨɨpšana.
 hocɨɨk-ra nɨɨ eeja Ø-nɨɨp-šana
 boy-DEF water there 3S-swim.ACT-DECL
 ‘The boy swam in the lake.’

Thus, since “adjectives” and verbs may also be the main predicate of the clause, there is no structural difference between “adjectives” and verbs. Recall that nouns are different in that they require a copula in predicate position (see (18) above).

However, there are multiple issues with this analysis that I will explore in the remainder of the chapter. Before I introduce the larger issues, Helmbrecht’s criterion that adjectives do not have specific derivational morphology is problematic. For one, nouns in Hocak also do not bear any nominalizing morphology. It has been claimed by Lipkind (1945) that *wa-* is a type of nominalizer that usually adds the meaning of ‘thing’. According to Helmbrecht (2006b), a number of nouns are formed this way, but the addition of *wa-* is not productive, and such nouns appear to be lexicalized. This does not seem to be compelling evidence for the notion that there are no adjectives in Hocak.

Helmbrecht adds that Baker’s (2003a) theory, which claims that all languages have adjectives, is problematic when considering the data from Hocak. Baker claims that adjectives are found in three main environments: attributive position, as complements of degree phrases, and as secondary resultative predication. However, Helmbrecht does not consider any of these syntactic environments. He investigates the morphological similarities between adjectives and verbs, and a few syntactic positions. The proposal that I put forth in the next section argues that the positions predicted by Baker’s (2003a) theory are precisely where we find differences between adjectives and verbs in Hocak. While I do not follow Baker’s particular theory, I will show that adjectives exist in these predictable environments in Hocak.³

2.1.2 Outline of Proposal

This section outlines my proposal for adjectives in Hocak. In this chapter, I adopt a “traditional” theory of lexical categories, following Williams (1981), Higginbotham (1985), and Zwarts (1992). Higginbotham (1985), in particular, proposes that verbs and adjectives both carry thematic (semantic) roles. Like verbs, adjectives are claimed to have theta-roles;

³Baker (2003a,b) argues that only adjectives can be in three environments because they do not have referential indices (cf. nouns) or theta-roles (cf. verbs). Whether we follow Baker’s theory or the one that I present in the next section does not make a difference when analyzing the Hocak data. Both approaches can correctly account for the distribution of adjectives in contrast to other lexical categories.

however, a verb includes a position in its thematic grid that corresponds to an “event” (represented by “E”). Higginbotham, among others, has referred to this event as an e-role. The e-role of a verb must be bound by a local T(ense) projection (cf. Enç 1986, 1987). I also follow approaches where adjectives have “grade”-roles (represented by “G”; degree arguments) (see Zwarts 1992, Corver 1997). In line with Williams (1981), nouns lack theta-roles, but they do have “referent”-roles (represented by “R”). The proposal is summarized in (28).⁴

(28) *Representations for verbs, adjectives, and nouns*

- a. verb = *buy* ⟨E, Ag, Th⟩
- b. noun = *ball* ⟨R⟩
- c. adjective = *green* ⟨G, Th⟩

I do not follow all of the assumptions of Zwarts (1992). He proposes that stative verbs like *live* and *know* do not have an e-role. Instead, I follow Higginbotham (1985), and I assume that all verbs have an e-role. This means that both stative verbs like *live* in English and stative verbs in Hocak have an e-role. With such verbs, the state is the event.

However, I do follow Zwarts’ (1992) and Corver’s (1997) idea that non-gradable adjectives do not have grade-roles. A non-gradable adjective has the representation in (29). Contrast (29) with (28c).

(29) adjective = *dead* ⟨Th⟩

Moreover, I assume the theta criterion in (30) (Higginbotham 1985:561).

(30) Every thematic position is discharged.

This means that verbs and adjectives need to assign all of their theta-roles, and that nouns must receive a theta-role. (30) also requires a verb to bind its e-role to a T head, and an adjective to bind its grade role to a degree head.

⁴“Ag” and “Th” refer to Agent and Theme, respectively.

It should be noted that Baker (2003a) takes a different position with respect to e-roles. He follows works by Kratzer (1989) and Diesing (1992), who claim that the difference between an individual- (permanent) and stage-level (temporary) adjective is dependent on whether the adjective has an e-role. Individual-level adjectives do not have an e-role, while stage-level ones do. As a result, Baker contends that since verbs and some adjectives have e-roles, the presence of an e-role is not a defining factor of lexical categories. However, using e-roles is not the only way to analyze the difference between individual- and stage-level adjectives. Chierchia (1995) argues that individual-level predicates are generic. Under his analysis, individual-level predicates inherently have a [+Q] feature that must be checked by a local generic operator (Gen). The [+Q] (for “quantificational”) feature is considered an agreement feature. If this feature is not checked by an appropriate adverb, such as a null Gen, the structure is ungrammatical. According to this proposal, adjectives are not associated with e-roles; rather individual-level adjectives contain a [+Q] feature, while stage-level adjectives do not. He points out that Kratzer’s and Diesing’s analyses work well for indefinites; however, it is not clear how to ensure that a sentence like the one in (31) is a generic.

(31) John is tall.

Chierchia’s approach does not face this issue, as *tall* has the [+Q] feature, and thus will be in the scope of Gen. In this thesis, I will assume Chierchia’s proposal with respect to the difference between individual- and stage-level adjectives.

The main claim of this chapter is that Hocak has the lexical category, adjective.⁵ Baker (2003a) and Dixon (2004) have argued that all languages have adjectives even if their properties differ from those found in Indo-European languages. Thus, as a typological consequence, this chapter provides further evidence for Baker’s (2003a) and Dixon’s (2004) claim that adjectives exist in every language.

⁵Since the claim of this chapter is that adjectives are not stative verbs, I will put aside any discussion of how this framework handles the syntactic environments of nouns.

2.2 Evidence for Attributive Modification

This section offers the first set of evidence for the existence of adjectives in Hocak. The data presented in 2.2.1 to 2.2.3 support the claim that these elements can modify nouns attributively, while verbs cannot.⁶ The general argument of this section is that adjectives can modify a noun attributively because they do not have e-roles. In contrast, verbs have e-roles, and since an “attributive verb” would not be in a local environment with a T head, the e-role could not be bound. This would result in ungrammaticality.

First, I show that adjectives can have non-intersective interpretations. Second, I demonstrate that adjectives and verbs do not have the same agreement patterns in relative clauses. Third, adjectives can appear with a null head noun; however, the head of verbal relative clauses must be overt.

2.2.1 The Presence of Non-intersective Adjectives

Helmbrecht claims that when an adjective modifies an object NP, the adjective and NP are in a relative clause. This predicts that these relative clause-internal adjectives will always receive an intersective interpretation. This section shows that this is not necessarily the case for *all* adjectives in Hocak.

As first proposed by Smith (1964), prenominal adjectives in English have been analyzed as being derived from copular relative clauses. In this proposal, the adjective raises from a postnominal position to a prenominal position, while the *wh*-word and copula get deleted under a process of “Whiz deletion.” This is outlined in (32).

- (32) a. a black cat

⁶Special thanks to Meredith Johnson (personal communication) for helping provide the syntactic generalizations concerning the agreement and headedness data in relative clauses in Hocak (see sections 2.2.2 and 2.2.3).

- b. a [_A black] cat ~~which is~~ ____


More recently, this type of structure has been proposed by Kayne (1994) and Larson (1998) for English, and Alexiadou (2001) for Modern Greek, among many others. Kayne (1994:101) in particular argues that the adjective originates in a predicate position and then preposes to a prenominal position in Spec,CP; see (33). Note that these analyses are similar in spirit to the one proposed by Helmbrecht for Hocak adjectives.

- (33) a. the yellow book
 b. the [_{CP} [_{AP} yellow] [C [_{IP} [book] [I ____ ...]


There are, however, well-known problems with this argument. For instance, Bolinger (1967) points out that taking the base position for all adjectives to be postverbal in a relative clause only captures one possible reading. That is, a uniform analysis based on a copular relative is untenable since a non-intersective (or “adverbial”) interpretation of certain adjectives would be left unexplained. Consider the examples in (34) and (35). The (a) examples show the intersective reading, and the (b) examples show the non-intersective reading.

- (34) Olga is a **beautiful dancer**.
 a. Olga is a dancer [who is **beautiful**].
 b. Olga dances **beautifully**.

- (35) John is an **old friend**.
 a. John is a friend [who is **old**]. (i.e., who is aged)
 b. John has been a friend **for a long time**.

To explain the intersective reading, consider the entailment pattern in (36): relative clauses are always interpreted as being intersective. For example, (36) shows the pattern in (35a), where *John is a friend* and *John is old*.

- (36) NP is a N Mod → NP is a N & NP is Mod
 John is a friend **who is old** → John is a friend & John is old
 (Yamakido 2000:591)

Moreover, the same type of entailment applies to some attributive modifiers, which can also be understood as intersective. This is illustrated in (37). Like (36), *John is an old friend* entails *John is old* and *John is a friend*.

- (37) NP is a Mod N → NP is a N & NP is Mod
 John is an **old** friend → John is a friend & John is old
 (Yamakido 2000:591)

Significantly, the non-intersective reading in (35b) cannot be paraphrased like in (36) and (37). These readings are non-intersective, and they cannot be captured in a relative clause or be used predicatively, as shown in (38).

- (38) * John is longtime.

Returning to the question of how this applies to adjectives in Hocak, compare the Hocak example in (39) to the English one in (35). Hocak expresses the two possible readings of *old* with two different modifiers. The intersective reading in (39a) is expressed through the modifier *š'aak* 'aged' in a postnominal position, whereas the non-intersective reading in (39b) is expressed through the adjective *s'ii* 'longtime' in a prenominal position.

- (39) a. Cecilga hicakoro š'aakhižə hikipa. (Intersective)
 Cecil-ga hicakoro š'aak-hižə Ø-hikipa
 Cecil-PROP friend aged-INDEF 3S-meet
 'Cecil met an aged friend.'

- b. Cecilga s'ii hicakorohižą hikipa. (Non-intersective)
 Cecil-ga s'ii hicakoro-hižą Ø-hikipa
 Cecil-PROP longtime friend-INDEF 3S-meet
 ‘Cecil met a longtime friend.’

(39b) is indeed non-intersective since it is impossible to use *s'ii* predicatively, as in (40), which is parallel to the ungrammatical English example in (38).

- (40) *Cecilga s'ii anąga hicakoro wa'ųnakšana.
 Cecil-ga s'ii anąga hicakoro Ø-wa'ų-nak-šana
 Cecil-PROP longtime and friend 3S-AUX-POS.NEUT-DECL
 Intended: ‘Cecil is longtime and is a friend.’

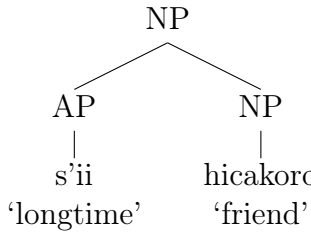
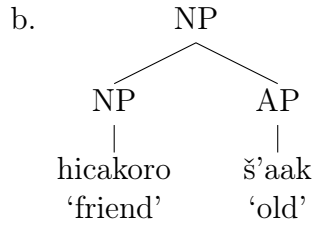
This suggests that there are semantic, and more importantly, structural differences between these two modifiers. If there were no difference between *s'ii* ‘longtime’ and *š'aak* ‘old’ in the phrase structure of the nominal domain, and if the position for all adjectives were in a relative clause, we would expect the two modifiers to behave similarly, contrary to fact. That is, if *s'ii* ‘longtime’ were inside a relative clause, then we would expect it to appear in predicative environments; furthermore, we would expect it to have intersective semantics.

Since adjectives are not uniformly inside a relative clause structure, another structure must be able to account for modifiers like *s'ii* ‘longtime’ and *š'aak* ‘old’. For now, I assume the “standard view” of attributive modification, where adjectival modifiers adjoin to the maximal projection of NP (Svenonius 1994). Since adjectives can appear to the right or the left of the noun, I propose that they adjoin either to the right or the left of the NP. Adjectives can be postnominal like *š'aak* ‘old’ in (38a), or be prenominal like the non-intersective adjective *s'ii* ‘longtime’ in (38b).

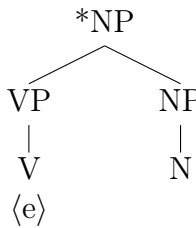
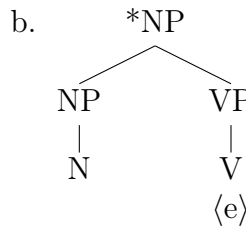
There are other prenominal modifiers besides *s'ii* ‘longtime’. Modifiers belonging to nationality and material classes are also prenominal in Hocak, as illustrated in (41).

- (41) a. Cecilga j̣inj cihiža ruẉ.
 Cecil-ga j̣inj ci-hiža Ø-ruẉ
 Cecil-PROP stone house-INDEF 3S-buy
 ‘Cecil bought a stone house.’
- b. Bryanga hišjahakirujik waẓ̌atirehiža ruẉ.
 Bryan-ga hišjahakirujik waẓ̌atire-hiža Ø-ruẉ
 Bryan-PROP Japanese car-INDEF 3S-buy
 ‘Bryan bought a Japanese car.’

The structures that I propose for attributive adjectives in Hocak are presented in (42).

- (42) a. 
- b. 

In contrast, a hypothetical structure where a verb adjoins to an NP as an “attributive verb” is shown in (43).

- (43) a. 
- b. 

Under the proposal outlined above, a verb cannot appear adjoined to an NP as the adjectives can in (42). A verb has an e-role (represented by <e>), which must be discharged in order to prevent a violation of the theta criterion. An e-role needs a local T to bind it. Since the VP would be in the maximal projection of the NP, there is no T to bind the verb’s e-role. There is thus no principled way to allow an e-role to be discharged since the binder of the e-role is outside of the NP.

Let us now compare a verb adjoining to a noun phrase with an adjective like *s'ii* ‘longtime’ or *š'aak* ‘old’ to a noun phrase. The adjective assigns its theta-role to the noun. However, when an adjective adjoins to an NP, there is no e-role, and thus the structure is not in danger of violating the theta criterion. The difference between verbs and adjectives in this case is the claim that adjectives do not carry an e-role, whereas verbs do. In the sections below, I further defend this claim.

2.2.2 Adjectives Do Not Agree

The previous section offered a semantic argument. This section presents an argument from agreement. Given Helmbrecht’s analysis that adjectives are verbs, verbal and adjectival agreement in relative clauses should be completely parallel. I show that this is not borne out. In subject-oriented relative clauses in Hocak, the verb must agree with the head of the relative clause. Adjectives, on the other hand, have no such requirement.

First let us consider verbal agreement in relative clauses. When the head NP is the subject of the relative clause, then the verb inside the relative clause must agree with it. Consider the contrasts in (44) and (45).

- (44) a. Bryanga hinuk hajiirera wookit'e.
 Bryan-ga hinuk haji-ire-ra wa-Ø-hokit'e
 Bryan-PROP woman come.to.STAT-3PL.S-COMP 3PL.O-3S-speak.to
 ‘Bryan spoke to the women that arrived’
- b. *Bryanga hinuk hajira wookit'e.
 Bryan-ga hinuk Ø-haji-ra wa-Ø-hokit'e.
 Bryan-PROP woman 3S-come.to.STAT-COMP 3PL.O-3S-speak.to
 ‘Bryan spoke to the women that arrived’
- (45) a. Cecilga wooracgara xuuxrairera waruwj.
 Cecil-ga wooracga-ra xuuxre-ire-ra wa-Ø-ruwj
 Cecil-PROP cup-DEF break.STAT-3PL.S-COMP 3PL.O-3S-buy
 ‘Cecil bought the cups that broke.’

- b. * Cecilga wooracgāra xuuxrera waruwj.
 Cecil-ga wooracgā-ra Ø-xuuxre-ra wa-Ø-ruwj
 Cecil-PROP cup-DEF 3S-break.STAT-COMP 3PL.O-3S-buy
 Intended: ‘Cecil bought the cups that broke.’

As seen in (44), the head of the relative clause is *hinuk* ‘women’. The plural object marker *wa-* on the matrix verb *hokit’e* ‘speak to’ indicates that the referent ‘women’ is plural. Since this NP is plural, it must also agree with the verb in the relative clause *haji* ‘arrive’ by taking plural subject agreement *-ire*. On the other hand, if the verb inside the relative clause does not agree with the plural head NP *hinuk* ‘women’, the sentence results in ungrammaticality, as in (44b). (45) shows a similar example of a relative clause with the stative verb *xuuxre* ‘break’.

This situation is not limited to stative verbs, as relative clauses with active verbs also display this pattern; see (46) with the verb *hikša* ‘laugh’ and (47) with *waši* ‘dance’.

- (46) a. Matejaga hinuk hikšairera, wookit’e.
 Mateja-ga hinuk hikša-ire-ra wa-Ø-hokit’e
 Mateja-PROP woman laugh.ACT-3PL.S-COMP 3PL.O-3S-speak.to
 ‘Mateja spoke to the women that laughed.’
- b. * Matejaga hinuk hikšara, wookit’e.
 Mateja-ga hinuk Ø-hikša-ra wa-Ø-hokit’e
 Mateja-PROP woman 3S-laugh.ACT-COMP 3PL.O-3S-speak.to
 Intended: ‘Mateja spoke to the women that laughed.’
- (47) a. Meredithga, hinuk wašiirera, woomakijni.
 Meredith-ga hinuk waši-ire-ra wa-Ø-homakijni
 Meredith-PROP woman dance.ACT-3PL.S-COMP 3PL.O-3S-visit
 ‘Meredith visited the women that danced.’
- b. * Meredithga, hinuk wašira, woomakijni.
 Meredith-ga hinuk Ø-waši-ra wa-Ø-homakijni.
 Meredith-PROP woman 3S-dance.ACT-COMP 3PL.O-3S-visit
 Intended: ‘Meredith visited the women that danced.’

Given Helmbrecht’s claim that adjectives are verbs in Hocak, we might expect a similar agreement pattern with adjectives. However, we see that in the following examples in (48)–(51), adjectives do not show the same agreement requirements.⁷

- (48) Cecilga wijuk seepira waaaja.
 Cecil-ga wijuk seep-ra wa-Ø-haja
 Cecil-PROP cat black-DEF 3PL.O-3S-see
 ‘Cecil saw the black cats.’
- (49) Bryanga wiišgac xetera waruwj.
 Bryan-ga wiišgac xete-ra wa-Ø-ruwj
 Bryan-PROP toy big-DEF 3PL.O-3S-buy
 ‘Bryan bought the big toys.’
- (50) Meredithga wažatire ceekra waaaja.
 Meredith-ga wažatire ceek-ra wa-Ø-haja
 Meredith-PROP car new-DEF 3PL.O-3S-see
 ‘Meredith saw the new cars.’
- (51) Matejaga waaruc poroporora wagisiššana.
 Mateja-ga waaruc poroporo-ra wa-Ø-gisiššana.
 Mateja-PROP table round-DEF 3PL.O-3S-break-DECL
 ‘Mateja broke the round tables.’

As shown in (48)–(51) above, the adjective does not bear the 3rd person plural marker *-ire*. This pattern extends to prenominal adjectives too, as in (52).

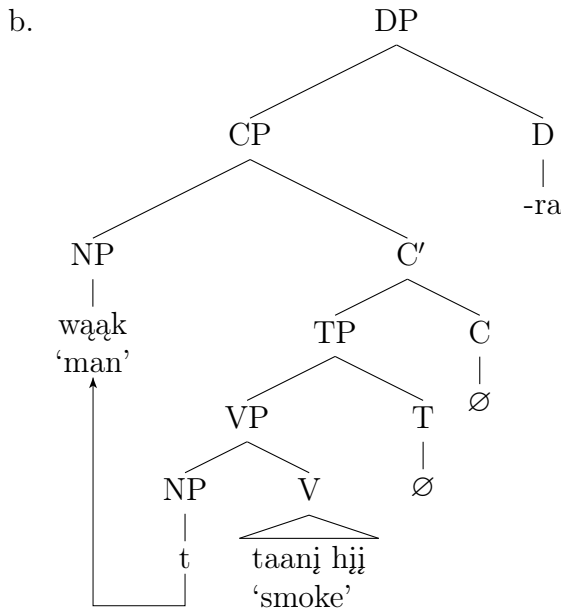
- (52) Bryanga maas wooracgara woonacsšana.
 Bryan-ga maas wooracga-ra wa-Ø-honacšana
 Bryan-PROP metal cup-DEF 3PL.O-3S-borrow-DECL
 ‘Bryan borrowed the metal cups.’

I account for the differences in agreement between verbs in (44)–(47) and adjectives in (48)–(52) by proposing that adjectives are in an attributive position, adjoined to the NP, whereas verbs are merged in a relative clause structure.

⁷In fact, postnominal adjectives may optionally agree. See the discussion below.

In the previous subsection, I claimed that verbs (VPs) cannot appear in attributive positions because they contain an e-role that would otherwise not be discharged by a local T. Thus, in order to modify a noun, verbs must be in a relative clause: the verb is in a CP with a T head that can bind the e-role. For the structure of relative clauses, I follow a head-raising analysis. A version of this analysis has been argued for by Kayne (1994) (see also Bhatt 2002). According to this analysis, the head NP originates inside the relative clause CP. (53a) is schematized in (53b). This analysis posits that the head of the relative clause can appear inside as well as outside of the relative clause.

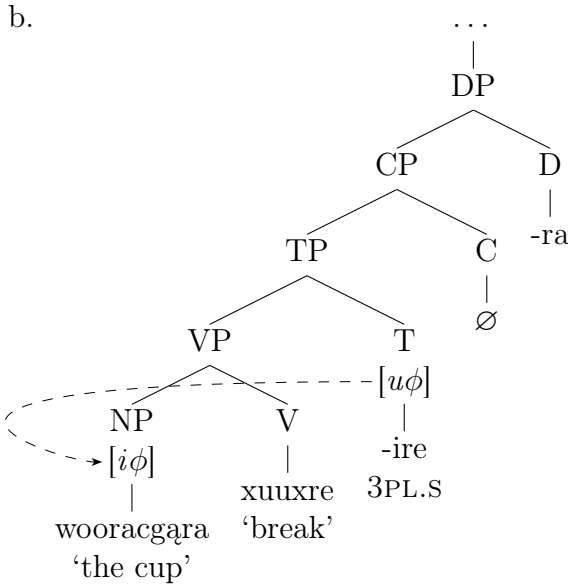
- (53) a. Bryanga wɔ̀ɔk taanj hji̯ra, hiki̯pa.
 Bryan-ga wɔ̀ɔk taanj Ø-hji̯-ra, Ø-hiki̯pa
 Bryan-PROP man tobacco 3S-suckle.ACT-COMP 3S-meet
 ‘Bryan met the man who smokes.’



In order to account for the agreement differences between adjectives and verbs, I follow Chomsky (2000, 2001) and assume that agreement is applied in the narrow syntax. I further assume that T is responsible for subject agreement, whereas v is responsible for object agreement (Chomsky 2000, 2001). When a verb and its subject are merged in a relative

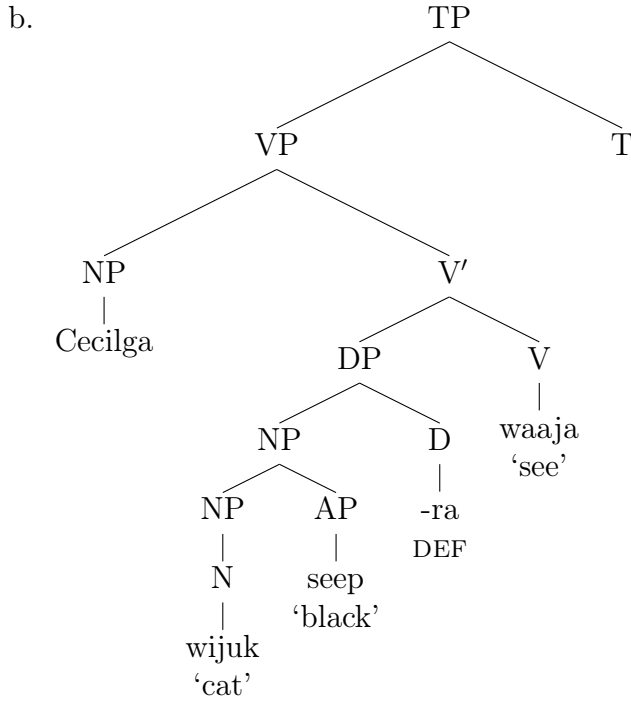
clause, as in (54a), the subject agrees with T of the relative clause. In (54b), T enters into an Agree relationship with an NP in order to check its uninterpretable ϕ -feature. For illustrative purposes, the subject of the relative clause remains in situ. If the verb in the relative clause does not show agreement, this indicates that T did not probe the subject's ϕ -features, which results in a crash at LF (Chomsky 2000, 2001). I argue that this can explain the contrast between (45a) and (b) above.

- (54) a. Cecilga wooracgāra xuuxra*(ire)ra waruwī.
 Cecil-ga wooracgā-ra xuuxre-ire-ra wa-Ø-ruwī
 Cecil-PROP cup-DEF break.STAT-3PL.S-COMP 3PL.O-3S-buy
 ‘Cecil bought the cups that broke.’



Let us turn to when an adjective is adjoined to an NP. The structure that I propose for (55a) is shown in (55b). Since the adjective is contained inside the maximal projection of the NP, the adjective does not have local c-command relationship with a functional projection (e.g., T or v). That is, the AP is not a predicate in this case, and does not combine with a distinct functional head like T. Thus there is no agreement between the head noun and the adjective.

- (55) a. Cecilga wijuk seepira waaja.
 Cecil-ga wijuk seep-ra wa-Ø-haja
 Cecil-PROP cat black-DEF 3PL.O-3S-see
 ‘Cecil saw the black cats.’



However, adjectives may optionally agree with their subject. Consider (56) with *seep* ‘black’: *seep* bears the 3rd person plural marker, which indicates that it is agreeing with its subject *wijuk* ‘cat(s)’.

- (56) Cecilga wijuk seepirera waaja.
 Cecil-ga wijuk seep-ire-ra wa-Ø-haja
 Cecil-PROP cat black-3PL.S-COMP 3PL.O-3S-see
 ‘Cecil saw the black cats.’

I suggest that when adjectives agree with their subject, they are in relative clause structures. Evidence that these adjectives are in relative clauses comes from examples where an NP is modified by both an adjective and a verbal relative clause. In (57), the adjective *waxja* ‘funny’ and the relative clause *rookhožu ruucirera* ‘who ate the pie’ follow the plural head noun *wqak* ‘men’.

- (57) a. Cecilga wɔ̀ɔ̀k waxja rookhožu ruucirera waaja.
 Cecilg-ga wɔ̀ɔ̀k waxja rookhožu ruuc-ire-ra wa-Ø-haja
 Cecil-PROP man funny pie eat-3PL.S-COMP 3PL.O-3S-see
 ‘Cecil saw the funny men who ate the pie.’
- b. *Cecilga wɔ̀ɔ̀k rookhožu ruucirera waxjara waaja.
 Cecilg-ga wɔ̀ɔ̀k rookhožu ruuc-ire-ra waxja-ra wa-Ø-haja
 Cecil-PROP man pie eat-3PL.S-COMP funny-COMP 3PL.O-3S-see
 Intended: ‘Cecil saw the men who ate the pie who were funny.’
- c. Cecilga wɔ̀ɔ̀k rookhožu ruucirera waxjairera waaja.
 Cecilg-ga wɔ̀ɔ̀k rookhožu ruuc-ire-ra waxja-ire-ra wa-Ø-haja
 Cecil-PROP man pie eat-3PL.S-COMP funny-3PL.S-COMP 3PL.O-3S-see
 ‘Cecil saw the men who ate the pie who were funny.’

When *waxja* ‘funny’ immediately follows the head noun, it does not agree with its subject, as seen in (57a). However, when *waxja* ‘funny’ follows the relative clause, it must agree with the plural noun ‘man’, as shown by the contrast between (57b) and (c). This suggests that adjectives can merge in two positions: one where the adjective does not agree with its head noun, and one where it does. I interpret these facts as indicating that the adjective that agrees with the head noun is in a relative clause.⁸ On the other hand, when the adjective does not agree with the head noun, it is in an adjoined position. I argue that the adjective *waxja* ‘funny’ in (57a) is adjoined to the NP, while *waxja* ‘funny’ in (57c) is in a relative clause.

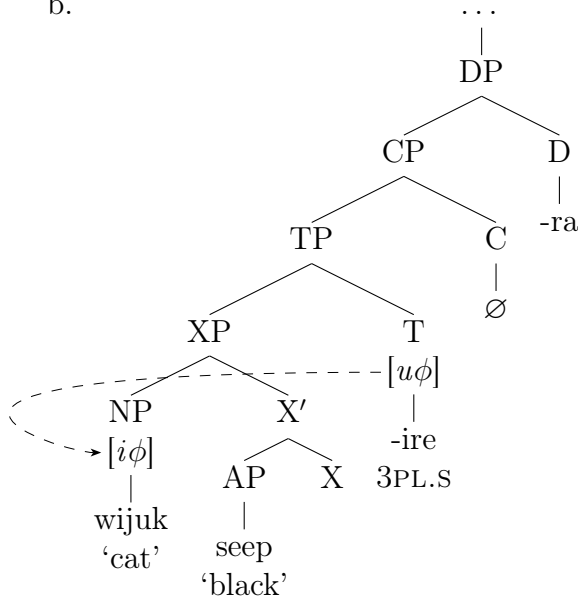
To account for the presence of agreement in (56), I posit that *seep* ‘black’ is in a relative clause. Given the assumption that relative clauses have the appropriate functional head (in this case, T) to allow agreement morphology to be present, I propose that (58a) contains a relative clause. Like verbal relative clauses, when there is a local c-commanding T, agreement between T and its subject NP must take place through a probe-goal relationship; see (58b).⁹

⁸I assume that head of the relative clause with *waxja* ‘funny’ is the same noun that heads the relative clause with *rookhožu ruucirera* ‘who ate the pie’. I follow Kayne (1994), and assume that relative clauses can “stack.”

⁹In (58b), T takes an XP complement, which hosts the subject of the predicate. For now I leave XP’s

- (58) a. Cecilga wijuk seepirera waaja.
 Cecil-ga wijuk seep-ire-ra wa-Ø-haja
 Cecil-PROP cat black-3PL.S-COMP 3PL.O-3S-see
 ‘Cecil saw the black cats.’

b.



This completes my account of why verbs in relative clauses have different agreement patterns than adjectives in attributive (adjoined) positions. With respect to verbs in relative clauses, a local T head is required to agree with the verb’s subject. Since there is no local T (or v) for an adjective to combine with, an adjective does not agree with its head noun. In sum, we have another diagnostic to differentiate between verbs and adjectives. Verbs in relative clauses need to agree with their subject, whereas adjectives do not. Given the distinction seen above, I conclude that the lack of agreement in (48)–(52) constitutes further evidence for the existence of adjectives in Hocak.

category undefined. I assume that X contains an e-role that T can bind. In section 2.4, I propose that X is a copular V.

2.2.3 Overt Heads in Clauses and Phrases

One final argument that modifiers in noun phrases are actually adjectives in an attributive position comes from the fact that they can appear in phrases without an overt head. In contrast, the head of relative clauses in Hocak must be phonologically overt. Consider (59), where the pronominal *hižq* is necessarily present as the head of the relative clause.

- (59) a. Hunterga, **hižq** waisgap sguu rook'ira, haja.
 Hunter-ga, hižq waisgap sguu Ø-rook'i-ra, Ø-haja
 Hunter-PROP one cake 3S-bake-COMP 3S-see
 'Hunter saw the one that baked the cake.'
- b. * Hunterga, waisgap sguu rook'ira, haja.
 Hunter-ga, waisgap sguu Ø-rook'i-ra, Ø-haja
 Hunter-PROP cake 3S-bake-COMP 3S-see
 Intended: 'Hunter saw the one that baked the cake.'

(60) shows that the restriction also holds when the head of the relative clause is the object of the embedded verb. Note that the head of the relative clause, *wažq* 'thing', can appear at the left edge of the relative clause in (60a) or in situ in (60b).

- (60) a. Matejaga, Meredithga **wažq** rook'ira, ruucšana.
 Mateja-ga Meredith-ga wažq Ø-rook'i-ra Ø-ruuc-šana
 Mateja-PROP Meredith-PROP thing 3S-bake-COMP 3S-eat-DECL
 'Mateja ate the thing that Meredith baked.'
- b. Matejaga, **wažq** Meredithga rook'ira, ruucšana.
 Mateja-ga wažq Meredith-ga Ø-rook'i-ra Ø-ruuc-šana
 Mateja-PROP thing Meredith-PROP 3S-bake-COMP 3S-eat-DECL
 'Mateja ate the thing that Meredith baked.'
- c. * Matejaga, Meredithga rook'ira, ruucšana.
 Mateja-ga Meredith-ga Ø-rook'i-ra Ø-ruuc-šana
 Mateja-PROP Meredith-PROP 3S-bake-COMP 3S-eat-DECL
 Intended: 'Mateja ate the thing that Meredith baked.'

In contrast, comparable phrases with adjectives do not require an overt head. In Hocak, it is possible for a noun phrase to not contain an overt head. This phenomenon is often referred to as Noun Phrase Ellipsis (NP-ellipsis; Ross 1964). Consider a few examples of NP-ellipsis in (61) and (62).

- (61) Meredithga wijuk kirikirišra ruwɨ anaga Bryanga kerekerešra ruwɨ.
 Meredith-ga wijuk kirikiriš-ra Ø-ruwɨ anaga Bryan-ga kerekereš-ra Ø-ruwɨ
 Meredith-PROP cat striped-DEF 3S-buy and Bryan-PROP spotted-DEF 3S-buy
 ‘Meredith bought a striped cat and Bryan bought a spotted one.’

- (62) Matejaga wijuk kirkiriš xetera ruwɨ anaga Sarahga kerekereš
 Mateja-ga wijuk kirkiriš xete-ra Ø-ruwɨ anaga Sarah-ga kerekereš
 Mateja-PROP cat striped big-DEF 3s-buy and Sarah-PROP spotted
 xɨnɨɨkra ruwɨ.
 xɨnɨɨk-ra Ø-ruwɨ
 small-DEF 3s-buy
 ‘Mateja bought the big striped cat and Sarah bought the small spotted one.’

In the first conjunct of (61) and (62), the head of the noun phrase is *wijuk* ‘cat’, but it can be elided in the second conjunct. In other words, the second conjunct does not contain an object NP with an overt head. The object NP solely consists of an adjective and the definite determiner *-ra*. It appears that NP-ellipsis is very productive in Hocak.

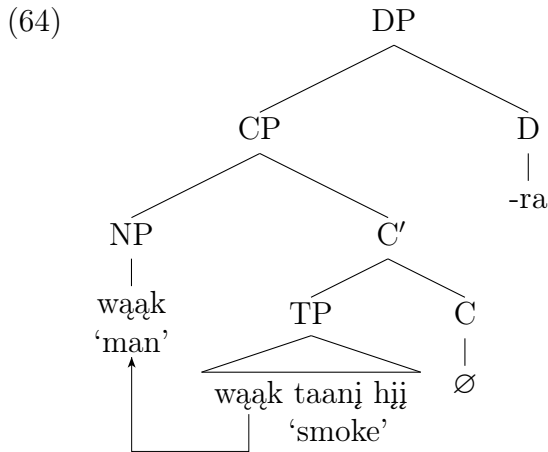
Although the examples above have conjoined phrases where the first conjunct likely conditions NP-ellipsis in the second, it is also possible for NP-ellipsis to occur in non-coordinated structures, as shown in (63). The parentheses indicate that the head noun (*hižə* ‘one’) is optional.

- (63) *Context: Which cup did he/she buy/choose/like?*
 a. Bryanga (hižə) ceekra ruwɨ.
 Bryan-ga hižə ceek-ra Ø-ruwɨ
 Bryan-PROP one new-DEF 3S-buy
 ‘Bryan bought the new one.’

- b. Sarahga (hiža) poroporora gica.
 Sarah-ga hiža poroporo-ra Ø-gica
 Sarah-PROP one round-DEF 3S-choose
 ‘Sarah chose the round one.’
- c. Matejaga (hiža) šuucra gipi.
 Mateja-ga hiža šuuc-ra Ø-gipi.
 Mateja-PROP one red-DEF 3S-like
 ‘Mateja likes the red one.’

The task now is to determine why relative clauses in Hocak must have an overt head. At the same time, I have to explain how this compares to nominal heads that have been elided under NP-ellipsis. I present one possible explanation below.

Recall that I assume a structure of Hocak relative clauses, where the head is both internal and external; see (64). This structure follows the analysis given by Kayne (1994).



Furthermore, I follow a copy theory of movement (see e.g., Chomsky 1995, Bošković and Nunes 2007). I assume that the movement of *waaq* ‘man’ in (64) always occurs, but only one of the copies in the *wh*-chain is spelled out at PF. I suggest that if neither copy is pronounced at PF, there will be PF/LF violation. In particular, it would violate *Recoverability*, as outlined in (65).

(65) *Recoverability (Pesetsky 1998)*

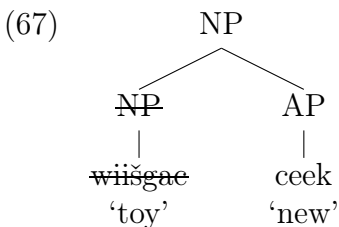
A syntactic unit with semantic content must be pronounced unless it has a sufficiently local antecedent.

In cases like (66) (repeated from (60)), either (a) or (b) is grammatical since one of the copies is pronounced. However, (66c) is ungrammatical without an overt copy as it would violate recoverability.

- (66) a. Matejaga, ~~waža~~ Meredithga waža rook'ira, ruucšana
 b. Matejaga, waža Meredithga ~~waža~~ rook'ira, ruucšana
 c. *Matejaga, ~~waža~~ Meredithga ~~waža~~ rook'ira, ruucšana
 Mateja.PROP thing Meredith.PROP thing 3S.bake.COMP 3S.eat.DECL
 'Mateja ate the thing that Meredith baked.'

This analysis accounts for why the head of the relative clause must be overt. Recoverability is ensured by the overt pronunciation of the head.

Having established the structure of relative clauses, I turn to explaining the situation when attributive modifiers are stranded by ellipsis. In the examples in (61)–(63) above, the head noun is not pronounced, which can leave remnant adjectives. The elided noun in such cases is recovered by an antecedent in the first conjunct or by the context, as in the case of (63). Ellipsis targets phrases; thus, if attributive adjectives are adjoined to the maximal projection of the NP, then ellipsis works on the lower NP. This leaves the NP-adjoined modifier(s) in a stranded position. This is roughly depicted in (67), where ellipsis is represented by strikethrough.



Thus, the fact that phrases with adjectives can have a null head, but relative clauses with verbs cannot, suggests that adjectives and verbs occupy two different positions when modifying a noun. A verb is in a relative clause, while an adjective can be adjoined to the NP or be a predicate in a relative clause. This contrast is expected if Hocak has a separate category of adjective that can modify nouns without the use of a relative clause structure.

2.3 Degree Modification and Resultative Predication

This section explores two more ways that adjectives differ from verbs. First, I show that only adjectives can appear with degree morphology. Second, adjectives can appear as resultative secondary predicates, while verbs cannot.

2.3.1 Modification with degree phrases

This section looks at the degree element *eegišge* ‘too’ and the degree morphology that encodes superlatives. I show that the degree element *eegišge* ‘too’ and the superlative morpheme *ho-...-xji* in Hocak are only compatible with adjectives. I argue that both *eegišge*, as in (68a), and *ho-...-xji*, as in (68b), are associated with degree phrases.

- (68) a. Wijukra **eegišge** sgigre.
 wujuk-ra eegišge Ø-sgigre
 cat-DEF too 3S-heavy
 ‘The cat is too heavy.’
- b. Wijukra hoxetexjira wa’unaḱšana.
 wujuk-ra **ho-xete-xji**-ra Ø-wa’u-naḱ-šana
 cat-DEF SUP-big-SUP-DEF 3S-AUX-POS.NEUT-DECL
 ‘The cat is the biggest.’

The reason that only adjectives can merge with *eegišge* is that they bear a grade-role as part of their theta-grid that can be discharged by a degree head. The superlative morpheme is

linked to a degree head that can bind a degree-argument of an adjective. Moreover, following Matushanksy (2008), superlatives are in an attributive position. This is a structural position that is only possible for adjectives, as I have argued above.

2.3.2 Compatibility with *eegišge*

I begin by discussing the degree element *eegišge* ‘too’. This degree element can modify adjectives in predicative environments, as in (69).

- (69) a. Henryga eegišge s’aagre.
 Henry-ga eegišge Ø-s’aagre
 Henry-PROP too 3S-fast
 ‘Henry is too fast.’
- b. Wijukra eegišge sgigre.
 wijuk-ra eegišge Ø-sgigre
 cat-DEF too 3S-heavy
 ‘The cat is too heavy.’

In contrast, this element is not compatible with verbs in Hocak. For instance, it cannot be used with a stative verb, such as *šiibre* ‘fall’ in (70a), an active verb, such as *waši* ‘dance’ in (70b), or a transitive verb like *gistak* ‘smack’ in (70c).

- (70) a. *Hunterga eegišge šiibre.
 Hunter-ga eegišge Ø-šiibre
 Hunter-PROP too 3S-fall.STAT
 Intended: ‘Hunter fell too much/ a lot.’
- b. *Sarahga eegišge waši.
 Sarah-ga eegišge Ø-waši
 Sarah-PROP too 3S-dance.ACT
 Intended: ‘Sarah danced too much/ a lot.’

- c. *Bryanga waarucra eegišge gistakšana.
 Bryan-ga waaruc-ra eegišge Ø-gistak-šana
 Bryan-PROP table-DEF too 3S-smack-DECL
 Intended: ‘Bryan smacked the table too much/ a lot.’

A prototypical stative verb like *gipj* ‘like’ is also ungrammatical when modified by *eegišge* ‘too’, as exemplified in (71).

- (71) *Bryanga Meredithga eegišge gipj.
 Bryan-ga Meredith-ga eegišge Ø-gipj
 Bryan-PROP Meredith-PROP too 3S-like
 Intended: ‘Bryan likes Meredith too much/ a lot.’

There is clearly a contrast with the modifier *eegišge* ‘too’: adjectives can combine with it, but verbs cannot. This would thus appear to be another environment where adjectives and verbs are different, suggesting that adjectives and verbs are distinct lexical categories.

While verbs by themselves cannot be modified by *eegišge* ‘too’, it is possible for verbs to appear with *eegišge* ‘too’, but only when they are accompanied by the aspectual-like element *-ke* ‘often’. For example, consider (72a) with the stative verb *šiibre* ‘fall’ and (72b) with the active verb *waši* ‘dance’.

- (72) a. Hunterga eegišge šiibreke.
 Hunter-ga eegišge Ø-šiibre-**ke**
 Hunter-PROP too 3S-fall.STAT-often
 ‘Hunter falls down too often.’
 b. Sarahga eegišge wašike
 Sarah-ga eegišge Ø-waši-**ke**
 Sarah-PROP too 3S-dance.ACT-often
 ‘Sarah dances too often.’

In this case, it seems that the compatibility is due to *-ke*. Since there are differences in grammaticality between these two sets of examples—verbs with *-ke* and verbs without—I propose that *-ke* can turn a non-gradable predicate into a gradable one. The morpheme *-ke*

introduces a degree which *eegišge* ‘too’ can modify. This can account for why *eegišge* ‘too’ is possible with verbs with *-ke*. The issue now is whether this means that verbs are in fact gradable. The data suggest that this might be a possibility; however, even if we want to call this (a type of) gradability, the verb is receiving its gradability from another source. Thus, under this proposal, verbs do not inherently have gradability. The element *-ke* “adds” gradability, which can make the predicate become gradable and allows the presence of *eegišge* ‘too’. These predicates are then gradable because of *-ke* and not because verbs in Hocak inherently have a gradable scale.

2.3.3 Compatibility with *ho-...-xji*

I now turn to the compatibility with the superlative morpheme *ho-...-xji*. I show that like degree modifications involving *eegišge* ‘too’, the superlative morpheme is also only possible with adjectives. While *eegišge* ‘too’ can modify an adjective in predicative position, the superlative morpheme can only combine with attributive adjectives. We see in (73) that the superlative morpheme can combine with adjectives.

- (73) a. (Wąak) hosaagrexjira hohi kjane.
 wąak **ho**-saagre-**xji**-ra Ø-hohi kjane
 man SUP-fast-SUP-DEF 3S-win FUT
 ‘The fastest (man) will win.’
- b. Sarahga (wažatire) howat’akxjira roogu.
 Sarah-ga wažatire **ho**-wat’ak-**xji**-ra Ø-roogu
 Sarah-PROP car SUP-cheap-SUP-DEF 3S-want
 ‘Sarah wants the cheapest (car).’
- c. Henryga (wąak) hosaagrexjira wa’unaḱšana
 Henry-ga wąak **ho**-saagre-**xji**-ra Ø-wa’u-naḱ-šana
 Henry-PROP man SUP-fast-SUP-DEF 3S-AUX-POS.NEUT-DECL
 ‘Henry is the fastest (man).’

In contrast, *ho-...-xji* cannot modify a verb. This is shown in (76): the (a) example is shown with a stative verb; the (b) example with an active verb; and the (c) example with a transitive verb.

- (76) a. * Hunterga hošiibrexjira wa'ujee.
 Hunter-ga **ho**-šiibre-**xji**-ra Ø-wa'ujee
 Hunter-PROP SUP-fall.STAT-SUP-DEF 3S-AUX-POS.VERT
 Intended: 'Hunter is falling the hardest/ the best.'
- b. * Bryanga howašixjira wa'ujee.
 Bryan-ga **ho**-waši-**xji**-ra Ø-wa'ujee
 Bryan-PROP SUP-dance.ACT-SUP-DEF 3S-AUX-POS.VERT
 Intended: 'Bryan is dancing the hardest/ the best.'
- c. * Matejaga waarucra hogistakxjira wa'ujee.
 Mateja-ga waaruc-ra **ho**-gistak-**xji**-ra Ø-wa'ujee
 Mateja-PROP table-DEF SUP-hit-SUP-DEF 3S-AUX-POS.VERT
 Intended: 'Mateja is hitting the table the hardest/ the best.'

The ungrammaticality of verbs with *ho-...-xji* in (76) also extends to verbal predicates that are cross-linguistically known to be stative. Verbs, such as *hiperes* 'know' and *gipi* 'like', are also not possible with the superlative, as in (77) and (78).

- (77) a. Hunterga hiperes wa'unaḱṣaṇa.
 Hunter-ga hiperes Ø-wa'uj-nḱ-ṣaṇa
 Hunter-PROP know 3S-AUX-POS.NEUT-DECL
 'Hunter knows.'
- b. * Hunterga hohiperesxjira wa'unaḱṣaṇa.
 Hunter-ga **ho**-hiperes-**xji**-ra Ø-wa'uj-nḱ-ṣaṇa
 Hunter-PROP SUP-know-SUP-DEF 3S-AUX-POS.NEUT-DECL
 Intended: 'Hunter is the "knowiest"' OR 'Hunter is the most knowledgeable.'
- (78) a. Meredtiha šuḱk že'e gipi wa'ujee.
 Meredtiha-ga šuḱk že'e Ø-gipi Ø-wa'ujee
 Meredtiha-PROP dog that 3S-like 3S-AUX-POS.VERT
 'Meredith likes that dog.'

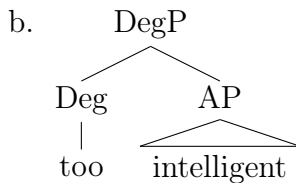
- b. *Meredtihga šųųk že'e hogipixjira wa'ųjee.
 Meredtih-ga šųųk že'e **ho-gipį-xjį**-ra Ø-wa'ų-jee
 Meredtih-PROP dog that SUP-like-SUP-DEF 3S-AUX-POS.VERB
 Intended: 'Meredtih likes that dog the most.'

Thus, we see that the presence of *ho-...-xjį* with adjectives and verbs produces a difference in grammaticality. Adjectives are grammatical, while verbs are ungrammatical. Once again, this is another case where adjectives contrast with verbs. Under an account that conflates verbs and adjectives, it is puzzling why there would be such a contrast. In other words, if adjectives were a subset of the verbal category, we would predict that verbs and adjectives alike could take the superlative morpheme.

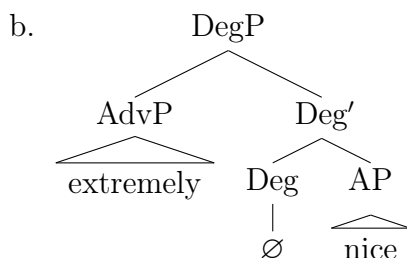
2.3.4 Degree Phrases with *eegišge* and *ho-...-xjį*

Abney (1997) and Corver (1997) proposed that DegPs are functional phrases that take adjectives as their complements. The English example in (79a) with *too* has the structure in (79b). Also consider the construction of absolute adjectives in (80): according to Kennedy (1999), absolute adjectives have a null degree head, and degree elements, such as *extremely*, merge in Spec,DegP.

- (79) a. Alex is too intelligent.



(80) a. Sam is extremely nice.



The purpose of a degree head is to bind the adjective’s degree argument. Recall that Zwarts (1992) and Corver (1997) have claimed that only gradable adjectives can have grade-roles (degree arguments) as part of their thematic frame. Much like how verbs have e-roles in their argument structure, gradable adjectives have grade-roles. On the other hand, non-gradable adjectives, such as *dead*, do not have a degree role. Such adjectives are not compatible with degree phrases because the degree head would not have an appropriate argument to bind.

Similarly, other researchers have claimed that the difference between adjectives and verbs is that only gradable adjectives can have their grade-role (or degree argument) discharged by a functional head that projects its own phrase. For example, Kennedy and Levin (2008) argue that verbs, specifically degree achievements (e.g., *widen*, *cool*, *straighten*, etc.), are fixed to a degree through a measure-of-change function, which “tracks change over the course of an event” (cf. Rett 2013:1128). Adjectives, on the other hand, are not fixed to degrees through this function. Instead, adjectives have a direct link to degrees through a degree head without reference to events. Kennedy (2012) further develops this idea, but concludes that while adjectives lexicalize degree arguments, verbs do not. He shows that degree achievements and adjectives exhibit systematic semantic contrasts: the interpretation of degree achievements and adjectival comparisons pattern to the exclusion of adjectives without comparative morphology (i.e., positive adjectives). Kennedy (2012) suggests that this difference between verbs and adjectives is because verbs also rely on an event argument, while adjectives do not

(cf. Kennedy and Levin 2008). Rett (2013) has also defended the idea that verbs lack degree arguments through evidence from similitive constructions in English (e.g., *as long as...*).

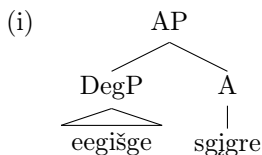
Following this work, I suggest that adjectives in Hocak can be in a complement position of a degree head. A gradable adjective like *sgigre* ‘heavy’ has the lexical entry in (81), where I represent the adjective’s grade or degree argument with “G” and its theme role with “Th.”

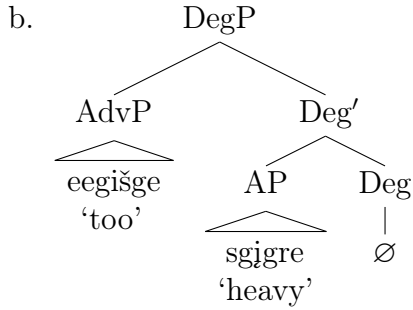
- (81) *sgigre* ‘heavy’, ⟨Th, G⟩

I propose that *eegışge* is generated in the specifier of DegP, and the Deg head in this construction is phonologically null (cf. (80b)). An example like in (82a) (repeated from (69)) has the structure in (82b). In (82), the null degree head associated with *eegışge* ‘too’ binds the degree argument of *sgigre* ‘heavy’. While verb phrases in Hocak are underlying head-final (Johnson and Rosen 2014a), it is less clear whether the adjectival domain is better treated as head-final or head-initial. There is not much empirical evidence to suggest one or the other. For the purposes here, I assume that APs and DegPs are head-final.¹⁰

- (82) a. Wijukra eegışge *sgigre*.
 wujuk-ra eegışge Ø-*sgigre*
 cat-DEF too 3S-heavy
 ‘The cat is too heavy.’

¹⁰Baker (2003a,b) suggests a similar structure for *totemo* ‘very’ in Japanese: *totemo* ‘very’ sits in the specifier of a phonologically null degree head. The data with *totemo* ‘very’ are parallel to the data with *eegışge* ‘too’. However, note that we could instead follow an approach where the degree phrase is in the specifier of AP (see e.g., Jackendoff 1977). The structure is depicted in (i). In this case, *eegışge* ‘too’ realizes the degree head. However, nothing crucially hinges on the structural position of DegP within the AP. See footnote 11 for the structure of superlatives under this analysis.



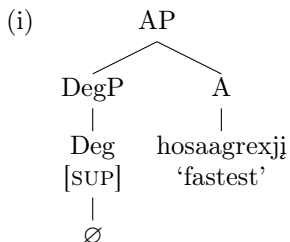


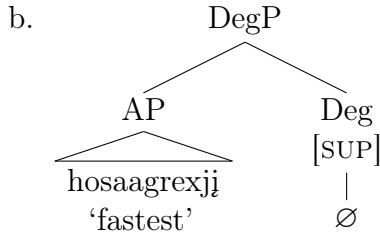
Given this background and the structure in (82b), we can now understand why verbs are not possible with degree phrases. I attribute the ungrammaticality of verbs with *eegišge* to the hypothesis that the degree head associated with *eegišge* selects for lexical items with degree arguments. Since verbs in Hocak do not have degree arguments as part of their lexical entry, but instead have an event, the degree head does not have a degree argument to bind. This results in ungrammaticality. A degree head can measure the state of the adjective, but it cannot link the event of a verb. In other words, the structure is ruled out because there is a mismatch between the selectional restrictions of DegP and a verb phrase.

Let us now turn to the structure of the superlative morpheme *ho-...-xji*. An adjective with the superlative is shown in (83).¹¹

- (83) a. Henryga hosaagrexjira wa'unaḱšanaḱ..
 Henry-ga ho-saagre-xji-ra ∅-wa'unaḱ-šanaḱ
 Henry-PROP SUP-fast-SUP-DEF 3S.AUX-POS.NEUT-DECL
 'Henry is the fastest.'

¹¹Recall that it is possible that the degree phrase merges in the specifier of the AP. This is depicted in (i) for superlative adjectives. Again, nothing crucially hinges on the structural position of DegP.





It is not crucial to the analysis whether we assume that the adjective merges fully inflected with *ho-...-xji* and is then licensed by a null degree head, or the adjective raises to Deg, and the features in Deg plus the adjective are spelled out with the appropriate form. For illustrative purposes, I will assume that the adjective merges into the syntax fully inflected, and it may check the superlative's morphological features in situ.

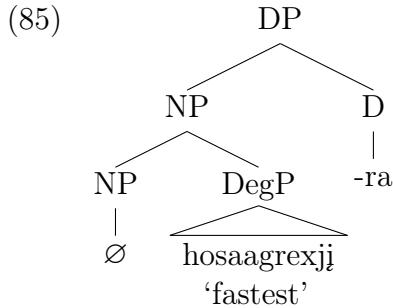
The reason that verbs cannot participate in the structure involving *ho-...-xji* is the same as the one I provided for *eegišge*. That is, I maintain that only adjectives in Hocak have a degree argument as part of their argument structure, while verbs lack such an entry. For example, a verb like *šiibre* 'fall' in (76a) has an e-role, but it does not have a grade-role. Since this verb does not have a grade-role, the structure is ungrammatical: the Deg head does not have anything to bind, which is an instance of vacuous quantification.

Moreover, Matushansky (2008) argues that superlative phrases are always attributive. This would mean that superlative phrases in Hocak are not licensed in predicative position like the examples with *eegišge* are. Under Matushansky's account, what appears to be a superlative AP in a predicative position is in fact an NP with a null head noun, and the superlative modifies this null noun. The structure that she presents is shown in (84) (Matushansky 2008:28).

(84) This story is [_{DP} the best $\emptyset_{NP}$]

The fact that superlatives can appear in argument positions (see (73)) suggests that like English superlatives, Hocak superlatives are in an attributive position. The attributive

adjective structure discussed in section 2.2 above showed that attributive adjectives adjoin to NP. Following the structure in section 2.2 and Matushansky (2008), a superlative would thus be adjoined to a null NP. This is schematized in (85).¹²



If a verb were to appear as the complement of a superlative degree head, it would be in a position adjoined to an NP. When verbs appear in attributive positions, they are unable to have their e-role bound by a local T. As a result, the structure is ungrammatical. Thus, verbs are ungrammatical as the complement of degree heads that encode superlative semantics for two reasons. One is because degree heads cannot link the event of a verb, and the second is because a verb's e-role cannot be bound by a local T. On the other hand, adjectives can adjoin to an NP because adjectives do not have an e-role: there are no grammatical principles violated here.

In this section, I have presented two more environments where adjectives differ from verbs: only adjectives can be the complement of the degree heads associated with *eegišge* 'too' and the superlative morpheme *ho-...-xji*. The reason why verbs are not allowed as the complement of such a degree head is because they need to bind a degree-argument, but verbs do not carry a degree entry as part of their thematic structure. Verbs carry an e-role. It was also shown that verbs cannot combine with the superlative morpheme since superlative phrases must merge in an attributive position. A verb's e-role cannot be bound in such a

¹²Chapter 4 provides a more detailed account of superlatives and presents evidence that superlatives are attributive.

position, following the argument in section 2.2. This analysis further supports the existence of a separate category in Hocak; namely, adjectives.

2.3.5 Resultative Secondary Predication

This section demonstrates that resultative secondary predication provides more evidence for the existence of adjectives in Hocak. Resultatives are complex predicates that put together a means predicate and a result predicate, where neither is licensed by a conjunction or an adposition (Williams 2008:81).

In the second subsection, I follow Li (1993) and show that the order of constituents in the Hocak resultative construction provides a means of analyzing the result predicate as adjectival. Specifically, Li argues that when the result and the matrix event are verbs, they have a strict ordering of matrix verb-result. This is due to a restriction that Li calls the *Temporal Iconicity Constraint*, which roughly states that temporal relations must be mapped directly into the morphosyntactic component. The result predicate in Hocak precedes the matrix verb, which indicates that the result must be an adjective.

In the third subsection, I demonstrate that verbs are barred from being the result predicate in Hocak resultatives. I claim that verbs cannot be a result predicate in Hocak resultatives because the result predicate in Hocak projects a functional head that must bind the grade-role of an adjective. In particular, I show that only gradable adjectives can be resultative predicates in Hocak. Since verbs do not have grade-roles that can be linked by a degree head, verbs cannot be result predicates.

However, I begin by presenting some background information on resultatives in Hocak.

2.3.6 The Data and Basic Structure of Hocak Resultatives

Hocak exhibits resultative predication, as shown in (86). The result immediately precedes the matrix verb, while the direct object surfaces to the left of the result. For example, in (86a), the object *maq̄sra* ‘the metal’ precedes the result *paras* ‘flat’, which in turn is to the left of the verb *gistak* ‘hit’.

- (86) a. Meredithga maq̄sra paras gistakšana.
 Meredith-ga maq̄s-ra paras Ø-gistak-šana
 Meredith-PROP metal-DEF flat 3S-hit-DECL
 ‘Meredith hit the metal flat.’
- b. Matejaga peešjjra žiip̄ik rucgisšana.
 Mateja-ga peešji-ra žiip̄ik Ø-rucgis-šana
 Mateja-PROP hair-DEF short 3S-cut-DECL
 ‘Mateja cut the hair short.’
- c. Meredithga maq̄sra gišj̄n̄šj̄n̄ gižapšana.
 Meredith-ga maq̄s-ra gišj̄n̄šj̄n̄ Ø-gižap-šana
 Meredith-PROP metal-DEF shiny 3S-polish-DECL
 ‘Meredith polished the metal shiny.’
- d. Hunterga wagus̄esik̄ara hon̄ajas warusc̄gicšana.
 Hunter-ga wagus̄esik̄a-ra hon̄ajas wa-Ø-rusc̄gic-šana
 Hunter-PROP shoelaces-DEF tight 3PL.O-3S-tie-DECL
 ‘Hunter tied the shoelaces tight.’

To show that the resultatives constitute another area where adjectives differ from verbs, it is important to understand the structure of resultatives in Hocak. Below, I briefly provide background on Hocak resultatives.

First, the result is not a head that forms a compound with the matrix verb: it can include adverbial modifiers, such as *hikyhe* ‘quickly’, in (87a) and the intensifier suffix *-xj̄j̄* in (87b).

- (87) a. Meredithga maḡsra paras **hikuhe** gistakšana.
 Meredith-ga maḡs-ra paras hikuhe Ø-gistak-šana
 Meredith-PROP metal-DEF flat quickly 3S-hit-DECL
 ‘Meredith hit the metal flat quickly.’
- b. Meredithga maḡsra parasxji gistakšana.
 Meredith-ga maḡs-ra paras-**xji** Ø-gistak-šana
 Meredith-PROP metal-DEF flat-XJI 3S-hit-DECL
 ‘Meredith hit the metal very flat.’

Second, the result XP is VP-internal. Levin and Rappaport (1995) use VP-ellipsis in order to show that resultatives are VP-internal, and that they are part of the eventuality of the VP. Hocak has a type of VP-ellipsis shown in (88) and (89): the light verb *yū* can replace either a minimal VP or a multi-segmental VP, resulting from adjunction to VP. (88) shows an example of VP-ellipsis that targets the object and the verb, while in (89), VP-ellipsis targets a VP-level adjunct (*xjanqre* ‘yesterday’) and the verb.

- (88) Cecilga [VP waḡatirehiḡa ruwi] kjane anaḡa nee ṡge [haui] kjane.
 Cecil-ga waḡatire-hiḡa Ø-ruwi kjane anaḡa nee ṡge ha-ui kjane
 Cecil-PROP car-INDEF 3S-buy FUT and I also 1S-do FUT
 ‘Cecil will buy a car, and I will too.’ (Johnson 2013, (5))
- (89) Cecilga [VP xjanqre waši] anaḡa Bryanga ṡge [ui].
 Cecil-ga xjanqre Ø-waši anaḡa Bryan-ga ṡge Ø-ui
 Cecil-PROP yesterday 3S-dance and Bryan-PROP also 3S-do
 ‘Cecil danced yesterday, and Bryan did too.’ (Johnson 2013, (6a))

As shown in (90b), it is not possible to “strand” the result predicate *ṡuuc* ‘red’ under VP-ellipsis. It thus follows that the result must be inside the VP.

- (90) a. Hunterga [VP naaju seep hogiha] anaḡa Bryan-ga ṡge [ui].
 Hunter-ga naaju seep Ø-hogiha anaḡa Bryan-ga ṡge Ø-ui
 Hunter-PROP hair black 3S-dye and Bryan-PROP too 3S-do
 ‘Hunter dyed the hair black and Bryan did, too.’

- b. * Hunterga naaju seep hogiha anağa Bryanga šge šuuc uų.
 Hunter-ga naaju seep Ø-hogiha anağa Bryan-ga šge šuuc Ø-uų
 Hunter-PROP hair black 3S-dye and Bryan-PROP too red 3S-do
 ‘Intended: Hunter dyed the hair black and Bryan did red, too.’

(91) contrasts with (90). (91) contains the adverb *wasisik* ‘energetically’ as a depictive. Since depictives are typically analyzed as adjuncts that occupy a VP-external position (Levin and Rappaport Hovav 1995), it is expected that they can be stranded by VP-ellipsis.

- (91) Bryanga [VP waarucra hoix’ik waža] anağa Meredithga **wasisik** [uų].
 Bryan-ga waaruc-ra hoix’ik Ø-waža anağa Meredith-ga wasisik Ø-uų
 Bryan-PROP table-DEF tired 3S-wipe and Meredith-PROP energetic 3S-do
 ‘Bryan wiped the table tired(ly) and Meredith did energetically.’

As we saw in (88), *uų* affects the verb, its complement and other adjuncts. Since a result predicate is not strandable with *uų*, it must be the case that the result is inside the VP, and thus is part of the core eventuality of the VP.

A piece of evidence that the result predicate is not a clause comes from the fact the result phrase cannot take the declarative *-šqna* (as in (92a)) or the complementizer *-ra* (as in (92b); cf. (86)).

- (92) a. * Matejaga peešjjra žiipjkšana rucgisšana.
 Mateja-ga peešjj-ra žiipjk-šana Ø-rucgis-šana
 Mateja-PROP hair-DEF short-DECL 3S-cut-DECL
 Intended: ‘Mateja cut the hair short.’
 b. * Matejaga peešjjra žiipjkra rucgisšana.
 Mateja-ga peešjj-ra žiipjk-ra Ø-rucgis-šana
 Mateja-PROP hair-DEF short-COMP 3S-cut-DECL
 Intended: ‘Mateja cut the hair short.’

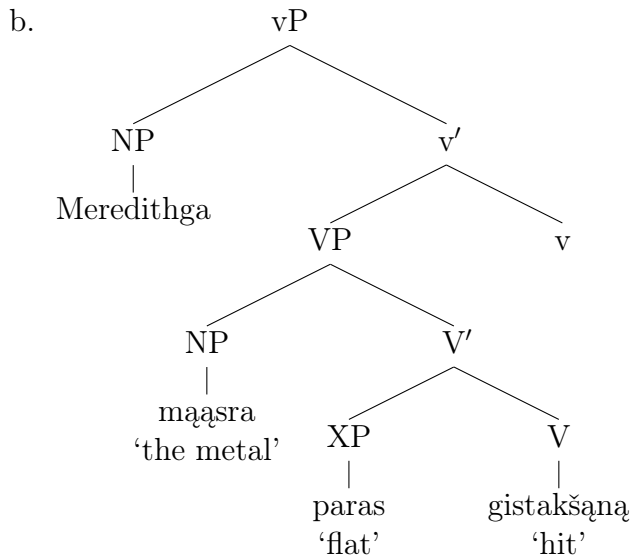
The result also cannot take the future tense marker *kjane*, as in (93), even though the hair becoming short would necessarily take place after cutting it.

- (93) *Matejaga peešjira žiipik ikjane rucgisšana.
 Mateja-ga peešji-ra žiipik kjane Ø-rucgis-šana
 Mateja-PROP hair-DEF short FUT 3S-cut-DECL
 Intended: ‘Mateja cut the hair short.’

If the result could take one of these suffixes, this would mean that it would have the syntactic status of a clause. Since the examples in (92) and (93) are ungrammatical, the result must not be a clause. Since the result phrase and the object NP do not form a clause, resultative predication is another argument against Helmbrecht’s (2006a) claim that NP-modifying adjectives are always in relative clauses.

Based on the data above, I propose that resultatives in Hocak have the structure in (94). Hocak resultatives project a phrasal XP as the complement of the verb in a Larsonian “VP-shell” (Larson 1988), while the object of the resultative is in Spec,VP.

- (94) a. Meredithga maasra paras gistakšana.
 Meredith-ga maas-ra paras Ø-gistak-šana
 Meredith-PROP metal-DEF flat 3S-hit-DECL
 ‘Meredith hit the metal flat.’



The structure in (94) straightforwardly explains the data seen above. First, the result is not a head since the intensifier suffix *-xji* can attach to the result, and adverbs (e.g., *hikyhe*

‘quickly’) can intervene between the result and the matrix verb. Second, the result is VP-internal, which was shown by the fact that the result cannot be stranded by VP-ellipsis. This is in contrast to depictive secondary predicates, which can be stranded. Third, since the result cannot take tense, clause-typing (e.g., declarative), or complementizer suffixes, this indicates that it is not a CP or TP. This points towards the conclusion that the result is not a clause.

The basic structure of resultatives in Hocak has now been established. In the next two sections, I examine how Hocak resultatives provide evidence for adjectives in the language. I will argue that the result XP is an AP.

2.3.7 The Temporal Iconicity Constraint and Resultatives

Following Li (1993), I suggest that the fact that the result precedes the verb in resultative predication in Hocak provides evidence that adjectives are a separate lexical category in Hocak. Specifically, I argue that since the result precedes the matrix verb in resultatives, Li’s (1993) *Temporal Iconicity Constraint* would be violated if the result were a verb. Rather, since the result *must* precede the verb in Hocak resultatives, the result cannot be a verb. I claim that the result is an adjective.

Li (1993:499) proposes his constraint in order to account for the restrictions on the order of verbs in V-V resultative compounds in Chinese and Japanese. The first V (V-cause) always encodes the event, while the second V (V-result) indicates the result of the event. Li shows that V-cause must temporally and morphologically precede V-result. Li formalizes this constraint as in (95).

(95) *Temporal Iconicity Constraint (TIC)*:

Let A and B be two subevents (activities, states, changes of states, etc.) and let A’ and B’ be two verbal constituents denoting A and B, respectively; then the temporal

relation between A and B must be directly reflected in the surface linear order of A' and B' unless A' is an argument of B' or vice versa.

For example, Li notes that in both Chinese and Japanese, V-cause is the first verb of the compound. Consider the Chinese example in (96) and the Japanese example in (97).

- (96) Tátoa tiào-fán-le (Yōuyou le).
 Taotao jump-bored-ASP Youyou LE
 ‘Taotao jumped and as a result he/(Youyou) got bored.’ (Li 1993:480, (1b))
- (97) John-ga Mary-o karakai-akiru-ta
 John-NOM Mary-ACC tease-bored-PAST
 ‘John teased Mary and as a result John got bored.’ (Li 1993:481, (2b))

What is important to note here is that V-cause always precedes V-result. In (96), the V-cause *tiào* ‘jump’ necessarily precedes V-result *fán* ‘bored’. Without the parentheses in (96), Taotaos’ jumping causes Youyou to become bored. With the parentheses in (96), Taotao’s jumping makes himself become bored. In (97), the V-cause *karakai* ‘tease’ must appear to the left of the V-result *akiru* ‘bored’.

A further piece of evidence for the TIC comes from serial-verbs in Sranan and Ijò. Sranan is syntactically a head-initial language, whereas Ijò is head-final. Both examples in (98) illustrate that the verb phrase that denotes getting ahold of the instrument linearly precedes the central action. That is, ‘take the knife’ in Sranan comes before ‘cut the bread’, and the same pattern is seen in Ijò with ‘basket take’ preceding ‘yam cover’.

- (98) a. Mi e teki a nefi koti a brede. (Sranan; SVO)
 I ASP take the knife cut the bread
 ‘I cut the bread with the knife.’
- b. áràú su-ye ákì buru teri-mí. (Ijò; SOV)
 she basket take yam cover-PAST
 ‘She covered a yam with a basket.’ (Li 1993:500, (38))

Despite the strong predictions that the TIC makes, it is not intended to account for all resultative constructions. According to Li's proposal, the TIC applies only if two conditions are met: one, the constituents involved are both verbal, and two, the verbal constituents must not be in a predicate-argument relation (e.g., causatives). Here I am only concerned with the first condition, as this second condition does not apply to Hocak resultatives. Li presents an example from German to illustrate the first constraint, as in (99).

- (99) Er will das Eisen flachschlagen.
 he wants the iron flat.pound
 ‘He wants to pound the iron flat.’

The result encoded by *flach* ‘flat’ linearly precedes the activity *schlagen* ‘pound’. Since *flach* ‘flat’ is an adjective, Li claims that the TIC does not apply. Rather the head-final structure of German determines the order of *flach* ‘flat’ and *schlagen* ‘pound’.

In summary, while the TIC applies to verbal constituents, the TIC has nothing to say about when adjectives form similar events with verbs.

Let us return to the Hocak data. We see that the result precedes the matrix verb, as in (100a) (repeated from (86a)). That is, *paras* ‘flat’ linearly precedes *gistak* ‘hit’. In fact it is ungrammatical for the result to be postverbal, as shown in (100b).

- (100) a. Meredithga maasra **paras** gistakšana.
 Meredith-ga maas-ra paras Ø-gistak-šana
 Meredith-PROP metal-DEF flat 3S-hit-DECL
 ‘Meredith hit the metal flat.’
- b. * Meredithga maasra gistakšana, **paras**.
 Meredith-ga maas-ra Ø-gistak-šana paras
 Meredith-PROP metal-DEF 3S-hit-DECL flat
 Intended: ‘Meredith hit the metal flat.’

Accordingly, if apparent adjectives Hocak are stative verbs, then the grammaticality of examples like (100a) is surprising. We expect (100a) to be ungrammatical, given the TIC.

Since the TIC does not rule out examples like (100a), we can conclude that the result is not a verb. This is similar to the German example in (99). Moreover, the fact that the order that the TIC predicts, as in (100b), is ungrammatical also leads to the conclusion that the result is not a verb.¹³ I take this as evidence that the result is an AP. Thus, resultatives support the claim that Hocak has adjectives.

2.3.8 Barring Verbs as the Result

In this section, I show that adjectives can appear in resultative secondary predication, while verbs cannot. To account for the contrast, I argue that we need to slightly refine the structure of the result phrase. The result phrase in Hocak is decomposed into an adjectival head and a degree head. Below, I demonstrate that only gradable adjectives may be result predicates in Hocak. If verbs do not have a grade-role to be discharged, the structure will be ruled out as instance of vacuous quantification. I claim this is why verbs are barred from resultatives in Hocak.

Compare the example in (101a) with (101b), shown with the verb *šiibre* ‘fall’.

- (101) a. Matejaga peešjjra žiipjk rucgisšana.
 Mateja-ga peešjj-ra žiipjk Ø-rucgis-šana
 Mateja-PROP hair-DEF short 3S-cut-DECL
 ‘Mateja cut the hair short.’
- b. *Matejaga peešjjra šiibre rucgisšana.
 Mateja-ga peešjj-ra šiibre Ø-rucgis-šana
 Mateja-PROP hair-DEF fall 3S-cut-DECL
 Intended: ‘Mateja cut the hair (so that) it falls.’

The ungrammaticality of a verb like *šiibre* ‘fall’ as in (101b) indicates that this predicate is somehow different than the one in (101a). We see that adjectives can appear in an

¹³More needs to be said as to why the result cannot be postverbal. Johnson and Rosen (2014a) propose that constituents are moved to a postverbal position via an EPP feature that can only attract DPs. I leave a full explanation of this issue open for now.

environment where verbs are barred.

If we take a closer look at Hocak, we notice that verbs are not the only elements that cannot be a secondary resultative predicate. While I argue that only adjectives can be resultative predicates in Hocak, not all adjectives are available in this position. Crucially, non-gradable adjectives cannot appear as a result predicate. The example in (102) illustrates this for the non-gradable adjective *t'ee* ‘dead’. Note that the English equivalent is grammatical, as indicated by the translation in (102).

- (102) *Bryanga caara t'ee guucšana.
 Bryan-ga caa-ra t'ee Ø-guuc-šana
 Bryan-PROP deer-DEF dead 3S-shoot-DECL
 Intended: ‘Bryan shot the deer dead.’

We know that *t'ee* ‘dead’ is an adjective since it behaves the same way that other adjectives do. Recall from section 2.2.2 that adjectives do not have to agree with their head noun, whereas verbs in relative clauses do. Example (103) shows that *t'ee* ‘dead’ does not have to agree with its head, which is consistent with adjectives in Hocak. That is, *t'ee* ‘dead’ does not take the 3rd person plural marker *-ire*.

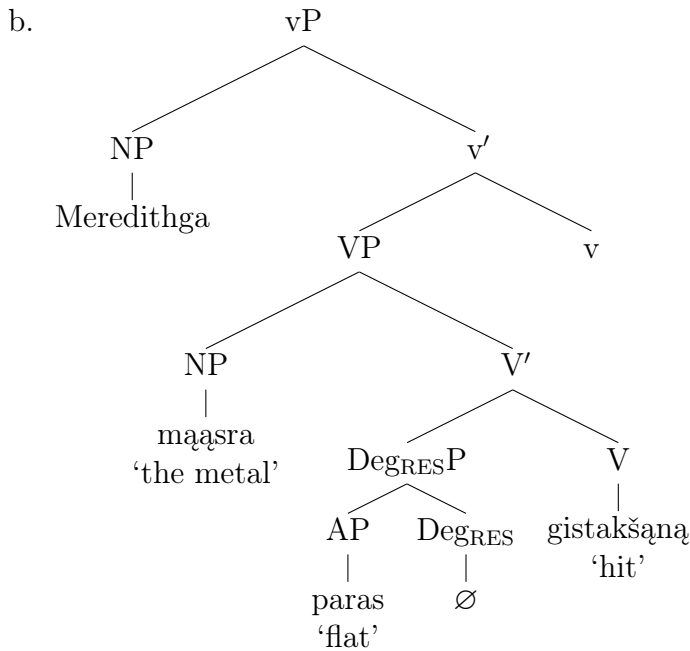
- (103) Bryanga caa t'eera waruwj.
 Bryan-ga caa t'ee-ra wa-Ø-ruwj
 Bryan-PROP deer dead-DEF 3PL.O-3S-buy
 ‘Bryan bought the dead deer (pl).’

In addition, *t'ee* ‘dead’ can appear with an elided head noun (104b). In section 2.2.3, I showed that adjectives in noun phrases can appear with an elided head noun, while on the other hand, the head of a relative clause must be overt. Thus, (104) indicates that *t'ee* ‘dead’ behaves like other adjectives in Hocak.

- (104) a. Matejaga keeçak coora ruwı anaga Bryanga keeçak t'eera
 Mateja-ga keeçak coo-ra Ø-ruwı anaga Bryan-ga keeçak t'ee-ra
 Mateja-PROP turtle green-DEF 3S-buy and Bryan-PROP turtle dead-DEF
 ruwı.
 Ø-ruwı
 3S-buy
 'Mateja bought the green turtle and Bryan bought the dead turtle.'
- b. Matejaga keeçak coora ruwı anaga Bryanga t'eera ruwı.
 Mateja-ga keeçak coo-ra Ø-ruwı anaga Bryan-ga t'ee-ra Ø-ruwı
 Mateja-PROP turtle green-DEF 3S-buy and Bryan-PROP dead-DEF 3S-buy
 'Mateja bought the green turtle and Bryan bought the dead one.'

To account for the restriction seen in (101b) (and (102)), I claim that the resultative predicate in Hocak projects as a DegP. The new proposed structure of resultatives in Hocak is as shown in (105).

- (105) a. Meredithga maasra paras gistakšana.
 Meredith-ga maas-ra paras Ø-gistak-šana
 Meredith-PROP metal-DEF flat 3S-hit-DECL
 'Meredith hit the metal flat.'



According to the revised structure in (105b), the result phrase does not project as an AP; rather it projects as a degree phrase that I label Deg_{RES}P. Hocak resultatives are obtained by specifying the eventuality to the highest degree. Crucially, this means that whatever merges with Deg_{RES}P must be gradable. The degree phrase needs something in its complement that has a grade-role. In other words, Deg_{RES}P seeks to combine with a gradable predicate.

This is in line with Wechsler's (2005) proposal concerning the constraints on the result predicate in English. Wechsler (2005) observes that English resultatives with transitive verbs are telic, as evidenced by the imperfective entailment test in (106).

- (106) a. John is hammering the metal. $\Rightarrow$ John has hammered the metal. (atelic)
 b. John is hammering the metal flat. $\nRightarrow$ John has hammered the metal flat. (telic)

Wechsler accounts for this contrast by adopting Krifka's (1992) definition of telicity: event structure is homomorphic to the scale structure that affects the object. In other words, there must be homomorphism between the property scale of the adjective in resultatives and the event denoted by the matrix verb. According to Wechsler, this means that the telicity of the event depends on the scale structure of the adjective in the resultative predicate. Since the scale structure needs to be homomorphic with an event, this entails the result predicate needs to be gradable; namely, it has to be an AP. I suggest that resultatives in Hocak ensure that the predicate is gradable with a Deg_{RES}P. Therefore, there can be homomorphism between the scale and the event. The telicity of the VP results because Deg_{RES}P selects a gradable AP and thus produces a bounded predicate.

Under the present analysis, the incompatibility of an adjective like *t'ee* 'dead' as a result predicate follows from the hypothesis that resultative predicates project a degree phrase. Since *t'ee* 'dead' does not have a degree argument, the structure is ungrammatical due to a ban on vacuous quantification.

It should be noted that Hocak does not appear to exhibit many other non-gradable adjectives.

tives. One other possible non-gradable adjective in Hocak is *taanipase* ‘triangle, triangular’. Such an adjective is ungrammatical as a resultative predicate, as in (107). Note that the English non-gradable adjective *triangular* is also ungrammatical as a result predicate, as indicated by the English translation in (107).

- (107) * Meredithga maqsra taanipase gistakšana.
 Meredith-ga maqs-ra taanipase Ø-gistak-šana
 Meredith-PROP metal-DEF triangle 3S-hit-DECL
 Intended: ‘Meredith hit the metal into a triangle.’ or ‘Meredith hit the metal triangular.’

The conclusion that there are not many non-gradable adjectives in Hocak, and that they are not compatible in resultatives is consistent with the literature on English resultatives. In Boas’ 2000 corpus on English resultatives, *dead* is the the only non-gradable adjective that appears as a result predicate. It is an important task to figure out why *dead* seems to be the only non-gradable adjective that is grammatical in English resultatives. I leave this for future research.

To explain the contrast between adjectives and verbs in (101), I follow the argumentation in section 2.3.4 that only adjectives can be a complement of a degree phrase because a degree head can only specify an adjective’s grade-role. The fact that verbs cannot combine with degree phrases entails that they should also not be able to act as result predicates. Thus, we can attribute the ungrammaticality of (101b) to an instance of a semantic mismatch between the selectional restrictions of DegP and a verb phrase. This is the same explanation that I gave for why verbs cannot appear with *eegişge* ‘too’ or with superlative morphology.

In this subsection, I have provided another way in which adjectives pattern differently from verbs. Verbs cannot appear as the result predicate in Hocak. The reason that verbs cannot appear as the result, I claim, is that the result predicate is dominated by a special degree phrase that I labeled “Deg_{RES}P.” A straightforward explanation arises if we assume

that degree phrases in Hocak must bind a degree argument. Since I am assuming that verbs lack a degree argument, verbs are not allowed as a result predicate. Given this difference between adjectives and verbs, I conclude that resultatives provide an argument in favor of viewing adjectives as a separate lexical category in Hocak.

2.3.9 Summary

In the previous subsections, I have presented a range of evidence that shows that a class of elements behaves differently than verbs. In each case, the evidence pointed to the fact that these elements are the lexical category adjective. Table 9 below summarizes the evidence we have seen.

Table 9
Properties of Adjectives versus Verbs

Diagnostic	Adjective	Verb
Non-intersective semantics	YES	N/A
Agrees with head	NO	YES
Requires overt head	NO	YES
Compatible with degree morphology	YES	NO
Can participate in resultatives	YES	NO

2.4 On Adjectives in Predicative Environments

Section 2.2 discussed adjectives in terms of NP-internal modification, while section 2.3 addressed adjectives with degree modification and in resultatives. This section examines adjectives in predicative environments. In this construction, an NP is the subject of the adjective. Above in section 2.1.1, we saw that adjectives in predicative environments behaved similarly to stative verbs.

First, stative verbs and adjectives in predicative environments take the same agreement

morphology, as shown in (108) and (109), respectively.

- (108) a. *hixete* b. *nixete* c. *xeteire*
 hɨ-xete *nɨ-xete* *xete-ire*
 1-big 2-big big-3PL.S
 ‘I am big.’ ‘You are big.’ ‘They are big.’
- (109) a. *hɨšiibre* b. *nɨšiibre* c. *šiibraire*
 hɨ-šiibre *nɨ-šiibre* *šiibre-ire*
 1-fall 2-fall fall-3PL.S
 ‘I fell.’ ‘You fell.’ ‘They fell.’

Adjectives and verbs can both appear with modals. Example (110) illustrates a verb with the modal *s’aare* ‘must’.

- (110) Bryanga *nɨtaʃjak* *taaxu* *racga* *s’aare*.
 Bryan-ga *nɨtaʃjak* *taaxu* Ø-*racga* *s’aare*
 Bryan-PROP coffee 3S-drink must
 ‘Bryan must have drunk coffee.’

Adjectives, such as *maqʃja* ‘strong’ and *saagre* ‘fast’, can also combine with *s’aare* ‘must’, as in (111).

- (111) a. Cecilga *maqʃja* *s’aare*.
 Cecil-ga Ø-*maqʃja* *s’aare*
 Cecil-PROP 3S-strong must
 ‘Cecil must be strong.’
- b. Meredithga *saagre* *s’aare*.
 Meredith-ga Ø-*saagre* *s’aare*
 Meredith-PROP 3S-fast must
 ‘Meredith must be fast.’

Next, consider the modal *na* ‘can’. Example (112) demonstrates that it can appear with verbs.

- (112) Matejaga wažaṭirera pij'ų ną.
 Mateja-ga wažaṭire-ra Ø-pij'ų ną
 Mateja-PROP car-DEF 3S-fix can
 'Mateja can fix the car.'

Adjectives can also appear with *ną* 'can' in (113).

- (113) a. Hunterga maąšja ną.
 Hunter-ga Ø-maąšja ną
 Hunter-PROP 3S-strong can
 'Hunter can be strong.'
- b. Meredithga saagre ną.
 Meredith-ga Ø-saagre ną
 Meredith-PROP 3S-fast can
 'Meredith can be fast.'

In addition, the declarative *-šqna* can appear with verbs and adjectives in predicate position. The examples in (114) shows verbs with *-šqna*, and the examples in (115) shows adjectives with *-šqna*.

- (114) a. Meredithga maąsra gistakšana.
 Meredith-ga maąs-ra Ø-gistak-šana
 Meredith-PROP metal-DEF 3S-hit-DECL
 'Meredith hit the metal.'
- b. Matejaga peešjira rucgisšana.
 Mateja-ga peešji-ra Ø-rucgis-šana
 Mateja-PROP hair-DEF 3S-cut-DECL
 'Mateja cut the hair.'
- c. Wijukra giyaasšana.
 wijuk-ra Ø-giyaas-šana
 cat-DEF 3S-run.away.ACT-DECL
 'The cat ran away.'

- d. Hunterga wagujera warusgicšana.
 Hunter-ga wajuje-ra wa-Ø-rusgic-šana
 Hunter-PROP shoe-DEF 3PL.O-3S-tie-DECL
 ‘Hunter tied the shoes.’
- (115) a. Šųųkra š’aakšana.
 šųųk-ra Ø-š’aak-šana
 dog-DEF 3S-old-DECL
 ‘The dog is old.’
- b. Ciira seepšana.
 cii-ra Ø-seep-šana
 house-DEF 3S-black-DECL
 ‘The house is black.’
- c. Waagax te’e staakšana.
 waagax te’e Ø-staak-šana
 paper this 3S-thin-DECL
 ‘This paper is thin.’
- d. Matejaga hirošikšana.
 Mateja-ga Ø-hirošik-šana
 Mateja-PROP 3S-shy-DECL
 ‘Mateja is shy.’

Note that in all of the examples above, both verbs and adjectives do not appear with any auxiliary or copular support. In contrast, predicative nominals must have a copula, such as *here* ‘be’ in (116).

- (116) a. *Sarahga wagax hajahiža.
 Sarah-ga wagax aja-hiža
 Sarah-PROP student-INDEF
 Intended: ‘Sarah is a student.’
- b. Sarahga wagax hajahiža here.
 Sarah-ga wagax aja-hiža Ø-here
 Sarah-PROP student-INDEF 3S-be
 ‘Sarah is a student.’

In this section, I propose that adjectives in predicative environments are also not stative verbs; rather, like predicative nominals, adjectives in predicative environments are complements of a copula. However, the copula that selects adjectives is phonologically null. Under the present account, Hocak has adjectives, even in predicative position: in both nominal and adjectival predication, there is a copula. The main difference is that nominals require an overt copula, whereas the copula that selects for adjectives must be null.

2.4.1 More on Predicative Environments and the Copula *here*

In this subsection I provide more information about predicative environments and the copula *here*. In the process, I demonstrate that adjectives and stative verbs behave differently as predicates, while adjectives in predicative position share similarities with predicative nominals.

As we have seen above, predicative nominals require a copula (e.g., *here*). In contrast, adjectives and verbs are ungrammatical as the complement of *here*.¹⁴ Consider the contrasts in (117)–(119) with *seep* ‘black’, *ijnj* ‘stone’, and *hišjaharakirujik* ‘Japanese’.¹⁵

- (117) a. *Wiišacra seep here.
 wiišac-ra seep Ø-here
 toy-DEF black 3S-be
 Intended: ‘The toy is black.’

¹⁴Hocak has a variety of copular auxiliaries (e.g., *wa’u-*, and *njhe* ‘be (in process)’). There is also a class of positional elements that can act as auxiliaries (e.g., *-jee* ‘be (standing)’, *-nak* ‘be (sitting)’, and *-qk* ‘be (lying down, moving)’). However, I suspect that *njhe* ‘be (in process)’ is an aspectual marker rather than just a copula. Adjectives can combine with these other elements. In this chapter, I deal only with the copula *here* ‘be’, and I leave it to further research to determine the properties of the other copulas. For more information on the other copular auxiliaries, see Garvin and Hartmann (2011).

¹⁵In contrast to the data shown here, Helmbrecht (2006a:299) provides an example where an adjective may appear optionally with *here*, as in (i). However, when I have consulted my speaker, he finds such examples completely ungrammatical.

- (i) žegų coonį korocho-gi žeegų aab-ra šuuj (**h**)ere hoota zii-na.
 thus fall prepare-when thus leaves-DEF red be some yellow-DECL
 ‘In the early fall, the leaves are red and some are yellow.’

- b. Wiišacra seepšana.
 wiišac-ra Ø-seep-šana
 toy-DEF 3S-black-DECL
 ‘The toy is black.’
- (118) a. * Ciira ĵini here.
 cii-ra ĵini Ø-here
 house-DEF stone 3S-be
 Intended: ‘The house is stone.’
- b. Ciira ĵini.
 cii-ra Ø-ĵini
 house-DEF 3S-stone
 ‘The house is stone.’
- (119) a. * Waąkra hišjaharakirujik here.
 waąk-ra hišjaharakirujik Ø-here
 man-DEF Japanese 3S-be
 Intended: ‘The man is Japanese.’
- b. Waąkra hišjaharakirujikšana.
 waąk-ra Ø-hišjaharakirujik-šana
 man-DEF 3S-Japanese-DECL
 ‘The man is Japanese.’

In addition, verbs are ungrammatical as the complement of *here*, as illustrated in (120). The examples in (120) are ungrammatical regardless of their translation: a present tense translation is also ungrammatical.

- (120) a. * Sarahga waši here.
 Sarah-ga waši Ø-here
 Sarah-PROP dance.ACT 3S-be
 Intended: ‘Sarah danced.’
- b. * Hunterga šiibre here.
 Hunterga šiibre Ø-here
 Hunter-PROP fall.STAT 3S-be
 Intended: ‘Hunter fell.’

There are two main differences between stative verbs and adjectives in predicative position. First, we observed in section 2.3 that the degree element *eegišge* ‘too’ cannot combine with stative verbs, but only with adjectives. (121) demonstrates, again, the contrast between a stative verb and an adjective being modified by *eegišge* ‘too’.

- (121) a. Henryga eegišge s’aagre.
 Henry-ga eegišge Ø-s’aagre
 Henry-PROP too 3S-fast
 ‘Henry is too fast.’
- b. * Hunterga eegišge šiibre.
 Hunter-ga eegišge Ø-šiibre
 Hunter-PROP too 3S-fall.STAT
 Intended: ‘Hunter fell too much/ a lot.’

Recall that I attributed this difference to the fact that only adjectives can be the complements of a degree head. However, under the analyses that treat adjectives as stative verbs in Hocak, both *s’aagre* and *šiibre* in (121) would be verbs that are the predicates of the clause. There is thus a clear difference between adjectives and stative verbs in predicative environments.

A second difference deals with the interpretation of tense. An unmarked verb is interpreted as past. A few examples of verbs in the past tense are shown in (122).

- (122) a. Hunterga šiibre.
 Hunter-ga Ø-šiibre
 Hunter-PROP 3S-fall.STAT
 ‘Hunter fell.’
- b. Matejaga hoxataprookeja heapši.
 Mateja-ga hoxatap-rook-eeja Ø-heapši
 Mateja-PROP woods-inside-there 3S-sneeze.ACT
 ‘Mateja sneezed in the woods.’
- c. Hinukra wažatirera ruwi.
 hinuk-ra wažatire-ra Ø-ruwi
 woman-DEF car-DEF 3S-buy
 ‘The woman bought the car.’

In constructions where adjectives are in predicative position, a bare adjective is obligatorily interpreted as present tense, as shown in (123).

- (123) a. Wąakra tookewehi.
 wąak-ra Ø-tookewehi
 man-DEF 3S-hungry
 ‘The man is hungry.’
 b. Wijukra sgjgre.
 wijuk-ra Ø-sgjgre
 car-DEF 3S-fat
 ‘The cat is fat.’

While unmarked verbs are interpreted as past tense, adjectives must combine with the element *gajere* ‘no longer’ to produce a past tense reading. This is exemplified in (124).

- (124) Wąakra tookewehi **gajere**.
 wąak-ra Ø-tookewehi gajere
 man-DEF 3S-hungry no.longer
 ‘The man was hungry.’

Stative verbs and adjectives in predicative position differ with respect to tense: unmarked adjectives have a present tense interpretation, while stative verbs have a past tense reading. The reason, I argue, for this difference is that these adjectives combine with a null copula. Let us compare adjectival predicates to predicates that use the copula *here* ‘be’.

The copula *here* differs in interpretation from the bare form of verbs in (122). When *here* is used as a copula with a predicative nominal, the predicate is interpreted as present tense. Consider another example of a predicative noun in (125). Like with adjectives, the element *gajere* is used to give a past tense reading, as in (126).

- (125) Cecilga wagigųshižą here.
 Cecil-ga wagigųs-hižą Ø-here
 Cecil-PROP teacher-INDEF 3S-be
 ‘Cecil is a teacher.’

- (126) Cecilga wagigüşhiža here **gajere.**
 Cecil-ga wagigüş-hiža Ø-here gajere
 Cecil-PROP teacher-INDEF 3S-be no.longer
 ‘Cecil was a teacher.’

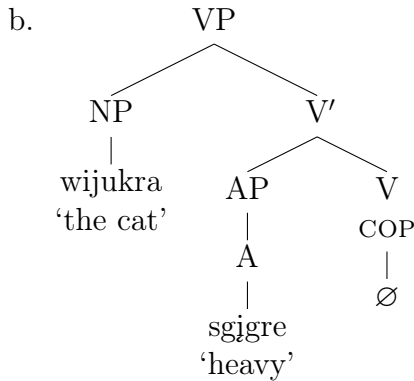
It appears that both predicative nouns with *here* and adjectives in predicative position behave the same with respect to tense: they are interpreted as present tense. A full analysis of the Hocak copula is beyond the scope of this chapter. However, I argue the copula in Hocak has a different connection to tense than other verbs. I leave open whether this difference is structural, lexical, or some other possibility. I conclude that adjectives in predicative environments behave differently than stative verbs. Since adjectives in predicative environments behave like predicative nominals in that both constructions have the same tense interpretation patterns with *here*, adjectives in predicative environments merge with a null copula.

2.4.2 The Structure of Adjectives in Predicative Position

With respect to the structure of adjectives in predicative position, I suggest that the copula projects as a VP and takes an AP or NP complement. In the case of adjectives, their subjects originate in the specifier of VP.¹⁶ The structure of an adjective in predicative position is shown in (127). I make the standard assumption that the adjective-selecting copular V is lexical but is semantically bleached: it has an e-role, but does not have a theta-role.

- (127) a. Wijukra sgigre.
 wujuk-ra Ø-sgigre
 cat-DEF 3S-heavy
 ‘The cat is heavy.’

¹⁶I will assume that subjects in predicative environments merge in Spec,VP; however, they could originate in a higher functional projection, such as Spec,vP. Nothing crucially hinges on this matter.



I suggest that the V head that selects for adjectives is phonologically null. Such a projection may also select for predicative nominals. This V, however, is realized as *here*. Besides the difference in appearance, the nominal-selecting V also has to assign a theta-role to its complement. I follow Baker (2003a), who makes a similar proposal of copular predication, and assume that there are really two different copular Vs with distinct lexical information. The idea that there are two copular V heads fits well with the fact that certain languages have copular elements that are phonologically distinct. Baker (2003a) cites Edo as such an example, as shown in (128).

- (128) a. Òzó **rè** òkpíá (nominal copula = rè)
 Ozo is man
 ‘Ozo is a man’
- b. Ébòlù **yé** pèrhè(pèrhè) (adjectival copula = yè)
 ball is flat
 ‘A ball is flat.’ (Baker 2003a:165)

The difference between the two elements in Edo and the two copulas in Hocak can be accounted for under a theory, such as Distributed Morphology (Halle and Marantz 1993). In Distributed Morphology, syntactic items are abstract bundles of features having no phonological content. Morphological material can enter the derivation late in the derivation. Languages like Hocak and Edo have two different Vocabulary items for the copula, which are spelled out differently depending on the categorial status of the copula’s complement. The

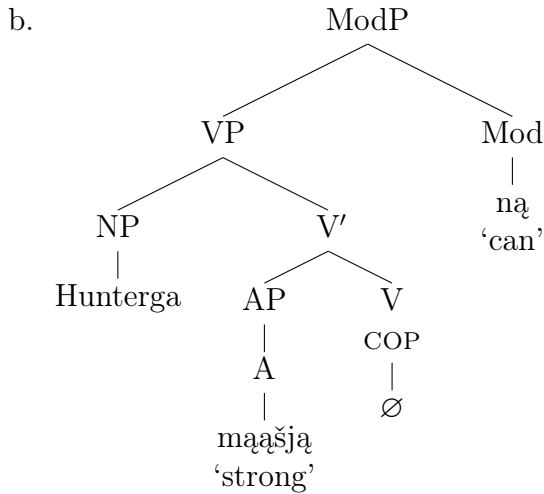
relevant Vocabulary items for the Hocak copula are illustrated in (129).¹⁷

- (129) a. $\emptyset \leftrightarrow$ copula / Adjective___
 b. here $\leftrightarrow$ copula / Noun___

We are now ready to see how the analysis in (127) above can account for the distribution of verbal morphology with adjectives in predicative position. Since the copula with adjectives is null, these verbal elements are only apparently attaching to the adjective. However, under the current hypothesis, they are actually merging with the null copula. Suppose that the modal *nq* ‘can’ originates in a functional head above the copular VP that I tentatively label “Mod(al)P.” When *nq* ‘can’ is merged into the structure, it takes the copula as a complement, but since the copula is null, *nq* ‘can’ is string adjacent to the AP. This is shown by the example in (130).

- (130) a. Hunterga maqšja na.
 Hunter-ga $\emptyset$ -maqšja na
 Hunter-PROP 3S-strong can
 ‘Hunter can be strong.’

¹⁷A natural question at this point is why the copula that selects adjectives is null, whereas the copula with predicative nouns is overt. One possible way to approach this problem is to claim that the copula has undergone an impoverishment rule (a postsyntactic feature-deletion operation) in the sense of Nevins (2011) (see also Halle and Matantz 1993, among many others). Nevins develops a version of impoverishment rules, whereby the more (contextually) marked feature of a lexical item is removed. In particular, he argues that a marked category can trigger the deletion of a feature on another category. If adjectives are the marked lexical category as compared to nouns (see Dixon 2004 for possible evidence), this could trigger the deletion of a feature on the copula. The result of this deletion process is that the copula is realized as null.



My proposal must also account for the agreement facts. Stative verbs and adjectives in predicative environments are similar in that they may both take the same agreement morphology. On the surface, it would appear that adjectives, like verbs, are agreeing with their subject. I have already provided evidence that this class of adjectives does not behave like stative verbs. Thus in order to explain why adjectives also take agreement morphology, I need to make some of my assumptions more explicit. Recall from section 2.2 that I assume agreement is located on a separate head in the syntax: T(ense) is responsible for subject agreement (Chomsky 2000, 2001).¹⁸ Person markers are phonologically bound in Hocąk. For the copular structure in (127), the copula is null, and this creates a problem: these person markers must attach to an overt morpheme. I assume the Stranded Affix Filter in (131) (see Lasnik 1981, 1995):

(131) *Stranded Affix Filter*

A morphologically realized affix must be a syntactic dependent of a morphologically realized category, at surface structure.

¹⁸I assume that in nominal predicates, the subject of the predicate and T enter into an Agree relationship to check T's uninterpretable ϕ feature. Agreement is then spelled out on the copula *here* 'be' (see below for examples).

However, these person markers cannot attach to any morpheme in the verbal structure. That is, we never see *hî-* ('1st person'), *nî-* ('2nd person'), or 3rd person markers appear bound to modals like *nq* 'can'. Cross-linguistically, modals are considered functional elements, and I assume that they are also functional in Hocak. I propose that part of morphological requirement of person markers in Hocak is that they must be phonologically bound to an overt *lexical* category. This is stated in (132).

- (132) Person person markers in Hocak must be phonologically bound to an overt lexical category.

The rule proposed in (132) accounts for the fact that person markers do not appear on modal suffixes, and also on phonologically null elements like the adjective-selecting copula.¹⁹

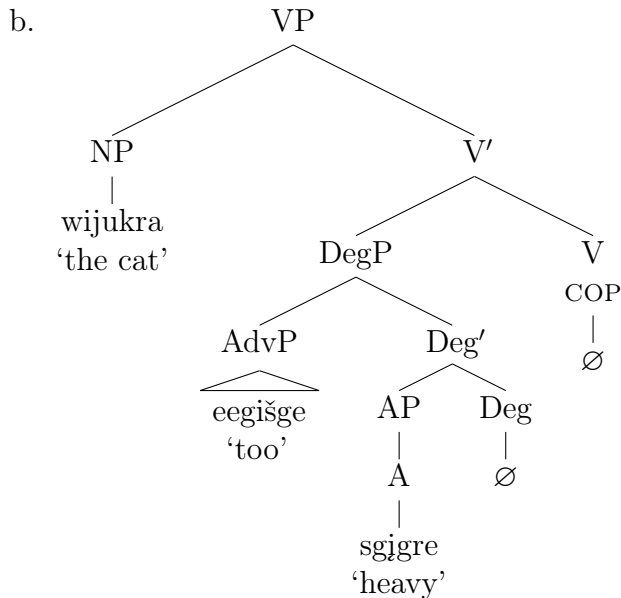
In contrast to the predicative adjective structure, the nominal-selecting copula may take person markers. I assume that *here* contains verbal information, and it can also assign a theta-role to its complement. I therefore assume that *here* is lexical. Because *here* is lexical, and it is overt, it can bear person markers, as outlined in (133).

- (133) a. *wîine*
 hî-here
 1s-be
 'I am'
- b. *nîine*
 nî-here
 2s-be
 'You are'
- c. *hereire*
 here-ire
 be-3PL.S
 'They are' (Garvin and Hartmann 2011:233)

¹⁹1st and 2nd person subject agreement surface to the left of both verbal and adjectival predicates in Hocak. I will remain agnostic as to what mechanism derives the correct position of agreement in Hocak.

The hypothesis that the adjectives in predicative position are complements to a copula also handles the position and grammaticality of the *eegišge* ‘too’ degree phrase. In such cases, the copula V selects a DegP containing the adjective as its sister. As stated above, I assume that DegP is an extended projection of AP. The copula remains null since it is still selecting for an adjectival category (i.e., DegP). Furthermore, since DegP is selecting an AP, and not a VP, the fact that *eegišge* with adjectives is grammatical can be maintained in a straightforward way. This structure is represented below in (134) with the subject originating in Spec,VP.

- (134) a. Wijukra eegišge sgigre.
 wijuk-ra eegišge Ø-sgigre
 cat-PROP too 3S-heavy
 ‘The cat is too heavy.’



To summarize, I analyze adjectives in predicative position as the complement of a null copula. According to this analysis, predicative adjectives have a parallel structure to predicative nouns. The difference between the two copulas is due to category selection, and the feature composition of each copula.

2.5 A Note on Typological Significance

In this section, I briefly address some typological issues concerning the presence of adjectives in Hocak. Previous works argued that Hocak has only verbs and does not have adjectives. However, I showed that there is stronger evidence for separate lexical category in Hocak. I have argued that Hocak has adjectives.

Moreover, this chapter can be seen as further evidence for the claims made by Baker (2003a) and Dixon (2004): adjectives are available in every language. Baker (2003a) in particular argues that in languages where adjectives look like verbs, the distinction between verbs and adjectives is neutralized on the surface. This is the case in Hocak. Dixon (2004) has also argued that if a language is going to have adjectives, they are going to belong to the prototypical types, DIMENSION, AGE, VALUE and SIZE. This holds in Hocak, as outlined in (135).

- (135) DIMENSION: xete ‘big’, xunɯ ‘small’, žiip ‘short’, šewe ‘deep’, serec ‘long’
 AGE: š’aak ‘old’, ceek ‘new’, kuukuk or wacek ‘young’
 VALUE: pij ‘good’, šiisik ‘bad’
 COLOR: seep ‘black’, sgaa ‘white’, šuuc ‘red’, coo ‘blue, green’

Hocak also has adjectives from the other three peripheral adjective classes mentioned in Dixon 2004 in (136).

- (136) PHYSICAL PROPERTY: haaja ‘hard’, p’oop’oš ‘soft’, sgigre ‘heavy’, tooke ‘wet’, maasja
 ‘strong’, howaža ‘sick’, poroporo ‘round’
 HUMAN PROPENSITY: wogizawa ‘happy’, hitok’j ‘proud’
 SPEED: saagre ‘fast’, gere ‘slow’

Another implication follows from the present proposal. It suggests that not only Hocak has adjectives, but it also opens the possibility that other Siouan languages have adjectives

as well. Much of the Siouanist literature has stated or assumed that the language family does not have adjectives. For example, Graczyk (2007:184) has stated that Crow does not have adjectives, and Boyle (2007) mentions that “All apparent adjectives in Hidatsa (and all other Siouan languages) are stative verbs” (p. 22). The previous traditional literature has focused primarily on the morphological similarities between stative verbs and adjectives. This chapter has shown that these similarities are misleading, which suggests that further investigation might reveal that other Siouan languages have adjectives, just like Hocąk.

2.6 Conclusion

This chapter has argued that adjectives in fact exist in Hocąk. I presented a variety of evidence for the categorial status of these elements.

In section 2.2, I illustrated that noun-internal modifiers are not necessarily in relative clauses. That is, it was shown that these elements can modify a noun directly, through attributive modification. I have argued that only adjectives can adjoin to NP since they do not have e-roles in their theta-grid. However, this is not possible for a verb since a verb requires a local T head to bind the e-role of the verb. The maximal projection of the noun phrase prevents the e-role from discharging.

Section 2.3 provided two more pieces of evidence towards the conclusion that Hocąk has adjectives: only adjectives can appear as the complement of degree heads and serve as a secondary resultative predicate. Both of these diagnostics provide further support that adjectives are an independent word class in Hocąk. Adjectives are allowed to appear in these two environments because adjectives do not have e-roles, but grade-roles. The degree head binds the grade-role of the adjective. In contrast, verbs do not have a grade-role, but an e-role. A degree head cannot bind an e-role.

Section 2.4 discussed the structure of adjectives in predicative environments. I have

argued that when adjectives appear to surface as the main predicate, they are in fact complements of null copula. That is, predicate adjectives have a similar structure to nominal predicates. The main difference is that the copula that takes an AP as a complement is null, whereas the nominal-selecting copula is overt as *here*.

The conclusion is that adjectives in Hocak are not sub-class of stative verbs, but that they are truly the lexical category adjective. With this conclusion, I have defended the proposals in Baker 2003a and Dixon 2004 that all languages have adjectives with data from an understudied language. In the next chapter, I analyze the internal structure of the noun phrase and the organization of attributive adjectives in Hocak.

Chapter 3

Direct Adjectival Modification in Hocak

3.1 Introduction

This chapter provides a case study on direct adjectival modification from Hocak. In Hocak, denominal adjectives (nationality/origin and material) are prenominal, whereas (almost) all other classes of adjectives merge in a postnominal position; see (137).

- (137) Meredithga [hišjahakirujik wiišgac šuucra] ruwɿ.
 Meredith-ga hišjahakirujik wiišgac šuuc-ra Ø-ruwɿ
 Meredith-PROP Japanese toy red-DEF 3S-buy
 ‘Meredith bought the red Japanese toy.’

In (137), the head noun *wiišgac* ‘toy’ is preceded by the denominal adjective *hišjahakirujik* ‘Japanese’, and is followed by the non-denominal adjective *šuuc* ‘red’.

DP-internal adjectives have been analyzed as having two sources cross-linguistically: direct modification and indirect modification. Sproat and Shih (1990) propose that in direct modification, adjectives adjoin to NPs. In indirect modification, adjectives modify nouns by forming relative clauses. Cinque (2010) builds on this analysis and argues that direct modification is lower, is ordered, and forms APs, whereas indirect modification is higher, is

unordered, and forms relative clauses (in IPs/TPs or CPs). Both of these proposals claim that morphosyntactically simple modifiers merge closer to the head noun than more complex ones, as outlined in (138).

(138) Complex Modifier > Simple Modifier > N

In this chapter, I present evidence that indicates that both pre- and postnominal adjectives in Hocak are instances of direct modification. I show that even though postnominal adjectives have free word order, they behave semantically and syntactically like APs in direct modification. The main evidence comes from the fact that the position of postnominal adjectives does not affect their interpretation. The postnominal adjective *cqat'i* ‘visible’ with an i-level reading can be farther from the noun than another modifier, as shown in (139). In (140), *pji* ‘good’ with a non-intersective interpretation can be farther from the noun than another adjective.

- (139) a. Wiiragüşge **cqat'i** šuucra Kikiga wa'unaḱṣana.
 wiiragüşge cqat'i šuuc-ra Kiki-ga Ø-wa'u-naḱ-šana
 star visible red-DEF Kiki-PROP 3S-AUX-POS.NEUT-DECL
 ‘The red visible star is Kiki.’ (‘visible’ > ‘red’)
 (i) = ‘Kiki is an inherently visible star.’ (i-level)
 (ii) = ‘Kiki is a star that is visible on a particular occasion.’ (s-level)
- b. Wiiragüşge šuuc **cqat'i**ra Kikiga wa'unaḱṣana.
 wiiragüşge šuuc cqat'i-ra Kiki-ga Ø-wa'u-naḱ-šana
 star red visible-DEF Kiki-PROP 3S-AUX-POS.NEUT-DECL
 ‘The red visible star is Kiki.’ (‘red’ > ‘visible’)
 (i) = ‘Kiki is an inherently visible star.’ (i-level)
 (ii) = ‘Kiki is a star that is visible on a particular occasion.’ (s-level)

- (140) a. Sarahga wagigʏs ceek **pj̥**hiʒa hokit'e.
 Sarah-ga wagigʏs ceek **pj̥**-hiʒa Ø-hokit'e
 Sarah-PROP teacher new good-INDEF 3S-speak.to
 'Sarah spoke to a good new teacher.' ('new' > 'good')
 (i) = 'good as a teacher' (non-intersective)
 (ii) = 'good as a person' (intersective)
- b. Sarahga wagigʏs **pj̥** ceekhiʒa hokit'e.
 Sarah-ga wagigʏs **pj̥** ceek-hiʒa Ø-hokit'e
 Sarah-PROP teacher good new-INDEF 3S-speak.to
 'Sarah spoke to a good new teacher.' ('good' > 'new')
 (i) = 'good as a teacher' (non-intersective)
 (ii) = 'good as a person' (intersective)

As a consequence, the data from postnominal adjectives suggest that lack of rigid ordering is not necessarily indicative of indirect modification (contra Cinque 2010). In contrast, prenominal modifiers are strictly ordered, which is a feature of direct modification. I suggest Universal Grammar must allow direct modification adjectives to be freely ordered, too. Adjectives that are strictly ordered must be in a direct modification structure (cf. Cinque 2010). However, when adjectives do not have strict ordering, then they could be in either a direct or indirect modification structure. I assume that DP-internal modification still has two sources: direct and indirect modification.

I propose that the ordering of adjectives in Hocak can be accounted for with two functional heads that contain a stack of features that license attributive adjectives (see Georgi and Müller 2010, Manetta 2010). Multiple features on a single head result in multiple specifiers, and the ordering of APs is determined by the stack of features on each functional head. Under this approach, the burden of determining language-specific word order is not in the narrow syntax (as in Cinque's approach), but in the lexicon/functional vocabulary (cf. Borer 1984). To account for the semantic interpretation of adjectives, I largely follow

Kim (2014b) and assume that the interpretation of an adjective depends on whether it is in the scope of a generic operator (Chierchia 1995). Non-discourse linked, non-intersective, and i-level adjectives are under the scope of Gen, while discourse-linked, intersective, and s-level adjectives are not.

The chapter is organized as follows. I begin the chapter by presenting the basic Hocak adjective ordering data in section 3.2. In section 3.3, I present how Cinque’s (2010) approach would account for the Hocak data. I show that while Cinque’s approach can account for some of the syntactic properties of postnominal adjectives, it has difficulty accounting for their interpretations. Then in section 3.4, I outline an analysis of adjective ordering based on feature stacking and the notion that the feature content of functional heads varies from language to language. In section 3.5, I demonstrate how the proposal for Hocak can be extended to account for adjective ordering patterns in English and Japanese. Finally, section 3.6 concludes the chapter.

3.2 Background on Adnominal Modifiers in Hocak

Hocak exhibits four types of DP-internal modifiers. They are listed in (141) below.²⁰

- (141)
- a. Postnominal adjectives: quality, size, shape, and color classes
 - b. Prenominal adjectives: nationality/origin and material classes
 - c. Relative clauses
 - d. Idiomatic adjectives

In the subsections that follow, I outline the data on adjective and relative clause orderings in Hocak.

²⁰Following Cinque (1994), I use the class “quality” to generally refer to quality adjectives (*new*) and also to a variety of other adjective classes, such as evaluative (*good*), domain (*visible*; Harris 2012), and identity (*different*), among others.

3.2.1 Postnominal Adjectives

Color, shape, size, and quality adjectives merge to the right of the noun. When a noun phrase contains a single adjectival modifier, it surfaces immediately to the right of the noun, as shown in (142a) with *šuuc* ‘red’. In contrast, (142b) demonstrates that the modifier cannot precede the noun.

- (142) a. Meredithga wiišgac **šuucra** ruwɿ.
 Meredith-ga wiišgac šuuc-ra Ø-ruwɿ
 Meredith-PROP toy red-DEF 3S-buy
 ‘Meredith bought the red toy.’
- b. *Meredithga **šuuc**, wiišgacra ruwɿ.
 Meredith-ga šuuc wiišgac-ra Ø-ruwɿ
 Meredith-PROP red toy-DEF 3S-buy
 Intended: ‘Meredith bought the red toy.’

Postnominal modifiers in Hocak are unordered. Example (143) shows that size (*xete* ‘big’) and color (*šuuc* ‘red’) adjectives are not strictly ordered, and (144) illustrates parallel facts with size and shape (*poroporo* ‘round’) modifiers.

- (143) a. Bryanga wağɿğɿ šuuc xetera haja.
 Bryan-ga wağɿğɿ šuuc xete-ra Ø-haja
 Bryan-PROP ball red big-DEF 3S-see
 ‘Bryan saw the big red ball.’ (‘red’ > ‘big’)
- b. Bryanga wağɿğɿ xete šuucra haja.
 Bryan-ga wağɿğɿ xete šuuc-ra Ø-haja
 Bryan-PROP ball big red-DEF 3S-see
 ‘Bryan saw the big red ball.’ (‘big’ > ‘red’)
- (144) a. Matejaga wağɿğɿ poroporo xetera hojɿ.
 Mateja-ga wağɿğɿ poroporo xete-ra Ø-hojɿ
 Mateja-PROP ball round big-DEF 3S-hit
 ‘Mateja hit the big round ball.’ (‘round’ > ‘big’)

- b. Matejaga waḡiḡi xete poroporora hojɿ.
 Mateja-ga waḡiḡi xete poroporo-ra Ø-hojɿ
 Mateja-PROP ball big round-DEF 3S-hit
 ‘Mateja hit the big round ball.’ (‘big’ > ‘round’)

Size and quality (*ceek* ‘new’) adjectives also exhibit free orders with respect to each other, as in (145).

- (145) a. Bryanga šuḡk ceek xetera haja.
 Bryan-ga šuḡk ceek xete-ra Ø-haja
 Bryan-PROP dog new big-DEF 3S-see
 ‘Bryan saw the big new dog.’ (‘new’ > ‘big’)
- b. Bryanga šuḡk xete ceekra haja.
 Bryan-ga šuḡk xete ceek-ra Ø-haja
 Bryan-PROP dog big new-DEF 3S-see
 ‘Bryan saw the big new dog.’ (‘big’ > ‘new’)

In addition, size and non-gradable adjectives, such as *t’ee* ‘dead’, do not have ordering restrictions, as evidenced by (146).

- (146) a. Cecilga hoxataprookeja caa t’ee xetehiža haja.
 Cecil-ga hoxatap-rook-eeja caa t’ee xete-hiža Ø-haja
 Cecil-PROP woods-inside-there deer dead big-INDEF 3S-see
 ‘Cecil saw a big dead deer in the woods.’ (‘dead’ > ‘big’)
- b. Cecilga hoxataprookeja caa xete t’eehiža haja.
 Cecil-ga hoxatap-rook-eeja caa xete t’ee-hiža Ø-haja
 Cecil-PROP woods-inside-there deer big dead-INDEF 3S-see
 ‘Cecil saw a big dead deer in the woods.’ (‘big’ > ‘dead’)

The ordering of three postnominal adjectives is also free, as in (147) with the adjectives *poroporo* ‘round’, *šuuc* ‘red’, and *xete* ‘big’.

- (147) a. Meredithga waḡiḡi šuuc poroporo xetera ruwɿ.
 Meredith-ga waḡiḡi šuuc poroporo xete-ra Ø-ruwɿ
 Meredith-PROP ball red round big-DEF 3S-buy
 ‘Meredith bought the big round red ball.’ (‘red’ > ‘round’ > ‘big’)

- b. Meredithga waǵiǵi poroporo šuuc xetera ruwi.
 Meredith-ga waǵiǵi poroporo šuuc xete-ra Ø-ruwi
 Meredith-PROP ball round red big-DEF 3S-buy
 ‘Meredith bought the big round red ball.’ (‘round’ > ‘red’ > ‘big’)
- c. Meredithga waǵiǵi šuuc xete poroporora ruwi.
 Meredith-ga waǵiǵi šuuc xete poroporo-ra Ø-ruwi
 Meredith-PROP ball red big round-DEF 3S-buy
 ‘Meredith bought the big round red ball.’ (‘red’ > ‘big’ > ‘round’)
- d. Meredithga waǵiǵi xete poroporo šuucra ruwi.
 Meredith-ga waǵiǵi xete poroporo šuuc-ra Ø-ruwi
 Meredith-PROP ball big round red-DEF 3S-buy
 ‘Meredith bought the big round red ball.’ (‘big’ > ‘round’ > ‘red’)
- e. Meredithga waǵiǵi poroporo xete šuucra ruwi.
 Meredith-ga waǵiǵi poroporo xete šuuc-ra Ø-ruwi
 Meredith-PROP ball round big red-DEF 3S-buy
 ‘Meredith bought the big round red ball.’ (‘round’ > ‘big’ > ‘red’)
- f. Meredithga waǵiǵi xete šuuc poroporora ruwi.
 Meredith-ga waǵiǵi xete šuuc poroporo-ra Ø-ruwi
 Meredith-PROP ball big red round-DEF 3S-buy
 ‘Meredith bought the big round red ball.’ (‘big’ > ‘red’ > ‘round’)

The variable orderings in cases in (143)–(147) above do not affect the adjective’s interpretation. That is, there are no pragmatic (e.g., topic or focus) differences.

Morphologically complex adjectives, such as superlatives (i.e., with *ho-...-xji*), must appear to the right of other APs. This is demonstrated by the contrasts in (148) and (149).

- (148) a. Cecilga xeexete šuuc hohaǵkšixjira hoti.
 Cecil-ga xee-xete šuuc ho-haǵkši-xji-ra Ø-hoti
 Cecil-PROP hill-big red SUP-high-SUP-DEF 3S-climb
 ‘Cecil climbed the highest red mountain.’
- b. *Cecilga xeexete hohaǵkšixji šuucra hoti.
 Cecil-ga xee-xete ho-haǵkši-xji šuuc-ra Ø-hoti
 Cecil-PROP hill-big SUP-high-SUP red-DEF 3S-climb
 Intended: ‘Cecil climbed the highest red mountain.’

- (149) a. Meredithga cii ceek hohaaksixjira hoti.
 Meredith-ga cii ceek ho-haaksi-xji-ra Ø-hoti
 Meredith-PROP house new SUP-high-SUP-DEF 3S-climb
 ‘Meredith climbed the highest new house.’
- b. * Meredithga cii hohaaksixji ceekra hoti.
 Meredith-ga cii ho-haaksi-xji ceek-ra Ø-hoti
 Meredith-PROP house SUP-high-SUP new-DEF 3S-climb
 Intended: ‘Meredith climbed the highest new house.’

To sum up this section, the color, size, quality, and shape adjective classes are postnominal, and they can surface in any order.²¹

3.2.2 Semantics of Postnominal Adjectives

I now turn to some of the semantic characteristics of postnominal adjectives. As illustrated in (150), some postnominal adjectives can receive either an enduring or a temporary interpretation.

- (150) Wiiragušge caqt’ira Kikiga wa’unaḱšana.
 wiiragušge caqt’i-ra Kiki-ga Ø-wa’u-naḱ-šana
 star visible-DEF kiki-PROP 3S-AUX-POS.NEUT-DECL
 ‘The visible star is Kiki.’
- (i) = ‘The inherently visible star is Kiki.’ (i-level)
- (ii) = ‘The star that is visible on a particular occasion is Kiki.’ (s-level)

The adjective *caqt’i* ‘visible’ attributes either a stable or transitory property to the head noun. Thus, (150) can either have a reading where the star *Kiki* has an intrinsic brightness that makes it visible with the naked eye (reading (i)). On the other hand, (150) can also have a reading where *Kiki* is only visible at the present moment (reading (ii)). Here I refer to the first interpretation as an individual level (i-level) predicate and the second as a stage-level

²¹See the appendix for more adjective ordering data.

(s-level) predicate (cf. Carlson 1977, Svenoninus 1994). Further note that *cqat'i* ‘visible’ in predicate position also has both an i- and s-level reading, as illustrated in (151).

- (151) Wiiragųšgera *cqat'i* wa'ųnaksšana.
 wiiragųšge-ra *cqat'i* Ø-wa'ų-nak-šana
 star-DEF visible 3S-AUX-POS.NEUT-DECL
 ‘The star is visible.’
- (i) = ‘The star is visible all of the time.’ (i-level)
- (ii) = ‘The star is visible right now.’ (s-level)

Another semantic property that can be attributed to postnominal modifiers is either an intersective or non-intersective reading. For example, the adjective *pji* ‘good’ can have either an intersective or non-intersective interpretation, as in (152).

- (152) Sarahga wagigųs *pjihiža* hokit'e.
 Sarah-ga wagigųs *pji*-hiža Ø-hokit'e
 Sarah-PROP teacher good-INDEF 3S-speak.to
 ‘Sarah spoke to a good teacher.’
- (i) = ‘good as a teacher’ (non-intersective)
- (ii) = ‘good as a person’ (intersective)

On the non-intersective reading (reading (i)), *pji* ‘good’ applies to the object as a teacher; that is, the teacher’s teaching is good. On the intersective reading (reading (ii)), *pji* ‘good’ applies to the teacher himself/herself. The teacher is good(-hearted), but his or her teaching could be bad. In other words, *pji* ‘good’ in the second reading refers to the intersection between a set of good entities and a set of teachers. The adjective *pji* ‘good’ can also have either reading when it is in predicative position, as shown in (153). This adjective can thus have both an intersective and a non-intersective interpretation in predicative and attributive positions.

- (153) Wagigırsra pij wa'ınakšana.
 wagigırs-ra pij Ø-wa'ı-nak-šana
 teacher-DEF good 3S-AUX-POS.NEUT-DECL
 'The teacher is good.'
- (i) = 'good as a teacher' (non-intersective)
 (ii) = 'good as a person' (intersective)

While *pij* 'good' can have both intersective and non-intersective interpretations, some postnominal adjectives in Hocak can only have a non-intersective reading. The adjective *wokoreesge* 'amazing' in attributive position must only modify *wagigırs* 'teacher' to mean 'be amazing as a teacher' in (154). By comparison, *wokoreesge* in predicate position can receive both a non-intersective and intersective reading. This is illustrated in (155).

- (154) Bryanga wagigırs wokoreesgehiža haja.
 Bryan-ga wagigırs wokoreesge-hiža Ø-haja
 Bryan-PROP teacher amazing-INDEF 3S-see
 'Bryan saw an amazing teacher.'
- (i) = 'amazing as a teacher' (non-intersective)
 (ii) ≠ 'amazing as a person' (intersective)
- (155) Wawigırsra wokoreesge wa'ınakšana.
 wawigırs-ra wokoreesge Ø-wa'ı-nak-šana
 teacher-DEF amazing 3S-AUX-POS.NEUT-DECL
 'The teacher is amazing.'
- (i) = 'amazing as a teacher' (non-intersective)
 (ii) = 'amazing as a person' (intersective)

Finally, adjectives like *different* in English can have either an "NP-dependent" or "discourse anaphoric" reading (see e.g., Cinque 2010). This is also the case in Hocak. As shown in (156), *hiqa* 'different' can refer to the towns that Meredith and Mateja live in (that is, NP-dependent reading; reading (i)), or a town that is different than some other town in the discourse (reading (ii)).

- (156) Cecilga Teejop eeja cii anaga Meredithga anaga Matejaga
 Cecil-ga Teejop eeja Ø-cii anaga Meredith-ga anaga Mateja-ga
 Cecil-PROP Madison there 3S-live and Meredith-PROP and Mateja-PROP
 ciinaḡ hijā ciire.
 ciinaḡ hijā cii-ire
 town different live-3PL.S

‘Cecil lives in Madison, and Meredith and Mateja live in different towns.’

(i) = ‘Meredith lives in a different town than the town that Mateja lives in.’

(ii) = ‘Meredith and Mateja live in towns that are different than the one that someone else (e.g., Cecil) lives in (i.e., Madison).’

3.2.3 Prenominal Modifiers

This section considers the relative ordering of prenominal modifiers. Prenominal modifiers are denominal and belong to nationality/origin and material classes. Parallel nouns exist for prenominal adjectives, as illustrated in (157a) and (b). The modifier *nḡḡ* in (157a), can refer to a noun that means ‘tree’, and the modifier *hišjahakirujik* in (157b) can mean ‘Japanese person’. I take this fact to indicate that prenominal modifiers in Hocak are denominal.

- (157) a. *nḡḡ* ‘wooden’ ~ *nḡḡ* ‘tree’

b. *hišjahakirujik* ‘Japanese’ ~ *hišjahakirujik* ‘Japanese person’

Adjectives belonging to material and nationality/origin classes must appear to the left of the noun, as shown in (158)–(160). The (b) examples demonstrate that they cannot be postnominal.

- (158) a. Cecilga **ḡḡḡ** ciihiḡḡ ruwḡ.
 Cecil-ga ḡḡḡ cii-hiḡḡ Ø-ruwḡ
 Cecil-PROP stone house-INDEF 3S-buy
 ‘Cecil bought a stone house.’

- b. * Cecilga cii **ijinj**hiža ruwǐ.
 Cecil-ga cii ijinj-hiža Ø-ruwǐ
 Cecil-PROP house stone-INDEF 3S-buy
 Intended: ‘Cecil bought a stone house.’
- (159) a. Meredithga **nq̃** waamĩnakhiža ruwǐ.
 Meredith-ga nq̃ waamĩnakh-hiža Ø-ruwǐ
 Meredith-PROP wooden chair-INDEF 3S-buy
 ‘Meredith bought a wooden chair.’
- b. * Meredithga waamĩnakh **nq̃**hiža ruwǐ.
 Meredith-ga waamĩnakh nq̃-hiža Ø-ruwǐ
 Meredith-PROP chair wooden-INDEF 3S-buy
 Intended: ‘Meredith bought a wooden chair.’
- (160) a. Bryanga **hišjahakirujik** wažatirehiža ruwǐ.
 Bryan-ga hišjahakirujik wažatire-hiža Ø-ruwǐ
 Bryan-PROP Japanese car-INDEF 3S-buy
 ‘Bryan bought a Japanese car.’
- b. * Bryanga wažatire **hišjahakirujik**hiža ruwǐ.
 Bryan-ga wažatire hišjahakirujik-hiža Ø-ruwǐ
 Bryan-PROP car Japanese-INDEF 3S-buy
 Intended: ‘Bryan bought a Japanese car.’

Unlike postnominal adjectives, material and nationality/origin modifiers are strictly ordered. Consider the contrast in (161) and (162): the nationality/origin adjective *hišjahakirujik* ‘Japanese’ must precede the material adjectives *ijinj* ‘stone’ in (161) and *nq̃* ‘wooden’ in (162).

- (161) a. Cecilga hišjahakirujik ijinj ciira ruwǐ.
 Cecil-ga hišjahakirujik ijinj cii-ra Ø-ruwǐ
 Cecil-PROP Japanese stone house-DEF 3S-buy
 ‘Cecil bought the Japanese stone house.’
- b. * Cecilga ijinj hišjahakirujik ciira ruwǐ.
 Cecil-ga ijinj hišjahakirujik cii-ra Ø-ruwǐ
 Cecil-PROP stone Japanese house-DEF 3S-buy
 Intended: ‘Cecil bought the Japanese stone house.’

- (162) a. Bryanga hišjahakirujik naa wažatirera ruwɿ.
 Bryan-ga hišjahakirujik naa wažatire-ra Ø-ruwɿ
 Bryan-PROP Japanese wooden car-DEF 3S-buy
 ‘Bryan bought the Japanese wooden car.’
- b. *Bryanga naa hišjahakirujik wažatirera ruwɿ.
 Bryan-ga naa hišjahakirujik wažatire-ra Ø-ruwɿ
 Bryan-PROP wooden Japanese car-DEF 3S-buy
 Intended: ‘Bryan bought the Japanese wooden car.’

Example (163) illustrates that *hišjahakirujik* ‘Japanese’ has to appear before the complex material modifier *maq̣s zii* ‘gold(en)’ (lit. ‘yellow metal’). A similar example is shown in (164) with the prenominal modifiers *waxopɨnɨxjɨ* ‘French’ and *ɨnɨ ceexi* ‘diamond’ (lit. ‘expensive stone’).

- (163) a. Cecilga hišjahakirujik maas zii aipara ruwɿ.
 Cecil-ga hišjahakirujik maas zii aipa-ra Ø-ruwɿ
 Cecil-PROP Japanese metal yellow bracelet-DEF 3S-buy
 ‘Cecil bought the Japanese gold bracelet.’
- b. *Cecilga maas zii hišjahakirujik aipara ruwɿ.
 Cecil-ga maas zii hišjahakirujik aipa-ra Ø-ruwɿ
 Cecil-PROP metal yellow Japanese bracelet-DEF 3S-buy
 Intended; ‘Cecil bought the Japanese gold bracelet.’
- (164) a. Sarahga waxopɨnɨxjɨ ɨnɨ ceexi naap hirusgichižə ruwɿ.
 Sarah-ga waxopɨnɨxjɨ ɨnɨ ceexi naap hirusgic-hižə Ø-ruwɿ
 Sarah-PROP French stone expensive ring-INDEF 3S-buy
 ‘Sarah bought a French diamond ring.’
- b. *Sarahga ɨnɨ ceexi waxopɨnɨxjɨ naap hirusgichižə ruwɿ.
 Sarah-ga ɨnɨ ceexi waxopɨnɨxjɨ naap hirusgic-hižə Ø-ruwɿ
 Sarah-PROP stone expensive French ring-INDEF 3S-buy
 Intended: ‘Sarah bought a French diamond ring.’

The strict ordering seen in (161)–(164) is not because these adjectives form a compound with the noun they modify: NP-ellipsis is possible as shown in (165). Here, the head noun

in the second conjunct has been elided. A prenominal modifier in a compound should not be able to be stranded under NP-ellipsis. If the modifier *nq̣q̣* ‘wooden’ formed a compound with its head noun, it would also be elided, contrary to fact. NP-ellipsis cannot target compound-internal material (Schäfer 2009).

- (165) Meredithga mạas woorac̣ạhịẓ̌a ruẉi aṇaga Bryanga nạạhịẓ̌a
 Meredith-ga mạas woorac̣ạ-hịẓ̌a Ø-ruẉi aṇaga Bryan-ga **nạạ**-hịẓ̌a
 Meredith-PROP metal cup-INDEF 3S-buy and Bryan-PROP wooden-INDEF
 ruẉi.
 Ø-ruẉi
 3S-buy
 ‘Meredith bought a metal cup, and Bryan bought a wooden one.’

Thus, we see that adjectives from the nationality/origin and material classes are prenominal, and that they are strictly ordered: nationality/origin > material.

3.2.4 The Position of Relative Clauses

I now briefly address the position of relative clauses with respect to adjectival modifiers. If there is a relative clause, it appears to the right of the head noun. In (166), the relative clause *ṇj̣iṇạwox rac̣g̣ra* ‘who drank a beer’ follows the head noun *ẉq̣q̣k* ‘man’. Relative clauses are marked by the element *-ra*.

- (166) Cecilga ẉạạk [RC ṇj̣iṇạwox rac̣g̣ra] hikịpa.
 Cecil-ga ẉạạk ṇj̣iṇạwox Ø-rac̣g̣-ra Ø-hikịpa
 Cecil-PROP man beer 3S-drink-COMP 3S-meet
 ‘Cecil met the man who drank a beer.’

If a relative clause appears with an attributive adjective, the relative clause must be to the right of the adjective, as in (167) and (168).

- (167) a. Cecilga wāḁk waxja [RC rookhožu saacašana ruucra], haja.
 Cecil-ga wāḁk waxja rookhožu saacašana Ø-ruuc-ra Ø-haja
 Cecil-PROP man funny pie fifteen 3S-eat-COMP 3S-see
 ‘Cecil saw the funny man, who ate fifteen pies.’
- b. *Cecilga wāḁk [RC rookhožu saacašana ruuc] waxjara, haja.
 Cecil-ga wāḁk rookhožu saacašana Ø-ruuc waxja-ra Ø-haja
 Cecil-PROP man pie fifteen 3S-eat funny-COMP 3S-see
 Intended: ‘Cecil saw the funny man, who ate fifteen pies.’
- (168) a. Bryanga wiišgac ceek [RC nijkjak gipikjanera], ruwɿ.
 Bryan-ga wiišgac ceek nijkjak Ø-gipi-kjane-ra Ø-ruwɿ
 Bryan-PROP toy new child 3S-like-FUT-COMP 3S-buy
 ‘Bryan bought the new toy that the child will like.’
- b. *Bryanga wiišgac [RC nijkjak gipikjane] ceekra, ruwɿ.
 Bryan-ga wiišgac nijkjak Ø-gipi-kjane ceek-ra Ø-ruwɿ
 Bryan-PROP toy child 3S-like-FUT new-COMP 3S-buy
 Intended: ‘Bryan bought the new toy that the child will like.’

In (167) and (168), the element *-ra* is at the far right edge of the noun phrase. The relative clause *rookhožu saacašana ruucra* ‘who ate fifteen pies’ in (167a) must be to the right of the adjective *waxja* ‘funny’. Displacing the adjective to the right of the relative clause results in an ungrammatical sentence, as in (167b). A parallel restriction is shown in (168) with the relative clause *nijkjak gipikjanera* ‘that the child will like’ and the adjective *ceek* ‘new’.

Superlatives are also ordered with respect to relative clauses. Examples (169) and (170) show that a relative clause has to be to the right of a superlative.

- (169) a. Cecilga wiišgac hoxetexjira [RC nijkjak roogura], ruwɿ.
 Cecil-ga wiišgac ho-xete-xji-ra nijkjak Ø-roogu-ra Ø-ruwɿ
 Cecil-PROP toy SUP-big-SUP-DEF child 3S-want-COMP 3S-buy
 ‘Cecil bought the biggest toy that the child wanted.’
- b. *Cecilga wiišgac [RC nijkjak roogura] hoxetexjira, ruwɿ.
 Cecil-ga wiišgac nijkjak Ø-roogu-ra ho-xete-xji-ra Ø-ruwɿ
 Cecil-PROP toy child 3S-want-COMP SUP-big-SUP-DEF 3S-buy
 Intended: ‘Cecil bought the biggest toy that the child wanted.’

- (170) a. Meredithga waaḱ hosaagrexjira [RC taani
 Meredith-ga waaḱ ho-saagre-xj̥-ra taani
 Meredith-PROP man SUP-fast-SUP-DEF tobacco
 hijjera] hikiḱa.
 Ø-hij-jee-ra Ø-hikiḱa
 3S-suckle-POS.VERT-COMP 3S-meet
 ‘Meredith met the fastest man who smokes.’
- b. * Meredithga waaḱ [RC taani hijjera]
 Meredith-ga waaḱ taani Ø-hij-jee-ra
 Meredith-PROP man tobacco 3S-suckle-POS.VERT-COMP
 hosaagrexjira hikiḱa.
 ho-saagre-xj̥-ra Ø-hikiḱa
 SUP-fast-SUP-DEF 3S-meet
 Intended: ‘Meredith met the fastest man who smokes.’

The data above give us the provisional template in (171), where “>” indicates linear order. First, denominal adjectives are prenominal and have a restricted ordering of nationality/origin preceding material. Second, color, size, shape, and quality adjectives appear to the right of the noun they modify in any order. Third, superlative adjectives (Sup-AP) with *ho- ... -xj̥* must be to the far right of other postnominal adjectives. Fourth, relative clauses are ordered to the far right of the noun phrase.

- (171) AP_(nationality/origin) > AP_(material) > N > AP_(color/shape/size/quality) > Sup-AP > RC

3.2.5 A Note on Idiomatic Adjectives

Some noun-adjective combinations form idiomatic expressions in Hocak. Consider two examples in (172).

- (172) a. šuḱxete
 šuḱ-xete
 dog-big
 ‘horse’

- b. waamɪnəkserɛc
 waamɪnək-sɛɾɛc
 chair-long
 ‘couch’

(172a) shows that the adjective *xete* ‘big’ combines with the noun *şuyk* ‘dog’ to mean ‘horse’. Another adjective cannot interrupt the idiom formed by the adjective and the noun. For instance, when *seep* ‘black’ is added to the right of *şuykxete* ‘horse’, as in (173a), the noun still means ‘horse’. In contrast, when *seep* ‘black’ intervenes, as in (173b), the idiomatic reading is lost: the noun can only mean ‘big black dog’.

- (173) a. Hunterga şuyk xete seepɾa haja.
 Hunter-ga şuyk xete seep-ra Ø-haja
 Hunter-PROP dog big black-DEF 3S-see
 (i) = ‘Hunter saw the black horse.’
 (ii) = ‘Hunter saw the big black dog.’
- b. Hunterga şuyk seep xetera haja.
 Hunter-ga şuyk seep xete-ra Ø-haja
 Hunter-PROP dog black big-DEF 3S-see
 (i) = ‘Hunter saw the big black dog.’
 (ii) ≠ ‘Hunter saw the black horse.’

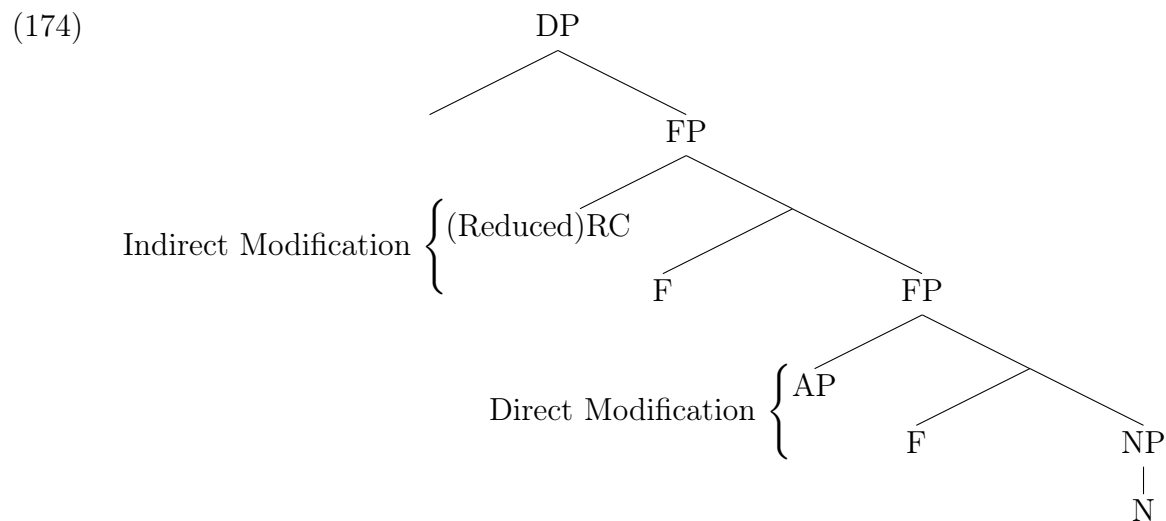
3.3 Cinque’s (2010) Approach to Adjective Ordering in Hocak

This section examines how Cinque’s (2010) would account for the Hocak data. Although there have been many approaches to adjective ordering including Larson (1998), Bouchard (1998, 2002), Scott (2002), and Svenonius (2008), I do not treat them in detail here. Since Cinque’s (2010) approach comprises the most comprehensive theory of adjective orders thus far, it is the main focus of this section. In what follows, I will argue that Cinque’s approach

cannot handle the data from Hocak. Instead I offer an analysis in section 3.4 that makes use of current minimalist machinery and the option of feature stacking. I argue that this novel approach provides a more successful account of adjective ordering in Hocak.

3.3.1 Background on Cinque (2010) and the Cartographic Approach

Cinque (2010) argues against the traditional analysis that adjectives are adjoined to NP, and that relative clauses are adjoined at the NP level or at an N' position. Rather, all attributive adjectives are generated in the specifier positions of a series of functional projections. Relative clauses are also merged in the specifiers of functional heads, but they are higher than adjectives. Cinque's (2010) conception is roughly schematized in (174), below.



As shown in the structure in (174), this hierarchy is divided into two “zones.” Building on previous research (Sproat and Shih 1990, among others), Cinque (2010) claims that adjectives can have two sources: *direct modification* is lower, is ordered, and is characterized by APs, whereas *indirect modification* is higher, is unordered, and forms predicates in (reduced) relative clauses. With respect to direct modification, individual attributive classes

are organized in a layer of functional heads, hosting APs in their specifiers (see Scott 2002 for a similar proposal). Under this approach, there is one functional head for each attributive class. (175a) shows Cinque’s (1994) hierarchy that he follows in his 2010 work (cf. Cinque 2010:122–123). In (175b), I have outlined Scott’s (2002) more articulated hierarchy for comparison. In the hierarchies in (175), “>” stands for “occupies a syntactically higher position than.”

- (175) a. *Serialization of adjectives in object-denoting nominals (Cinque 1994)*
 poss[essive] > cardinal > quality > size > shape > color > nationality
- b. *Hierarchy of AP-related functional projections for nominals (Scott 2002)*
 Determiner > ordinal number > cardinal number > subjective comment > ?eventual > size > length > height > speed > ?depth > width > weight > temperature > ?wetness > age > shape > color > nationality/origin > material > compound element > NP

On the semantic side, modifiers in direct modification are non-intersective, non-restrictive, individual-level, absolute, evaluative, and NP-dependent. On the other hand, the meaning of modifiers in indirect modification is intersective, restrictive, stage-level, relative, discourse-anaphoric, and NP-independent.

The semantic differences between direct and indirect modification in addition to the previously mentioned syntactic ones are summarized in Table 10 (Cinque 2010:33).

Table 10
Summary of Properties Associated with Each Source

Indirect Modification	Direct Modification
Stage-level	Individual-level
Restrictive	Non-restrictive
Intersective	Non-intersective
Relative	Absolute
Discourse anaphoric	NP dependent
Non-generic	Generic
Predicative	Attributive
Farther from N	Closer to N
Not rigidly ordered	Rigidly ordered

In some cases, it is possible for the same adjective to have properties of a modifier in direct and indirect modification. Moreover, both interpretations of the same modifier can modify a noun simultaneously. In (176), both the i- and s-level interpretations of *visible* can modify the same noun; however, their order is restricted: the s-level reading (indirect modification; emphasized in caps) must precede the i-level reading (direct modification). Cinque posits that emphasized adjectives are in (reduced) relative clauses, and thus are in indirect modification structures.

- (176) a. Every **VISIBLE** visible star
b. *Every visible **VISIBLE** star (Cinque 2010:19)

The Italian example in (177) shows the mirror image of (176). An adjective with an s-level reading must be outside (that is, to the right) of an adjective with an i-level interpretation.

- (177) a. una posizione invidiabile **INVIDIABILE**
a position enviable enviable

- b. *una posizione INVIDIABLE inviabile
 a position enviable enviable
 ‘an enviable enviable position’ (Cinque 2010:21)

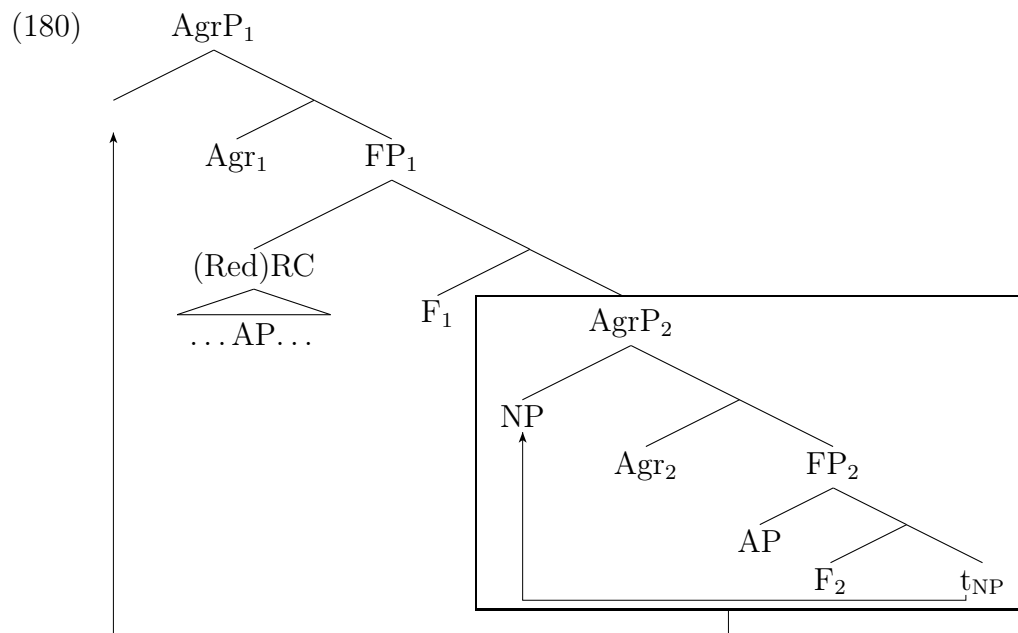
In addition, *buono* ‘good’ in Italian with an intersective interpretation has to appear to the right of the adjective with a non-intersective reading. This is illustrated in (178).

- (178) a. un attaccante buono BUONO
 a forward good good
 b. *un attaccante BUONO buono
 a forward good good
 ‘a good-hearted good forward.’ (Cinque 2010:21)

A similar example is shown in (179) for Maltese: the articulated (indirect modification; bolded) adjective must be outside the articleless (direct modification) adjective. Cinque (2010:98) hypothesizes that articulated adjectives are in relative clauses.

- (179) a. ?il-bozza hamra **l-gdida**
 the-bulb red the-new
 b. *il-bozza **l-hamra** gdida
 the-bulb the-red new
 ‘the new red bulb’ (Cinque 2010:99)

Cinque claims that only phrasal movement (i.e., movement of a constituent that contains the NP) can produce the attested orders of adjectives (and relative clauses) cross-linguistically. In each of the cases in (177)–(179) with postnominal adjectives, the head NP moves to the specifier position above the AP (Spec,AgrP₂), followed by pied-piping of AgrP₂ to a position above the indirect modifier, as shown in (180). This movement results in a Noun–Direct Modification–Indirect Modification order.



While Cinque is not explicit as to what triggers movement of the NP, he does suggest that it could be linked to *wh*-movement (Cinque 2010:39–40). In his 2005 work on the possible orders of the categories of Demonstrative, Number, Adjective, and Noun Phrase, he offers a more explicit explanation. Cinque tentatively suggests that the NP raises to a higher projection so that the AgrP can count as part of the extended projection of the noun. That is, when the NP raises, it gives its nominal properties to the AgrP. Another option would be for the NP to stay in situ, and the nominal features are given to the AgrP through an Agree relation (Chomsky 2000). As for why the AgrP moves (as in (180)), he speculates that it has to do with an attract closest condition on movement. Cinque’s (2005:326) definition of “closest” is shown in (181).

- (181) The category closest to H is the category c-commanded by H that is dominated by the fewest number of nodes (where “node” includes every node, whether “category” or “segment,” in Kayne’s (1994) sense).

In the case of (180) above, the NP moves to Spec,AgrP₂, and then AgrP₂ moves to Spec,AgrP₁ because AgrP₂ is closer than the NP to AgrP₁. The NP cannot move in a specifier-to-specifier

fashion; that is, the NP does not move to Spec,AgrP₂ then to Spec,AgrP₁. This movement operation is blocked if an attract closest condition is appealed to (see Cinque 2005 for more details). Thus indirect modification adjectives are consistently to the right of adjectives in direct modification.

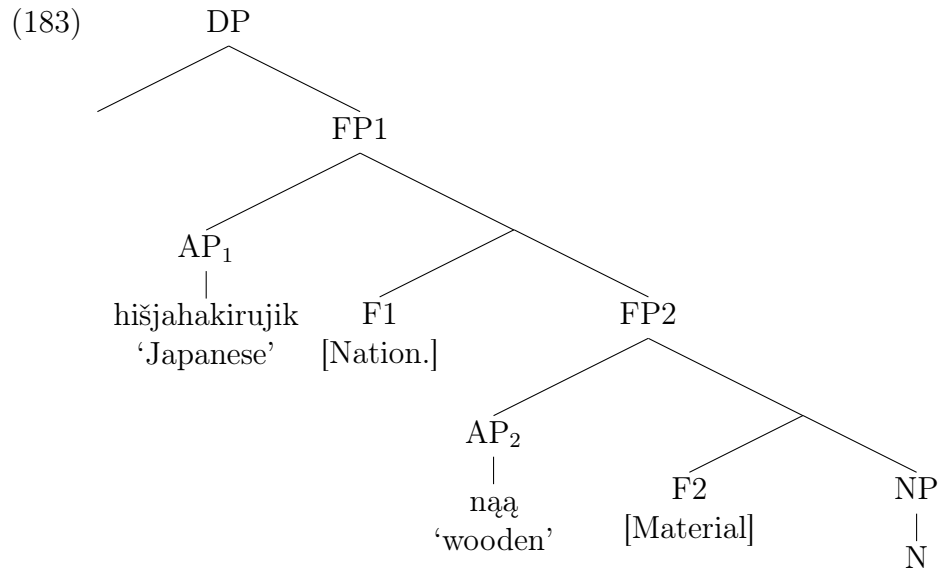
With this background, let us turn to the Hocak data to see how the cartographic approach can account for these data.

3.3.2 Comparing Cinque (2010) to Prenominal Adjectives

I start with the structure concerning prenominal adjectives. Example (162), repeated here as (182), shows that denominal adjectives appear to left of the noun in a strict order: nationality/origin > material.

- (182) Bryanga hišjahakirujik naa wažatirera ruwɨ.
 Bryan-ga hišjahakirujik naa wažatire-ra Ø-ruwɨ
 Bryan-PROP Japanese wooden car-DEF 3S-buy
 ‘Bryan bought the Japanese wooden car.’

In Cinque’s approach, since these two adjectives are strictly ordered, they must be direct modifiers. As these adjectives are direct modifiers, they merge in the unique specifiers of functional projections that are immediately above the NP, as schematized in (183).



Thus, Cinque’s approach seems to accurately predict the correct order of prenominal adjectives in Hocak.

3.3.3 Comparing Cinque (2010) to Postnominal Adjectives

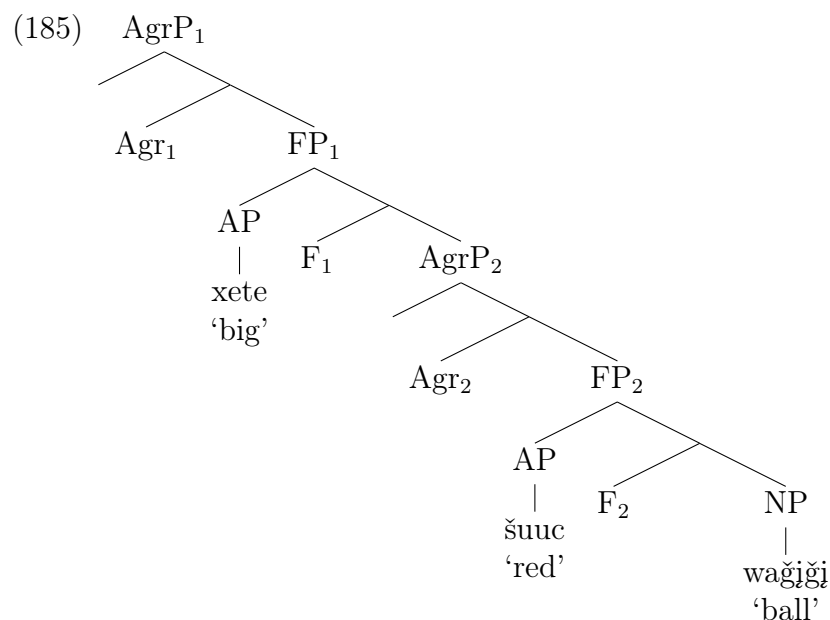
The situation with postnominal adjectives is a bit more complex. Consider (184) (repeated from (143)), where either ordering is possible between two postnominal adjectives. Recall that the difference in order does not affect the interpretation of the adjective.

- (184) a. Bryanga wağjǵi šuuc xetera haja.
 Bryan-ga wağjǵi šuuc xete-ra Ø-haja
 Bryan-PROP ball red big-DEF 3S-see
 ‘Bryan saw the big red ball.’
- b. Bryanga wağjǵi xete šuucra haja.
 Bryan-ga wağjǵi xete šuuc-ra Ø-haja
 Bryan-PROP ball big red-DEF 3S-see
 ‘Bryan saw the big red ball.’

Under Cinque’s approach, these adjectives could have two possible sources: a direct or an indirect modifier position. I first consider how Cinque would account for (184) if these

adjectives are in a direct modification structure, although I will subsequently show that these adjectives cannot be analyzed as direct modifiers in a Cinque-style account. After this, I outline a possible analysis for postnominal adjectives, where they are in (reduced) relative clauses. However, this alternative runs into contradictions: while it could potentially account for the syntax of postnominal adjectives, it faces more serious problems with respect to their semantics.

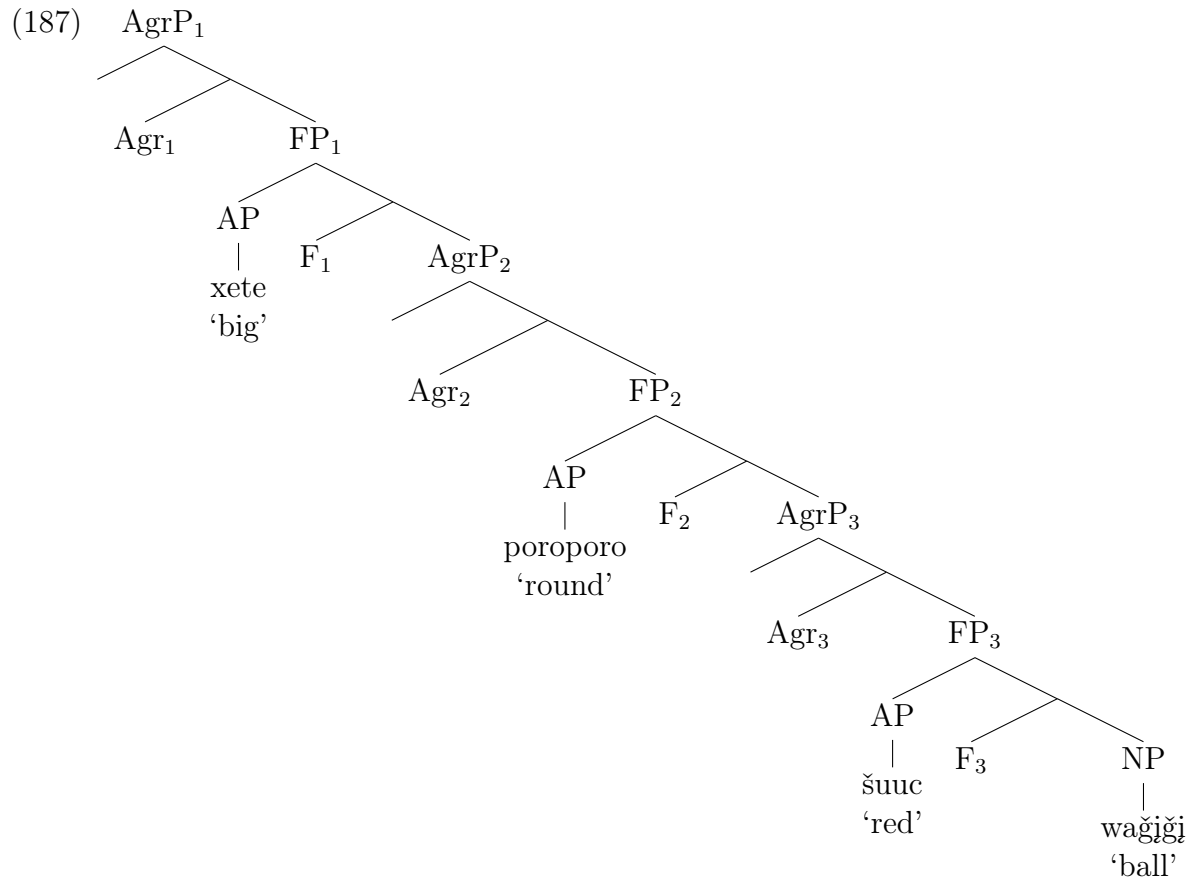
If *xete* ‘big’ and *šuuc* ‘red’ in (184) are in direct modification, then each adjective is merged in the specifier of an FP, as depicted in (185). The two possible orders of (184) arise in two ways. In the first option, the NP moves to Spec,AgrP₂, and then Spec,AgrP₂ pied-pipes to Spec,AgrP₁. This movement operation yields the order in (184a). In the second option, the NP could move to the Spec,AgrP₂ then to Spec,AgrP₁ in a type of specifier-to-specifier movement. This movement produces the order in (184b). Cinque (2005) uses both movement operations, but it is not clear whether they are both available under Cinque (2010). Moreover, the use of pied-piping to derive the order in (184a) would predict that the order in (184b) should not exist.



As noted above, Cinque (2010) does not offer a clear principle as to what motivates NP movement within the DP. If we follow Cinque's (2005) suggestion, then the NP raises since it needs to convert the AgrP into a nominal(-like) phrase. When AgrP moves, it is because an attract closest condition is invoked.

However, the possible orders of three postnominal adjectives suggest that postnominal adjectives could not be analyzed as adjectives in direct modification under Cinque's approach. Consider (147) repeated in (186). Recall that any order is possible with three postnominal adjectives. A Cinque-style structure depicting these adjectives in a direct modification structure is shown in (187). The base-generated order in (187) comes from Cinque's (1994) hierarchy, as shown in (175a) above.

- (186) a. Meredithga waǵǵǵi šuuc poroporo xetera ruwǵ.
 Meredith-ga waǵǵǵi šuuc poroporo xete-ra Ø-ruwǵ
 Meredith-PROP ball red round big-DEF 3S-buy
 'Meredith bought the big round red ball.' ('red' > 'round' > 'big')
- b. Meredithga waǵǵǵi poroporo šuuc xetera ruwǵ. ('round' > 'red' > 'big')
- c. Meredithga waǵǵǵi šuuc xete poroporora ruwǵ. ('red' > 'big' > 'round')
- d. Meredithga waǵǵǵi xete poroporo šuucra ruwǵ. ('big' > 'round' > 'red')
- e. Meredithga waǵǵǵi poroporo xete šuucra ruwǵ. ('round' > 'big' > 'red')
- f. Meredithga waǵǵǵi xete šuuc poroporora ruwǵ. ('big' > 'red' > 'round')



Let us consider how the structure in (187) plus the two types of movement can derive the adjective orders in (186). Cinque (2010) does not explicitly say whether both pied-piping and specifier-to-specifier movements are possible. If one were to assume that both phrasal movements were available (cf. Cinque 2005), only four of the six orders should be possible. Two orders should not be derivable.

The order N > 'red' > 'round' > 'big' in (186a) is derived when the NP moves to Spec,AgrP₃, and then AgrP₃ pied-pipes to Spec,AgrP₂, followed by pied-piping of AgrP₂ to Spec,AgrP₁.

The order N > 'round' > 'red' > 'big' in (186b) is derived if the NP raises to Spec,AgrP₃ then to Spec,AgrP₂, followed by pied-piping of AgrP₂ to Spec,AgrP₁.

The order N > 'red' > 'big' > 'round' in (186c) is derived by the NP moving to Spec,AgrP₃, followed by AgrP₃ moving to Spec,AgrP₂ then to Spec,AgrP₁.

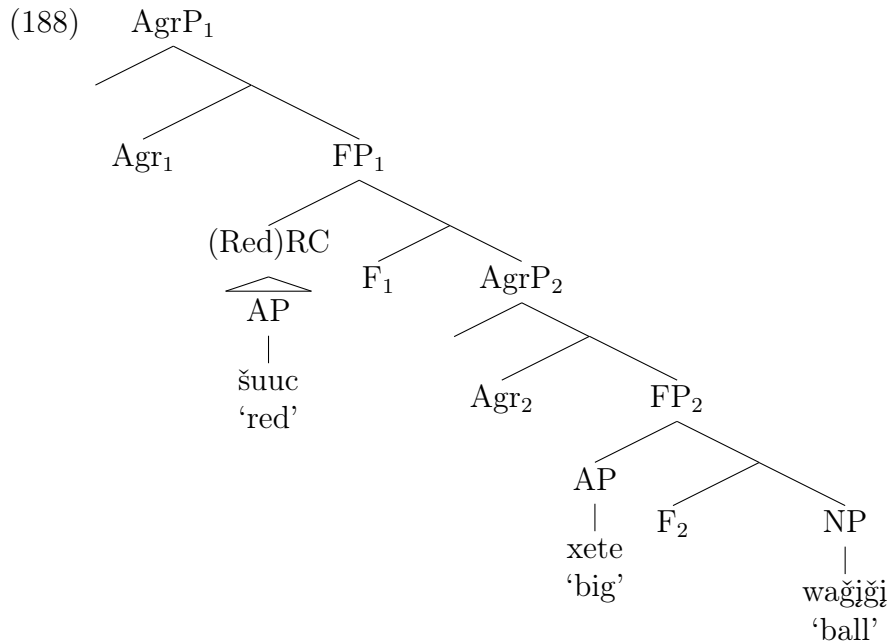
The order $N > \text{'big'} > \text{'round'} > \text{'red'}$ in (186d) has a derivation with the NP moving from specifier to specifier of each AgrP, terminating its movement at Spec,AgrP₁. Alternatively, the NP could move directly to Spec,AgrP₁.

The order $N > \text{'round'} > \text{'big'} > \text{'red'}$ in (186e) cannot be derived through this account. The NP is still to the far left, and the modifiers are on the right, but the structure does not allow for 'round' to move independently. However, this order is grammatical.

The order $N > \text{'big'} > \text{'red'} > \text{'round'}$ in (186f) also cannot be derived through Cinque's account. The NP could move to Spec,AgrP₃, and then AgrP₃ could pied-pipe to Spec,AgrP₂. At this point, the NP would have to move from Spec,AgrP₃ to Spec,AgrP₁ to derive this order. However, such a movement is generally blocked as specifiers are considered islands. That is, if specifiers are islands, (186f) cannot be derived.²²

Two of the possible six orders should not be derivable under an account where adjectives are merged in specifiers of functional projections. This indicates that Cinque would not analyze postnominal adjectives in Hocak as direct modification. An alternative to direct modification might be to propose that some postnominal adjectives are in indirect modification (i.e., in (reduced) relative clauses) while others are in direct modification. Cinque (2010) considers this an option in his theory. In a case like (184a), *xete* 'big' could originate in a direct modification structure, while *šuuç* 'red' could merge in an indirect modification structure, as represented in (188).

²²Cinque (2010) never explicitly makes use of movement out of specifiers. However, see Cinque 2005:323 for discussion on this type of movement.



The analysis in (188) would account for the fact that there are variable orderings with two or even three adjectives. At least one of the adjectives is in an indirect modification structure where strict order is not imposed. There is one main challenge to this approach, which concerns the semantics of postnominal adjectives. If adjectives in Hocak were in reduced relative clauses, then Cinque would predict that they must have s-level and intersective readings. Cinque relies on the different interpretations of ‘visible’ and ‘good’ (among other adjectives) to distinguish between modifiers in direct and indirect modification. Cinque further predicts that indirect modification is farther from the noun than direct modification; for example, s-level and intersective modifiers should be consistently outside of i-level and non-intersective modifiers (see (177)–(179) above). However, I show that these ordering restrictions are not borne out in Hocak.

As noted above, the adjective *cqqt’i* ‘visible’ can receive either an i-level or s-level interpretation when it merges in a postnominal position. Similarly, we saw that *pji* ‘good’ can have either a non-intersective reading or the intersective reading. The example in (189) below shows that *cqqt’i* ‘visible’ can receive either an i-level or s-level interpretation. Thus,

cqqt'i ‘visible’ can receive an i-level (direct modification) reading, which indicates that *cqqt'i* can be an AP in a direct modification structure. By comparison, the s-level reading of *cqqt'i* entails a relative clause structure under Cinque.²³ There are also no ordering restrictions with respect to either the i- or s-level reading: *cqqt'i* ‘visible’ can appear on either side of the postnominal adjective *šuuc* ‘red’.²⁴

- (189) a. Wiiraguşge **cqat'i** šuucra Kikiga wa'unaşşana.
 wiiraguşge cqat'i šuuc-ra Kiki-ga Ø-wa'u-naş-şana
 star visible red-DEF Kiki-PROP 3S-AUX-POS.NEUT-DECL
 ‘The red visible star is Kiki.’ (‘visible’ > ‘red’)
 (i) = ‘Kiki is an inherently visible star.’ (i-level)
 (ii) = ‘Kiki is a star that is visible on a particular occasion.’ (s-level)
- b. Wiiraguşge šuuc **cqat'ira** Kikiga wa'unaşşana.
 wiiraguşge šuuc cqat'i-ra Kiki-ga Ø-wa'u-naş-şana
 star red visible-DEF Kiki-PROP 3S-AUX-POS.NEUT-DECL
 ‘The red visible star is Kiki.’ (‘red’ > ‘visible’)
 (i) = ‘Kiki is an inherently visible star.’ (i-level)
 (ii) = ‘Kiki is a star that is visible on a particular occasion.’ (s-level)

A second semantic difference comes from non-intersective versus intersective adjectives. In (190), *pji* ‘good’ can have either the non-intersective reading ‘good as a teacher’ and the intersective reading ‘good as a person’. Since *pji* ‘good’ can have a non-intersective (direct modification) interpretation, the modifier can be an AP. According to Cinque, the intersective reading of ‘good’ would indicate a relative clause structure. Like with *cqqt'i*

²³In section 3.4, I will propose that direct and indirect modification readings in Hocak are not necessarily derived by two sources (i.e., direct versus indirect modification). I claim that the interpretation of the adjective depends on whether it is in the scope of a generic operator (Kim 2014b).

²⁴The word order of postnominal adjectives in Hocak does not affect their interpretation. In English, adjective ordering can change the adjective’s interpretation. I suggest that the difference between Hocak and English has to do with whether a language fully uses both sources of adjectival modification (i.e., direct versus indirect). The data suggest that Hocak prefers a direct modification structure for both interpretations of an adjective, whereas English employs direct modification for one interpretation and indirect modification for the other.

‘visible’ in (189), *pji* can have both readings on either side of another adjective, such as *ceek* ‘new’.²⁵

- (190) a. Sarahga wagigʊs cEEK **pji**hiʒa hokit’e.
 Sarah-ga wagigʊs cEEK pji-hiʒa Ø-hokit’e
 Sarah-PROP teacher new good-INDEF 3S-speak.to
 ‘Sarah spoke to a good new teacher.’ (‘new’ > ‘good’)
 (i) = ‘good as a teacher’ (non-intersective)
 (ii) = ‘good as a person’ (intersective)
- b. Sarahga wagigʊs **pji** cEEKhiʒa hokit’e.
 Sarah-ga wagigʊs pji cEEK-hiʒa Ø-hokit’e
 Sarah-PROP teacher good new-INDEF 3S-speak.to
 ‘Sarah spoke to a good new teacher.’ (‘good’ > ‘new’)
 (i) = ‘good as a teacher’ (non-intersective)
 (ii) = ‘good as a person’ (intersective)

Moreover, recall that *wokoreesge* ‘amazing’ can only have a non-intersective reading in a postnominal position (see (154) above). This suggests that *wokoreesge* is in direct modification, and thus is unambiguously an AP. Since *wokoreesge* cannot have an intersective reading in postnominal position, it is not in a relative clause structure (Cinque 2010). (191) illustrates that *wokoreesge* ‘amazing’ with a non-intersective reading and *pji* ‘good’ with an intersective reading retain their respective interpretations regardless of their position with respect to each other.

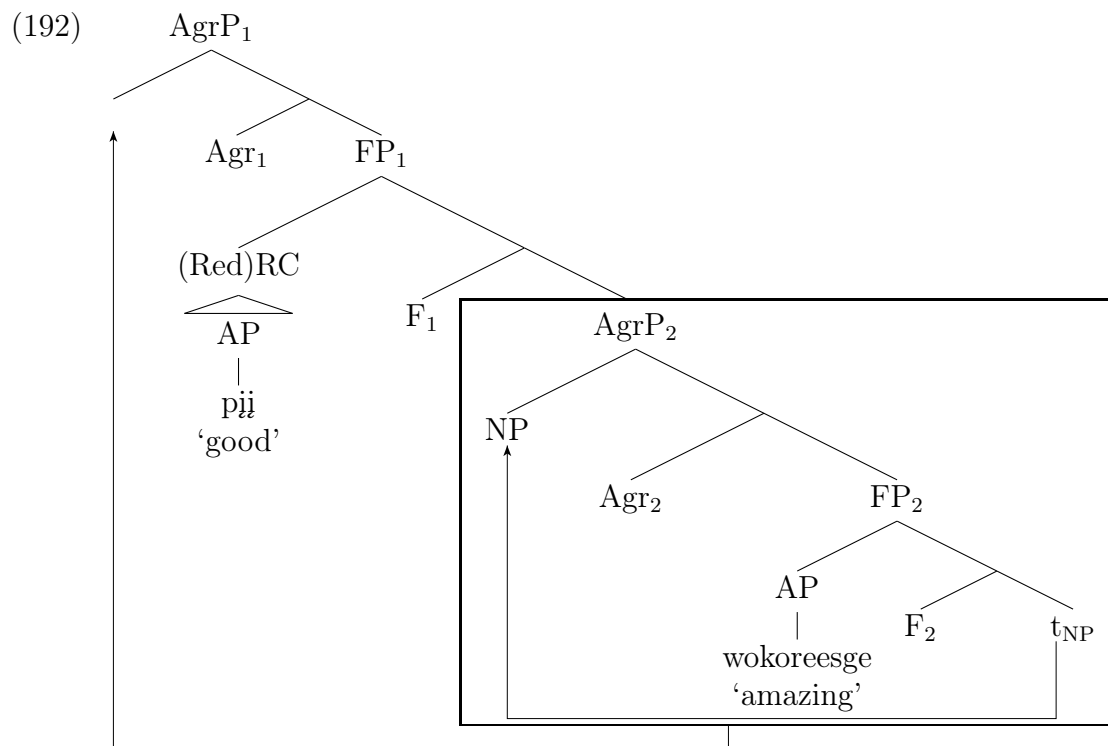
- (191) a. Bryanga wagigʊs wokoreesge pijra haja.
 Bryan-ga wagigʊs wokoreesge pji-ra Ø-haja
 Bryan-PROP teacher amazing good-DEF 3S-see
 ‘Bryan saw the good amazing teacher.’ (‘amazing’ > ‘good’)

²⁵Note that (190a) can also mean ‘good as a teacher’. My speaker also informs me that (190b) can marginally have this reading, but strongly prefers to use (190a) to yield this interpretation.

- b. Bryanga wagigʊs pij wokoreesgera haja.
 Bryan-ga wagigʊs pij wokoreesge-ra Ø-haja
 Bryan-PROP teacher good amazing-DEF 3S-see
 ‘Bryan saw the good amazing teacher.’ (‘good’ > ‘amazing’)

We have seen that the position of postnominal adjectives does not affect their interpretation. Example (189) above shows that *cqqt’i* ‘visible’ with an i-level reading can be farther from the noun than another modifier. In (190), *pij* ‘good’ with a non-intersective interpretation can be farther from the noun than another adjective. A similar example to (190) was shown in (191) with *pij* ‘good’ and *wokoreesge* ‘amazing’.

Under Cinque’s approach, in an example like (191) with *pij* ‘good’ and *wokoreesge* ‘amazing’, *wokoreesge* with a non-intersective reading would merge low as an AP, and *pij* with an intersective interpretation would merge as a (reduced) relative clause in the specifier of a projection above the direct modification domain. Example (191) is schematized in (192). To derive the order in (191a), Cinque would predict that the NP moves to Spec,AgrP₂, and then AgrP₂ pied-pipes to Spec,AgrP₁, as shown in (192). Following the suggestion in Cinque 2005, AgrP₂ would pied-pipe because of an attract closest condition.



The only way to obtain the other order of *pii* ‘good’ and *wokoreesge* ‘amazing’ in (191b) would be to move the NP in a specifier-to-specifier fashion; that is, the NP would move to AgrP₂ then to AgrP₁.²⁶ However, Cinque would not predict this to be possible. If attract closest is invoked to provide the correct order in (191a), then we would not expect specifier-to-specifier movement to be possible. We would expect AgrP₂ to be attracted every time due to attract closest. It is unclear how Cinque would account for both of these orders in a principled way. This is highlighted by the fact that there is only one order in Italian and English. Recall that Cinque observes that both readings of *buono* ‘good’ in Italian can occur, but the order of adjectives is restricted. As shown in (193), the rightmost adjective must

²⁶The same analysis could be applied to (189) with *cqqt’i* ‘visible’ and *šuuč* ‘red’ and (190) with *pii* ‘good’ and *ceek* ‘new’. In these cases, *cqqt’i* ‘visible’ with an i-level interpretation and *pii* ‘good’ with a non-intersective reading would merge low as APs. In contrast, *cqqt’i* ‘visible’ with an s-level reading and *pii* ‘good’ with an intersective interpretation would be generated high in the structure and in relative clauses. Other adjectives, such as *šuuč* ‘red’ and *ceek* ‘new’, can either merge as an AP in a direct modification structure or as a (reduced) relative clause in the specifier of a projection above the direct modification domain. Either way, *šuuč* ‘red’ and *ceek* ‘new’ consistently merge in a higher position than other direct modification adjectives like *cqqt’i* ‘visible’ and *pii* ‘good’.

have the intersective reading.

- (193) a. un attaccante buono BUONO
 a forward good good
- b. *un attaccante BUONO buono
 a forward good good
 ‘a good-hearted good forward.’ (Cinque 2010:21)

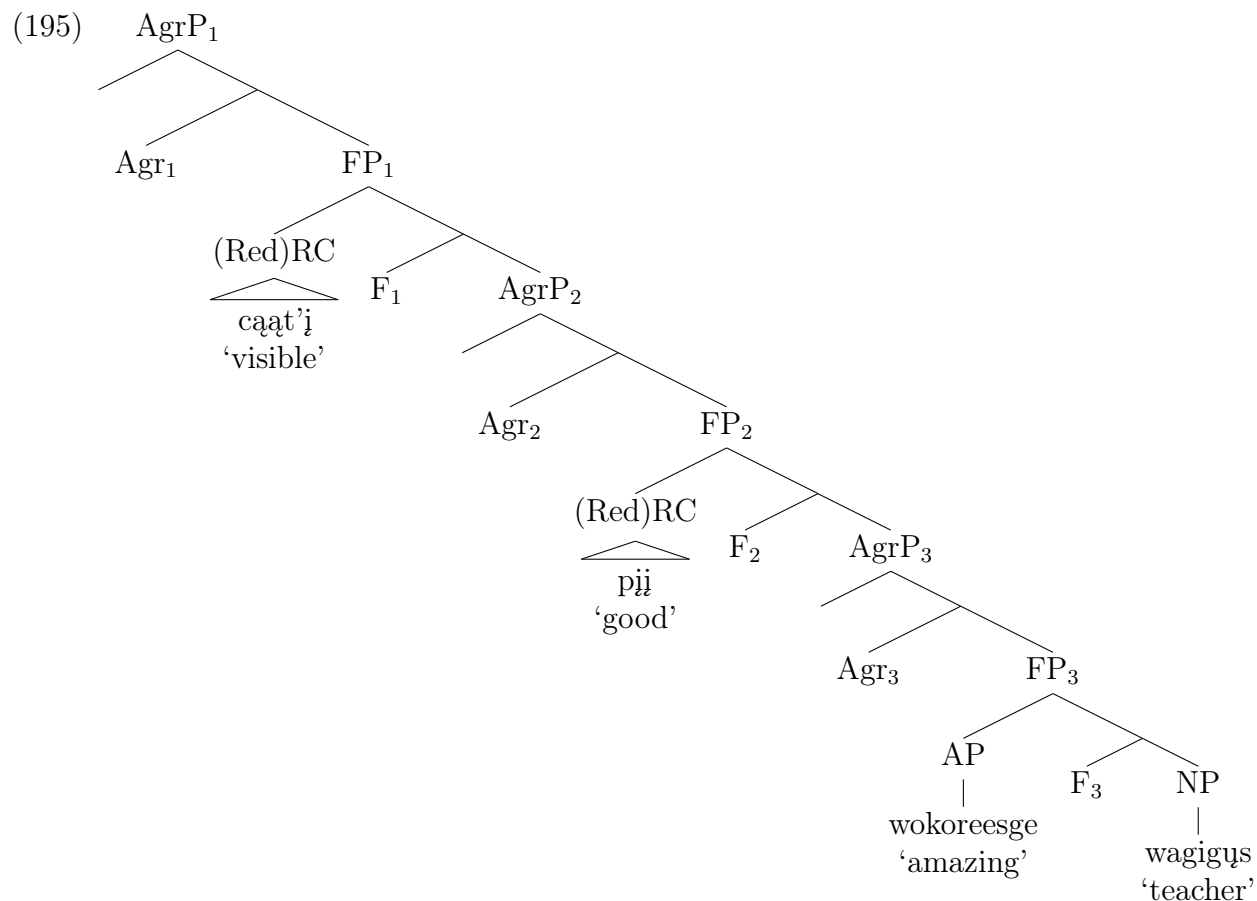
Both the s-/i-level and intersective/non-intersective readings are possible in postnominal position in Italian and Hocak. While intersective adjectives need to be farther away from the noun in Italian, Hocak shows that the ordering of *pji* ‘good’ with an intersective reading and *wokoreesge* ‘amazing’ with a non-intersective one is free. A similar pattern is illustrated by the facts concerning *cqqt’i* ‘visible’ and *pji* ‘good’: they can have either interpretation in either position. If both options were always available cross-linguistically, then (193b) would also be grammatical, and crucially Cinque would not have a clear way to account for the restriction in Italian. In fact, Cinque (2010:72) acknowledges that it is unclear how such an option is blocked in Italian. While the Hocak orders could be derived by using specifier-to-specifier movement or pied-piping, the restricted Italian order can only be derived by a pied-piping movement. It is possible to state that the head NP can only undergo pied-piping in Italian, and it can undergo either specifier-to-specifier movement or pied-piping in Hocak. However, a number of assumptions would need to be made with respect to what motivates each movement. These assumptions can derive the ordering facts, but they do not necessarily explain them. Thus, Cinque’s account is unable to explain why Italian could only use one of the movement strategies, whereas Hocak could use both.

Additionally, it is possible for an adjective with a direct modification reading to intervene between two adjectives with indirect modification interpretations. In (194), the three adjectives *wokoreesge* ‘amazing’, *pji* ‘good’, and *cqqt’i* ‘visible’ are stacked in a postnominal position. *Pji* ‘good’ and *cqqt’i* ‘visible’ have indirect modification readings, and *wokoreesge*

‘amazing’ has a direct modification reading.

- (194) a. Meredithga wagigʏs wokoreesge pij caatira haja.
 Meredith-ga wagigʏs wokoreesge pij caatɪ-ra Ø-haja
 Meredith-PROP teacher amazing good visible-DEF 3S-see
 ‘Meredith saw the good visible amazing teacher.’ (‘amazing’ > ‘good’ > ‘visible’)
- b. Meredithga wagigʏs pij wokoreesge caatira haja.
 Meredith-ga wagigʏs pij wokoreesge caatɪ-ra Ø-haja
 Meredith-PROP teacher good amazing visible-DEF 3S-see
 ‘Meredith saw the good visible amazing teacher.’ (‘good’ > ‘amazing’ > ‘visible’)

In (194a), *wokoreesge* is to the left of both *caatɪ*’*j* and *pij*, which is what Cinque would predict if the NP undergoes movement to a position above *wokoreesge*, and then pied-pipes with *wokoreesge* above the relative clause structures. In contrast, (194b) shows that *wokoreesge* is sandwiched between *caatɪ*’*j* and *pij*. The order in (194a) could be derived if the NP moves to Spec,AgrP₃, and then pied-pipes to Spec,AgrP₂, followed by AgrP₂ pied-piping to Spec,AgrP₁; see the structure in (195) below. The order in (194b) raises an immediate issue for Cinque (2010): under his approach, adjectives with direct modification readings are grouped together apart from those with indirect modification interpretations. To derive the order in (194b), the NP would have to undergo a mix of specifier-to-specifier and pied-piping movement. The NP would first move to Spec,AgrP₂ (perhaps first moving to Spec,AgrP₃), and then AgrP₂ would pied-pipe to Spec,AgrP₁. This would give the order N > direct modification adjective > indirect modification adjective > indirect modification adjective. However, if attract closest triggers the NP to move in a roll-up fashion to derive the order in (194a), Cinque would not predict that the movement pattern required to derive the order in (194b) would be possible. I therefore suggest that these data are especially challenging for Cinque’s approach.



Thus, we have seen that the position of postnominal adjectives does not affect their interpretation. These findings are not consistent with the analysis of adjective orders in Cinque: direct modification adjectives are closer to the head noun than indirect modification adjectives. However, Cinque's proposal is designed to have adjectives in one universal order, and other orders of adjectives arise through different types of phrasal movements. It is difficult to falsify this approach since the different orders are derived by movements with triggers that are unclear at each stage of the derivation. I therefore cannot outright conclude that the data above from Hocak are overwhelmingly problematic. They can only add to the challenges that must be overcome by a Cinque-style analysis. I suggest that any "order reversal" of adjectives in Hocak should not be accounted for under an approach where some modifiers are in reduced relative clauses and some are APs.

Before moving on to arguments against analyzing postnominal adjectives as relative clauses, recall that Cinque (2010) examines the order of the two instances of ‘visible’ and ‘good’ in English and Italian. He shows that they are strictly ordered: ‘visible’ with an i-level reading is closer to the head noun than ‘visible’ with an s-level reading; and ‘good’ with a non-intersective interpretation occurs closer to the noun than ‘good’ with an intersective interpretation (see (176)–(179)). When the two instances of *cqat’i* ‘visible’ in Hocak modify the same noun phrase, the result is ungrammatical, as illustrated in (196a). In order for (196a) to be grammatical, the leftmost *cqat’i* must also be marked by *-ra*, as shown in (196b).

- (196) a. *Cecilga wiiragušge *cqat’i* *cqat’ira* hiperessana.
 Cecil-ga wiiragušge *cqat’i* *cqat’i-ra* Ø-hiperes-šana
 Cecil-PROP star visible visible-DEF 3S-know-DECL
 Intended: ‘Cecil knows the visible visible star.’
- b. Cecilga wiiragušge *cqat’ira* *cqat’ira* hiperessana.
 Cecil-ga wiiragušge *cqat’i-ra* *cqat’i-ra* Ø-hiperes-šana
 Cecil-PROP star visible-DEF visible-COMP 3S-know-DECL
 ‘Cecil knows the visible visible star.’

The adjective *pji* ‘good’ exhibits a similar restriction to *cqat’i* in (196a): the two instances of *pji* cannot simultaneously modify the same noun. This is illustrated in (197a). However, the equivalent of (196b) is also ungrammatical, as shown in (197b). In the grammatical version of (197), the rightmost *pji* attributively modifies a predicative noun (*wqaksik* ‘human’), as suggested by the presence of the copula *here* ‘be’; see (198).

- (197) a. *Matejaga wagax haja *pji* *pjiira* hikiipa.
 Mateja-ga wagax haja *pji* *pji-ra* Ø-hikiipa
 Mateja-PROP student good good-DEF 3S-meet
 Intended: ‘Mateja met the good good student.’
- b. *Matejaga wagax haja *pjiira* *pjiira* hikiipa.
 Mateja-ga wagax haja *pji-ra* *pji-ra* Ø-hikiipa
 Mateja-PROP student good-DEF good-COMP 3S-meet
 Intended: ‘Mateja met the good good student.’

- (198) Matejaga wagax haja pijra waąksik pijhiža herera hikipa.
 Mateja-ga wagax haja pij-ra waąksik pij-hiža Ø-here-ra Ø-hikipa
 Mateja-PROP student good-DEF human good-INDEF 3S-be-COMP 3S-meet
 ‘Mateja met the good good student.’
 (lit. ‘Mateja met the good student that is a good(-hearted) person.’)

What remains to be understood is why *pij* ‘good’ behaves differently than *cqqt’i* ‘visible’. Under Cinque’s (2010) approach, in (196b) the leftmost *-ra* could mark the edge of the direct modification domain,²⁷ and the second instance of *-ra* could signal a relative clause structure (perhaps a D head; cf. Johnson and Rosen 2014a). Cinque could argue that the inability of the two interpretations of *cqqt’i* ‘visible’ to modify a single noun indicates that there are two sources of adjectival modification: direct and indirect modification. In contrast, the adjective *pij* is more restrictive in that it selects an attributive position. *Pij* ‘good’ can merge as the predicate in relative clauses; however, when both interpretations of *pij* co-occur, they cannot both attributively modify the same noun (as in (197a)) or have one *pij* attributively modify the noun and have the other *pij* in a relative clause (as in (197b)). Instead, each interpretation of *pij* has to attributively modify a different noun: in (198), one *pij* modifies *wagax haja* ‘student’, and the second *pij* modifies *waąksik* ‘human’. While I do not suggest that these data are necessarily problematic for Cinque’s (2010) theory, it is unclear how his theory would predict that there would be a difference between ‘visible’ and ‘good’. Since the examples in (196)–(198) that contain two instances of ‘visible’ or ‘good’ are poorly understood, I will not offer an alternative analysis of these examples in section 3.4.

I now present a few reasons against the possibility of analyzing postnominal adjectives as relative clauses. First, I show that postnominal adjectives do not have the same agreement requirements as verbal relative clauses. This suggests that postnominal adjectives are APs. Second, I demonstrate that postnominal adjectives form idiomatic expressions, which is

²⁷Cinque labels the edge of this domain dP.

indicative of a direct modification structure.

First, let us consider a diagnostic from agreement. Adjectives in predicative environments take the same agreement morphology as verbs. Example (199) shows that the verb *šiibre* ‘fall’ and the adjective *ceek* ‘new’ both take *-ire* to index a 3rd person plural subject.

- (199) a. *šiibraire*
 šiibre-ire
 fall-3PL.S
 ‘They fell.’
- b. *ceekire*
 ceek-ire
 new-3PL.S
 ‘They are new.’

In chapter 2 (section 2.2.2), I showed that when the head NP is the subject of the relative clause, then the verb inside the relative clause must agree with it, as shown in (200). Since the referent *hinuk* ‘woman’ is plural, the verb *haji* ‘arrive’ in the relative clause must take plural subject agreement (*-ire*) in (200a). If the verb inside the relative clause does not agree with the plural head *hinuk* ‘woman’, the sentence is ungrammatical in (200b). ((200) is repeated from chapter 2, section 2.2.2.)²⁸

- (200) a. Bryanga hinuk hajiirera wookit’e.
 Bryan-ga hinuk haji-**ire**-ra wa-Ø-hokit’e
 Bryan-PROP woman arrive-3PL.S-COMP 3PL.O-3S-speak.to
 ‘Bryan spoke to the women that arrived’
- b. *Bryanga hinuk hajira wookit’e.
 Bryan-ga hinuk Ø-haji-ra wa-Ø-hokit’e.
 Bryan-PROP woman 3S-arrive-COMP 3PL.O-3S-speak.to
 Intended: ‘Bryan spoke to the women that arrived’

²⁸Recall that the element *-ra* can be used as both a definite article and as a complementizer. Further recall that I follow Johnson and Rosen (2014a) and assume that CPs in Hocak are dominated by a DP layer.

As shown in (201), attributive adjectives do not bear the 3rd person plural morpheme *-ire*; compare (201) to (200). ((201) is also repeated from chapter 2, section 2.2.2.)

- (201) a. Cecilga wijuk seepra waaja.
 Cecil-ga wijuk seep-ra wa-Ø-haja
 Cecil-PROP cat black-DEF 3PL.O-3S-see
 ‘Cecil saw the black cats.’
- b. Bryanga wiišgac xetera waruwj.
 Bryan-ga wiišgac xete-ra wa-Ø-ruwj
 Bryan-PROP toy big-DEF 3PL.O-3S-buy
 ‘Bryan bought the big toys.’

The same pattern holds for the adjectives *cqqt’i* ‘visible’ and *pji* ‘good’, as evidenced by (202a,b). In (202), *cqqt’i* ‘visible’ can have either an i- or s-level reading, and *pji* ‘good’ receives either a non-intersective or intersective interpretation.

- (202) a. Matejaga wagax haja pjiira wookit’e.
 Mateja-ga wagax haja pji-ra wa-Ø-hokit’e
 Mateja-PROP student good-DEF 3PL.O-3S-talk.to
 ‘Mateja talked to the good students.’
- b. Cecilga wiiragušge caatira waaja.
 Cecil-ga wiiragušge caati-ra wa-Ø-haja
 Cecil-PROP star visible-DEF 3PL.O-3S-see
 ‘Cecil saw the visible stars.’

Under Cinque’s theory, since both verbs and adjectives form predicates in indirect modification structures, verbal and adjectival agreement in relative clauses should be parallel. Verbal predicates in (199a) and adjectival ones in (199b) both take plural agreement. However, (200) demonstrates that verbs in relative clauses must overtly agree with their head when they are plural. If adjectives were in relative clauses, it is not clear how Cinque’s theory could rule out adjectives in relative clauses from agreeing with their head, while requiring verbs in relative clauses to agree. In chapter 2, I explained that this difference was due to

the hypothesis that relative clauses have a local (c-commanding) T to license agreement. I followed Chomsky (2000, 2001) and argued that the subject agrees with T of the relative clause, thus triggering agreement. In contrast, if adjectives are APs adjoined to NP, then there is no local (c-commanding) T. The adjective is contained inside the maximal projection of NP, and thus no local c-commanding relationship between the AP and T can occur.

This conclusion is supported by the unavailability of time adverbs with postnominal adjectives. Many researchers have argued that time adverbs are associated with the VP-domain. Demirdache and Uribe-Etxebarria (2004, 2007) claim that bare time adverbs, such as *Monday* and *yesterday*, adjoin to AspP/VP, whereas Cinque (1999, 2004) and Ilkhanipour (2014) argue that such time adverbs are linked with the TP-domain: either they are in Spec,TP or they adjoin to TP. The verb *haji* ‘arrive’ in the relative clause in (203) can be modified by the time adverb *xjanqre* ‘yesterday’. In (203a), the head of the relative clause *hinɣk* ‘woman’ is to the left of *xjanqre* ‘yesterday’, and *xjanqre* can only modify the embedded verb *haji* ‘arrive’. (203b) shows that *hinɣk* ‘woman’ can also be to the right of *xjanqre* ‘yesterday’. In the case of (203b), *xjanqre* can modify either the verb in the relative clause (*haji* ‘arrive’) or the verb in the matrix clause (*hokit’e* ‘speak to’).

- (203) a. Bryanga hinɣk xjanqre hajiirera wookit’e.
 Bryan-ga hinɣk xjanqre haji-ire-ra wa-Ø-hokit’e
 Bryan-PROP woman yesterday arrive-3PL.S-COMP 3PL.O-3S-speak.to
 ‘Bryan spoke to the women that arrived yesterday.’
- b. Bryanga xjanqre hinɣk hajiirera wookit’e.
 Bryan-ga xjanqre hinɣk haji-ire-ra wa-Ø-hokit’e
 Bryan-PROP yesterday woman arrive-3PL.S-COMP 3PL.O-3S-speak.to
 ‘Bryan spoke to the women that arrived yesterday.’

In contrast, postnominal adjectives cannot be modified by time adverbs. As in (204)–(205), the adjectives *ceek* ‘new’ and *pji* ‘good’ cannot take the time adverb *xjanqre* ‘yesterday’. The (a) examples illustrate that *xjanqre* is between the noun and the adjective, and

these sentences are ungrammatical. In the (b) examples, the adverb is to the left of the object NP. In such cases, *xjanqre* can only modify the matrix verb: the buying and seeing events happened yesterday.²⁹

- (204) a. *Cecilga wiišgac xjanqre ceekra waruwj.
 Cecil-ga wiišgac xjanqre ceek-ra wa-Ø-ruwj
 Cecil-PROP toy yesterday new-DEF 3PL.O-3S-buy
 Intended: ‘Cecil bought the new toys yesterday.’
- b. Cecilga xjanqre wiišgac ceekra waruwj.
 Cecil-ga xjanqre wiišgac ceek-ra wa-Ø-ruwj
 Cecil-PROP yesterday toy new-DEF 3PL.O-3S-buy
 ‘Cecil bought the new toys yesterday.’
- (205) a. *Meredithga nijkjak xjanqre pijra waruwj.
 Meredith-ga nijkjak xjanqre pij-ra wa-Ø-ruwj
 Meredith-PROP child yesterday good-DEF 3PL.O-3S-buy
 Intended: ‘Meredith saw the good children yesterday.’
- b. Meredithga xjanqre nijkjak pijra waruwj.
 Meredith-ga xjanqre nijkjak pij-ra wa-Ø-ruwj
 Meredith-PROP yesterday child good-DEF 3PL.O-3S-buy
 ‘Meredith saw the good children yesterday.’

Following Cinque (1999, 2004), Demirdache and Uribe-Etxebarria (2004, 2007), and Ilkhanipour (2014), time adverbs are generated in the verbal domain. Since *xjanqre* ‘yesterday’ cannot appear with the postnominal adjectives in (204a) and (205a), this suggests that these adjectives are not associated with verbal structure (either AspP/VP or TP). I claim that they are bare APs.

It should be noted that when postnominal adjectives agree with their subject, the adverb *xjanqre* ‘yesterday’ can appear to either the right or the left of the head of the relative clause; see (206) and (207). These examples mirror those with verbs, as shown above in (203). The time adverb can modify the matrix or the embedded verb. Following the discussion in chapter

²⁹In (205b), *pij* ‘good’ can have either an i- or s-level reading.

2 (section 2.2.2), I propose that the adjectives in (206) and (207) are in relative clauses and thus have a VP or TP that can license the time adverb *xjanare* ‘yesterday’.

- (206) a. Cecilga wiišgac xjanare ceeirekra waruwj.
 Cecil-ga wiišgac xjanare ceek-ire-ra wa-Ø-ruwj
 Cecil-PROP toy yesterday new-3PL.S-COMP 3PL.O-3S-buy
 ‘Cecil bought the toys that were new yesterday.’
- b. Cecilga xjanare wiišgac ceekirera waruwj.
 Cecil-ga xjanare wiišgac ceek-ire-ra wa-Ø-ruwj
 Cecil-PROP yesterday toy new-3PL.S-COMP 3PL.O-3S-buy
 ‘Cecil bought the toys that were new yesterday.’
- (207) a. Meredithga nijkjak xjanare pijirera waruwj.
 Meredith-ga nijkjak xjanare pij-ire-ra wa-Ø-ruwj
 Meredith-PROP child yesterday good-3PL.S-COMP 3PL.O-3S-buy
 ‘Meredith saw the children that were good yesterday.’
- b. Meredithga xjanare nijkjak pijirera waruwj.
 Meredith-ga xjanare nijkjak pij-ire-ra wa-Ø-ruwj
 Meredith-PROP yesterday child good-3PL.S-COMP 3PL.O-3S-buy
 ‘Meredith saw the children that were good yesterday.’

Another issue that needs mentioning is the fact that some postnominal adjectives in Hocak can receive idiomatic interpretations. I showed above that the combination of *šyuk* ‘dog’ and *xete* ‘big’ as in *šyuk xete* can either mean ‘big dog’ or ‘horse’ (as repeated in (208) from (173)). Under Cinque’s account, all idiomatic adjectives are only possible with a direct modification AP. Thus, if postnominal adjectives can have idiomatic readings, then it follows that they are not necessarily in relative clauses.

- (208) a. Hunterga šyuk xete seepira haja.
 Hunter-ga šyuk xete seep-ra Ø-haja
 Hunter-PROP dog big black-DEF 3S-see
 (i) = ‘Hunter saw the black horse.’
 (ii) = ‘Hunter saw the big black dog.’

- b. Hunterga şuyk seep xetera haja.
 Hunter-ga şuyk seep xete-ra Ø-haja
 Hunter-PROP dog black big-DEF 3S-see
 (i) = ‘Hunter saw the big black dog.’
 (ii) ≠ ‘Hunter saw the black horse.’

An argument that (all) postnominal adjectives are in relative clauses because of their free word order cannot be made.³⁰ Postnominal adjectives do not have the same inflectional requirements that matrix predicative adjectives have. Moreover, adjectives with idiomatic readings are only available with direct modification APs.

Finally, let us look at the relative scope between two postnominal adjectives. The adjective *fake* in English exhibits different scopal interpretations depending on its position with respect to other adjectives (cf. Sadler and Arnold 1994). We find similar facts in Hocak in that both readings are possible. However, examples from Hocak show that *woişjake* ‘fake’ can take scope over another adjective, such as *t’EEK* ‘rotten’, regardless of the adjectives’ relative ordering; see (209).

- (209) a. Meredithga ksee woışjake t’EEKhižə ruwɿ.
 Meredith-ga ksee woışjake t’EEK-hižə Ø-ruwɿ
 Meredith-PROP apple fake rotten-INDEF 3S-buy
 (i) = ‘Meredith bought a fake rotten apple.’
 (ii) = ‘Meredith bought a fake apple that was rotten.’
 b. Meredithga ksee t’EEK woışjakehižə ruwɿ.
 Meredith-ga ksee t’EEK woışjake-hižə Ø-ruwɿ
 Meredith-PROP apple rotten fake-INDEF 3S-buy
 (i) = ‘Meredith bought a fake rotten apple.’
 (ii) = ‘Meredith bought a fake apple that was rotten.’

These examples yield two different interpretations: first, when ‘fake’ scopes over ‘rotten’, the rotten status is fake (reading (i)); second, when ‘rotten’ takes scope over ‘fake’, rotten

³⁰Moreover, examples of free word order with postnominal adjectives show that each adjective is not marked by *-ra*, which is otherwise a complementizer in Hocak.

is the asserted property of the ‘fake apple’ (reading (ii)).

Cinque could account for these data as follows. For the first reading of (209a) and (b), both adjectives are merged in direct modification. *Woišjqke* ‘fake’ sits in a higher specifier than *t’eeek* ‘rotten’ and takes scope from this position. In (209a), the NP moves in a specifier-to-specifier fashion to a position above *t’eeek* and then above *woišjqke*. In contrast, the NP in (209b) pied-pipes: it moves above *t’eeek* and then the NP plus *t’eeek* move to a position above *woišjqke*. As for the second interpretation, *t’eeek* ‘rotten’ merges in an indirect modification position, and *woišjqke* ‘fake’ is in direct modification. Since *t’eeek* merges in a higher position, it can take scope over *woišjqke*. The order in (209a) is derived by pied-piping of the noun, while the order in (209b) is obtained by moving the noun in a specifier-to-specifier fashion.³¹

However, *t’eeek* ‘rotten’ does not behave like a modifier in a (reduced) relative clause. Recall that the diagnostic from agreement in (201)–(202) above suggested that postnominal adjectives are APs. It is not clear how Cinque’s approach could account for the differences in agreement requirements between adjectives and verbs. Both adjectives and verbs can merge as reduced relative clauses under Cinque’s account. If adjectives can merge as a reduced relative clause, the question is why verbs in Hocak are blocked from doing this too. Look at (210): this example shows that when the plural object *kšee* ‘apple’ is modified by *t’eeek* ‘rotten’, *t’eeek* does not take 3rd person plural subject agreement (*-ire*).

- (210) Hunterga kšee t’eeekra waaja.
 Hunter-ga kšee t’eeek-ra wa-Ø-haja
 Hunter-PROP apple rotten-DEF 3PL.O-3S-see
 ‘Hunter saw the rotten apples.’

Thus, if *t’eeek* ‘rotten’ is also an AP, as suggested by the lack of agreement in (210), then these data present a similar problem to the one that I presented above. We would need

³¹Note that the order in (209a) should not be possible as it requires specifier-to-specifier movement to be derived. Recall that I argued that this movement operation should be blocked for semantic reasons. Even if one were to appeal to specifier-to-specifier movement, there are still problems with these data (see below).

to address how each order of *t'eeek* 'rotten' and *woišjqake* 'fake' is derived while limiting the movement possibilities in languages like Italian. I present a couple of potential explanations for the data in (209) at the end of section 3.4.

3.3.4 Interim Summary and Discussion

This section has introduced Cinque's (2010) theory of adjective orders. I have examined how Cinque's theory would account for the Hocak facts. His theory straightforwardly explains the restrictions on prenominal adjectives, as they are rigidly ordered. Prenominal adjectives merge in unique specifier positions in a strict hierarchy, where each functional head hosts a single specifier. On the other hand, I have observed that postnominal adjectives have free word order. It does not matter what class the adjective belongs to, they can precede or follow another one with no restrictions. Under Cinque's theory, these ordering facts would rule out a direct modification analysis, and would suggest an indirect modification analysis, which does not impose restrictions on word order.

However, an analysis according to which some or all postnominal adjectives in Hocak are in relative clauses is problematic. In Hocak postnominal adjectives have free ordering. However, they can carry a direct modification reading. This is unexpected under Cinque's account. Moreover, postnominal adjectives also do not have the same agreement requirements as verbs in relative clauses, which is not expected if they are in relative clauses. The conclusion then is that adjectives in Hocak are best treated as APs.

We have seen postnominal adjectives in Hocak do not have any ordering restrictions. This fact poses a problem for one of Cinque's main diagnostics for differentiating between direct and indirect modification. Recall that direct modification adjectives have rigid ordering, whereas indirect modification adjectives largely do not. The Hocak data suggest that free ordering of adjectives is not necessarily indicative of indirect modification. Thus I suggest

that Universal Grammar must allow direct modification adjectives to be freely ordered too, contra Cinque’s theory. Following Cinque, adjectives that are strictly ordered must be in a direct modification structure. From the Hocak data, there are no good reasons to assume that relative clauses should be strictly ordered in direct modification. However, when adjectives do not have a strict ordering, then they could be in either a direct or indirect modification structure.

In the next section I provide an analysis of Hocak adjective ordering, which limits the number of functional projections and suggests that adjective ordering variation listed in the functional lexicon of each language rather than in the phrase structure.

3.4 Feature Stacking: An Analysis of Direct Modification in Hocak

The Hocak data indicate that APs can have free ordering, which is not predicted by Cinque’s account of direct modification. Thus, I have suggested Universal Grammar must allow direct modification adjectives to be freely ordered, too. Adjectives that are strictly ordered must be in a direct modification structure (cf. Cinque 2010). However, when adjectives do not have strict ordering, then they could be in either a direct or indirect modification structure. I assume that DP-internal modification still has two sources: direct and indirect modification.

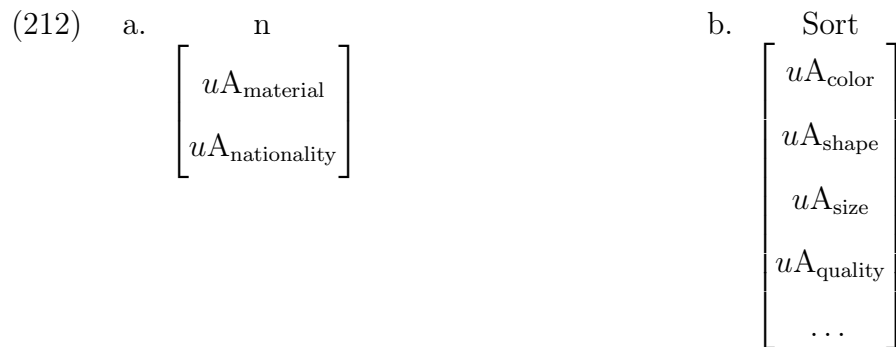
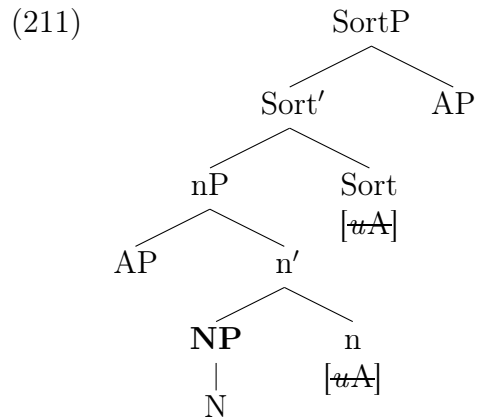
In this section, I outline my theoretical assumptions, and then I present an analysis of adjective ordering in Hocak. In particular, I will assume that multiple features may “stack” on a single head, which allows for multiple specifiers. I argue that through this type of structure, we can largely maintain the generalizations produced by Cinque’s approach, while at the same time we can straightforwardly account for the Hocak data.

3.4.1 Proposal

I propose that the direct modification adjective orderings in Hocak can be accounted for with two functional heads that each contain a stack of features (Georgi and Müller 2010 and Manetta 2010). Adjectives check uninterpretable structure-building features of each head to create multiple specifiers. According to Manetta (2010), the order of features in the stacks on functional heads is assembled in the lexicon (i.e., language-specific principles). Thus, under this approach, the burden of determining language-specific word order is not in the narrow syntax (as in Cinque’s approach), but in the lexicon/functional vocabulary (cf. Borer 1984).

I claim that there are two functional heads that trigger the merger of adjectives. This is schematized in (211), where I tentatively label these heads *n* and *Sort*. I propose that in Hocak, *n* triggers the merger of prenominal APs, and *Sort* licenses postnominal APs. Since the functional lexicon is language-specific, the composition of adjective licensing heads is also language specific. The features on *n* are strictly ordered, whereas the features on *Sort* are not. This produces a rigid ordering for prenominal adjectives, but a free order of postnominal adjectives. Each feature stack is shown in (212).³²

³²At this point, it is unclear whether there is a principled reason why *Sort* has an unordered stack of features while *n* has an ordered one in Hocak. I leave this an open question for future research.



I use SortP and nP differently than the previous literature has used them. Svenonius (2008) claims that gradable adjectives merge in Spec,SortP, and intersective adjectives merge in Spec,nP. Similarly, Kim (2014b) proposes that SortP licenses gradable adjectives; however, n triggers the merger of thematic adjectives. While I have used the same labels SortP and nP, I do not follow these authors with respect to the properties that are associated with each head. In particular, I do not adopt the claim that Sort licenses gradable adjectives. The data from Hocak show that ungradable adjectives can be postnominal, as in (213) with *t'ee* 'dead'. The adjective *t'ee* 'dead' can have any order with respect to another adjective. I thus suggest that gradability should not be a primary characteristic when defining the type of adjectives that Sort introduces.

- (213) a. Cecilga hoxataprookeeja caa t'ee xetehiža haja.
 Cecil-ga hoxatap-rook-eeja caa t'ee xete-hiža Ø-haja
 Cecil-PROP woods-inside-there deer dead big-INDEF 3S-see
 'Cecil saw a big dead deer in the woods.' ('dead' > 'big')
- b. Cecilga hoxataprookeeja caa xete t'eehiža haja.
 Cecil-ga hoxatap-rook-eeja caa xete t'ee-hiža Ø-haja
 Cecil-PROP woods-inside-there deer big dead-INDEF 3S-see
 'Cecil saw a big dead deer in the woods.' ('big' > 'dead')

I leave it a question for future research why denominal adjectives in Hocak merge low. However, one possible answer could be the following. Grimshaw (1991, 2005) argues that lexical categories have an extended projection of functional categories. These functional categories have the same categorial specification that the lexical item does. PP and DP are the extended projections of NP, and CP and TP are the extended projections of VP. Grimshaw claims that each head in the extended projection has a functional value: the lexical head is assigned the value 0, the lowest functional head is valued at 1, and the next highest is 2 (and so on). Thus, each higher functional projection becomes more functional and less lexical. It would be possible to extend the notion of extended projections to the adjective orders discussed in this chapter. I suggest that there is some parameter at work in UG where in some languages, the order of adjectives is parallel to the formation of the nominal domain.³³ Adjectives that are more nominal (that is, denominal adjectives) are merged closer to the head noun, whereas less nominal-like adjectives (non-denominal adjectives) are merged farther from the head noun.³⁴

Moreover, I follow Georgi and Müller (2010) and Abels and Neeleman (2012), and I assume that the direction of a specifier is dependent on category-specific linearization rules.

³³Languages consistently merge denominal adjectives in a position close to the noun. In Japanese, nationality/origin and material classes of adjectives are the lowest in the attributive adjective domain (see Watanabe 2012), while in English, these classes in addition to shape and color classes are low in the structure (see Truswell 2009). See the discussion in section 3.5.

³⁴I assume that the modifiers *s'ii* 'longtime' and *Hqap hijobahq* 'Thursday' are denominal and thus are licensed by n. Kim (2014a) suggests that *yec* 'longtime' in Korean is also denominal.

In Hocak Spec,nP linearizes to left, while Spec,SortP linearizes to the right.³⁵

On the semantic side, I largely follow Kim (2014b). She proposes that there are two types of DP-internal modification: non-discourse-linked and discourse-linked.³⁶ Under her proposal, the interpretation of an adjective depends on whether it is in the scope of a generic operator (Chierchia 1995). Chierchia proposes that i-level readings are obtained through a checking relationship between a [+Q] feature (for “quantificational”) and a generic operator (henceforth, Gen). Lexical items that are interpreted as i-level merge with the [+Q] agreement feature, and Chierchia claims that this feature converts the phrase into a function that seeks Gen. Kim extends Chierchia’s approach to other interpretations of adjectives. She argues that non-discourse linked, non-intersective, and i-level adjectives are under the scope of Gen, while discourse-linked, intersective, and s-level adjectives are not in the scope of Gen. Non-intersective adjectives modify the *reference* of the noun phrase (in the sense of Bolinger 1967), since these adjectives are under the scope of Gen and cannot modify the *referent* of the noun. Intersective adjectives modify the *referent* of the noun phrase, as they are not bound by Gen.

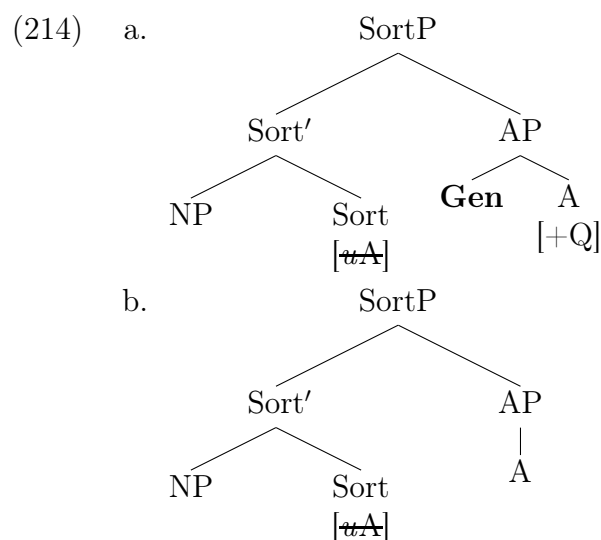
While Kim assumes that Gen is merged in the DP-spine, I instead suggest that Gen is

³⁵Hocak exhibits rightward specifiers in other areas of its grammar. In Johnson and Rosen 2014a, we show that postverbal arguments take scope over preverbal ones. We argue that postverbal constituents target a rightward specifier of CP. For more details see Johnson and Rosen (2014a).

The main alternative for analyzing postnominal adjectives is that all adjectives are in leftward specifiers, and that the head noun undergoes phrasal movement to a specifier above the postnominal adjectives. Within the present proposal, nP would move to the highest specifier of SortP. As addressed in section 3.3, this is the type of account that Cinque (2010) argues for. A phrasal movement account is a potentially viable option; however, it has a few drawbacks. First, it does not capture the fact that adjectives that are farther to the right take scope over ones to the right, according to NP-ellipsis data (see the discussion in section 3.4.3 below). Second, it is unclear how to motivate phrasal movement within the DP-domain. This becomes increasingly more difficult if we consider that nP could target an intermediate specifier of SortP, and then pied-pipe to a higher Spec,SortP. Note that this kind of movement also violates anti-locality. Abels and Neeleman (2012:52) state that “A head and its complement are in a local relation in the base structure (they c-command each other). No different relation is established by recombining the complement with a projection of the head. Therefore, there can be no trigger of such local recombination.” This means that a situation where a projection of Sort (namely, Sort’) moves into Spec,SortP should be blocked by anti-locality. Thus, I follow the simpler option: postnominal adjectives sit in rightward specifiers.

³⁶Kim (2014b) also posits a level where supplementary modifiers merge. I put this class of modifiers aside here.

located inside the AP itself. I am assuming a local licensing of Gen. This is similar to what Chierchia proposes for the structure of predicative NPs: the generic operator is adjoined to the predicate NP. A non-discourse linked, non-intersective, and i-level adjective is depicted in (214a): Gen checks the $[+Q]$ feature of the adjective. On the other hand, a discourse-linked, intersective, and s-level adjective does not have Gen in its phrase, as the adjective does not have a $[+Q]$ feature. This is shown in (214b).



The current proposal has the following advantages. First, I have proposed that there are no designated domains for i- or s-level modifiers. Since a generic operator can be merged inside the AP, this allows for variable orders of adjectives with different interpretations. For example, an adjective with an i-level reading does not necessarily have a fixed position within the noun phrase: it can appear before or after other adjectives. The same is true of s-level adjectives, as well as intersective versus non-intersective adjectives: they do not have rigid orderings among themselves. Next, the possible orders of adjectives are associated with the functional categories Sort and n. This is consistent with Borer's (1984) claim that parameterization is associated with functional categories (see also Chomsky 1995, 2001). Inter-linguistic variation of adjective orders depends on the lexical features that merge with Sort and n. In section 3.5, I will claim that English makes a division based on intersective

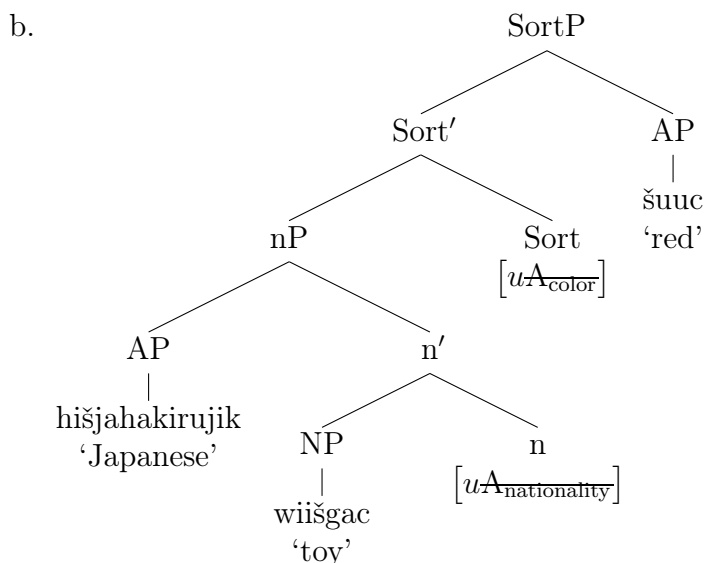
versus subjective semantics (see Truswell 2009), and that Japanese patterns like Hocak, since the division modifiers is based on denominal versus non-denominal adjectives (see Watanabe 2012). Each “division” is dependent on the language-specific properties of Sort and n.

Before deriving the adjective orders in Hocak, I briefly show that prenominal adjectives are lower than postnominal ones.

3.4.2 Prenominal Adjectives Are Lower than Postnominal Adjectives

In the proposed structure above, prenominal modifiers merge lower than postnominal ones. Consider the example in (215) (repeated from (137)): the noun *wiišgac* ‘toy’ merges with the nationality adjective *hišjahakirujik* ‘Japanese’ and the color adjective *šuuc* ‘red’.

- (215) a. Meredithga hišjahakirujik wiišgac šuucra ruwǝ.
 Meredith-ga hišjahakirujik wiišgac šuuc-ra Ø-ruwǝ
 Meredith-PROP Japanese toy red-DEF 3S-buy
 ‘Meredith bought the red Japanese toy.’

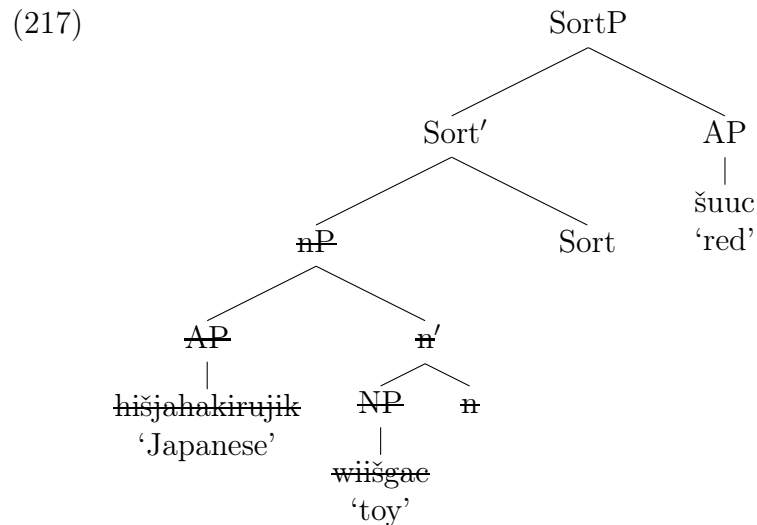


As seen in (215b), the nationality adjective *hišjahakirujik* ‘Japanese’ merges at Spec,nP and the color adjective *šuuc* ‘red’ merges at Spec,SortP.

The structure in (215b) indicates that SortP dominates nP. If SortP dominates nP, then adjectives in Spec,SortP should scope over those that are in Spec,nP. That is, postnominal adjectives should scope over prenominal ones. Johnson and Rosen (2014b) show that postnominal adjectives in Hocak are higher than prenominal ones through the standard diagnostic of NP-ellipsis. In (216a), the postnominal adjective *šuuc* ‘red’ takes scope over the prenominal adjective *hišjahakirujik* ‘Japanese’: the nationality adjective can be interpreted in the ellipsis site when ‘red’ is stranded. In contrast, (216b) illustrates that *waxopɪnɪxji* does not scope over *šuuc*: the noun phrase in the second conjunct cannot mean ‘red French toy’. The noun phrase in the second conjunct in (216b) has to mean a ‘French toy’.

- (216) a. Meredithga hišjahakirujik wiišgac šuucra ruwɪ anaga Bryanga
 Meredith-ga hišjahakirujik wiišgac šuuc-ra Ø-ruwɪ anaga Bryan-ga
 Meredith-PROP Japanese toy red-DEF 3S-buy and Bryan-PROP
~~hišjahakirujik wiišgac~~ seephižə ruwɪ.
 hišjahakirujik wiišgac seep-hižə Ø-ruwɪ
 Japanese toy black-INDEF 3S-buy
 ‘Meredith bought the red Japanese toy and Bryan bought a black (Japanese toy).’
 (Johnson and Rosen 2014b, (25))
- b. Meredithga hišjahakirujik wiišgac šuucra ruwɪ anaga Bryanga
 Meredith-ga hišjahakirujik wiišgac šuuc-ra Ø-ruwɪ anaga Bryan-ga
 Meredith-PROP Japanese toy red-DEF 3S-buy and Bryan-PROP
 waxopɪnɪxji ~~wiišgac šuuc~~hižə ruwɪ.
 waxopɪnɪxji wiišgac šuucra-hižə Ø-ruwɪ
 French toy red-INDEF 3S-buy
 = ‘Meredith bought the red Japanese toy and Bryan bought a French one.’
 ≠ ‘Meredith bought the red Japanese toy and Bryan bought a (red) French one.’

These data follow if prenominal adjectives merge lower than postnominal ones. For instance, the ellipsis site of the noun phrase in the second conjunct in (216a) can be depicted as in (217). The proposed NP-ellipsis shows that the nP is elided: the prenominal adjective is elided while the postnominal one is stranded. Thus, postnominal adjectives do not form a constituent that can be elided to the exclusion of prenominal ones. (I delay my discussion of how NP-ellipsis works under my proposal of Hocak adjective orders until chapter 4.)

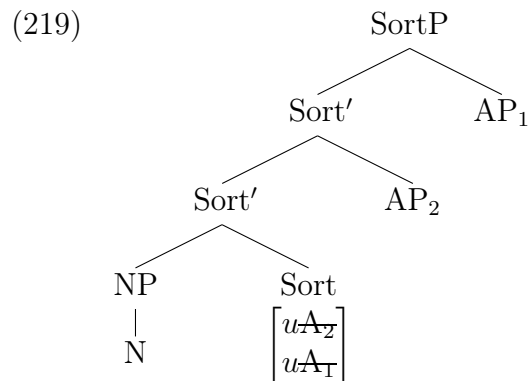


Johnson and Rosen (2014b) also test the scope interactions between postnominal adjectives through NP-ellipsis. As shown in (218a), the size adjective *xyny* ‘small’ can scope over the adjective to its left, *kirikiriš* ‘stripped’. In contrast, (218b) demonstrates that the adjective that is farther left (*kirikiriš* ‘stripped’) cannot scope over one to its right (*xyny* ‘small’).

- (218) a. Matejaga wijuk kirikiriš xetera ruwĭ anaga Sarahga xunura
 Mateja-ga wijuk kirikiriš xete-ra Ø-ruwĭ anaga Sarah-ga xunura-ra
 Mateja-PROP cat striped big-DEF 3S-buy and Sarah-PROP small-DEF
 ruwĭ.
 Ø-ruwĭ
 3S-buy
 ‘Mateja bought the big striped cat and Sarah bought the small (striped) one.’

- b. Matejaga wijuk kirikiriš xetera ruwĭ anaga Sarahga kerekerešra
 Mateja-ga wijuk kirikiriš xete-ra Ø-ruwĭ anaga Sarah-ga kerekereš-ra
 Mateja-PROP cat striped big-DEF 3S-buy and Sarah-PROP spotted-DEF
 ruwĭ.
 Ø-ruwĭ
 3S-buy
 = ‘Mateja bought the big striped cat and Sarah bought the spotted one.’
 ≠ ‘Mateja bought the big striped cat and Sarah bought the (big) spotted one.’
 (Johnson and Rosen 2014b, (29))

This indicates that adjectives that are farther to the right take scope over those to the left, as shown by the structure below in (219).

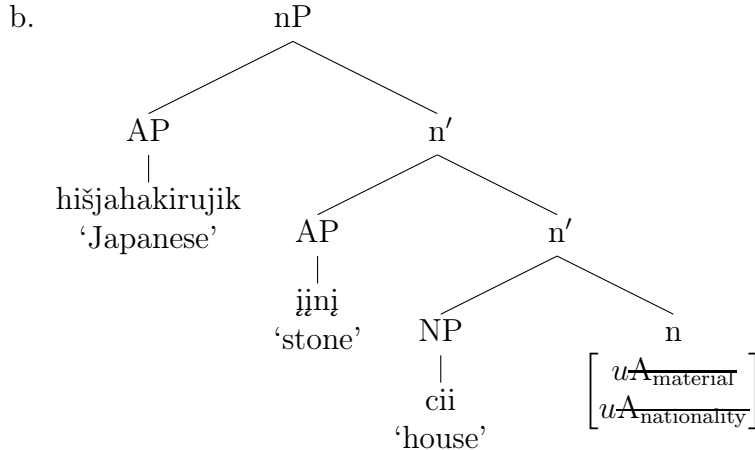


3.4.3 Capturing the Hocak Data

In this section, I show how the present analysis captures the Hocak adjective ordering facts.

First, consider the order of prenominal adjectives. In a case where a noun is modified by multiple prenominal adjectives, *n* merges into the derivation with the ordered stack $[uA_{\text{material}}] > [uA_{\text{nationality}}]$. This is schematized below in (220b) for the noun phrase in (220a).

- (220) a. Cecilga hišjahakirujik jini ciira ruwɿ.
 Cecil-ga hišjahakirujik jini cii-ra Ø-ruwɿ
 Cecil-PROP Japanese stone house-DEF 3S-buy
 ‘Cecil bought the Japanese stone house.’



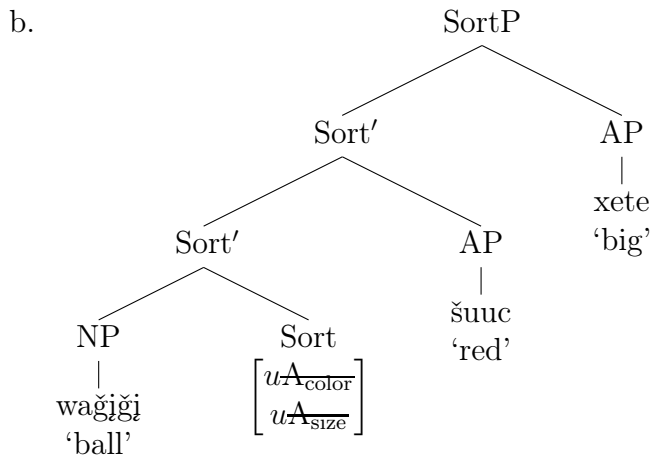
The surface order of these two adjectives is derived by the order of $[uA_{\text{material}}] > [uA_{\text{nationality}}]$ on n . I assume that features are checked in a top-down fashion (Georgi and Müller 2010); thus, a material adjective, such as *jini* ‘stone’, merges first, and a nationality/origin adjective like *hišjahakirujik* ‘Japanese’ merges next. The features on n are mirrored in the syntax, and the merging of adjectives produces multiple specifiers of nP . The n head may contain both $[uA_{\text{material}}]$ and $[uA_{\text{nationality}}]$ features, one of them, or none of them. These features are optionally added to n when it enters the Numeration. The possible n heads that enter the syntax are outlined in (221).³⁷

- (221) a. $\begin{bmatrix} n \\ uA_{\text{material}} \\ uA_{\text{nationality}} \end{bmatrix}$ b. $\begin{bmatrix} n \\ uA_{\text{nationality}} \end{bmatrix}$ c. $\begin{bmatrix} n \\ uA_{\text{material}} \end{bmatrix}$

³⁷The analysis predicts that neither n nor Sort have to bear adjective structure-building features. I assume that in addition to containing these adjective structure-building features, n and Sort have nominal content. I will remain agnostic on whether their projections are syntactically present when n or Sort do not have their adjective structure-building features. nP and SortP might not be syntactically present because the only features that they would contribute to each interface (PF or LF) are their nominal features. For the purposes of exhibition, I will not represent nP or SortP when there are no adjectives merged in their specifiers.

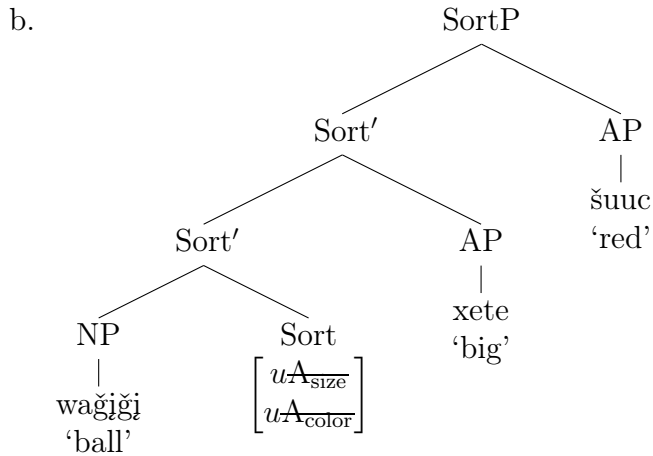
Let us turn to the postnominal adjectives. These adjectives enter the syntactic derivation when Sort is equipped with the appropriate adjective features. Sort triggers the merger of non-denominal adjectives, which include quality, size, color, and shape classes. For example, the orders of two postnominal adjectives is demonstrated below for the noun phrase in (222).

- (222) a. Bryanga waǵǵi šuuc xetera haja.
 Bryan-ga waǵǵi šuuc xete-ra Ø-haja
 Bryan-PROP ball red big-DEF 3S-see
 ‘Bryan saw the big red ball.’



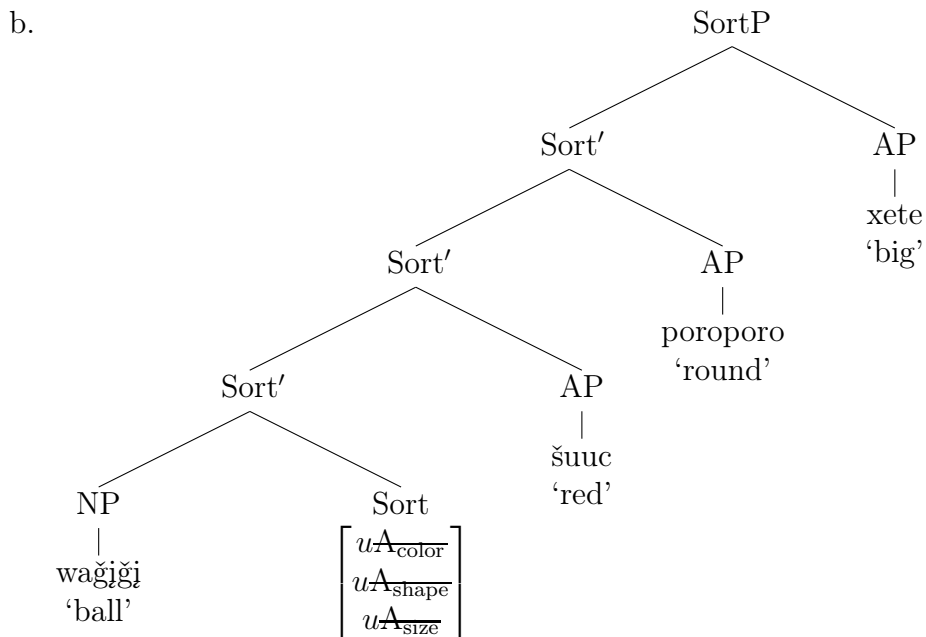
In (222b), the order of adjective features on Sort is $[uA_{\text{color}}] > [uA_{\text{size}}]$, which yields the surface order of color (*šuuc* ‘red’) > size (*xete* ‘big’). Recall, however, that the order of postnominal adjectives is free. I propose that the features that trigger this set of adjectives are not strictly ordered on Sort. Thus, the order of features on Sort in (222b) can be reversed to produce the opposite order of postnominal adjectives. This is shown in (223a) and is schematized in (223b).

- (223) a. Bryanga waǵǵi xete šuucra haja.
 Bryan-ga waǵǵi xete šuuc-ra Ø-haja
 Bryan-PROP ball big red-DEF 3S-see
 ‘Bryan saw the big red ball.’



Next, consider a case when three postnominal adjectives occur in the same noun phrase in (224a). As depicted in (224b), three postnominal adjectives merge in specifiers of SortP. Since the feature stack on Sort is not strictly ordered, any order of three adjectives is possible, as outlined with each remaining possible stack of features in (225).

- (224) a. Meredithga wağiği šuuuc poroporo xetera ruwɿ.
 Meredith-ga wağiği šuuuc poroporo xete-ra Ø-ruwɿ
 Meredith-PROP ball red round big-DEF 3S-buy
 ‘Meredith bought the big round red ball.’

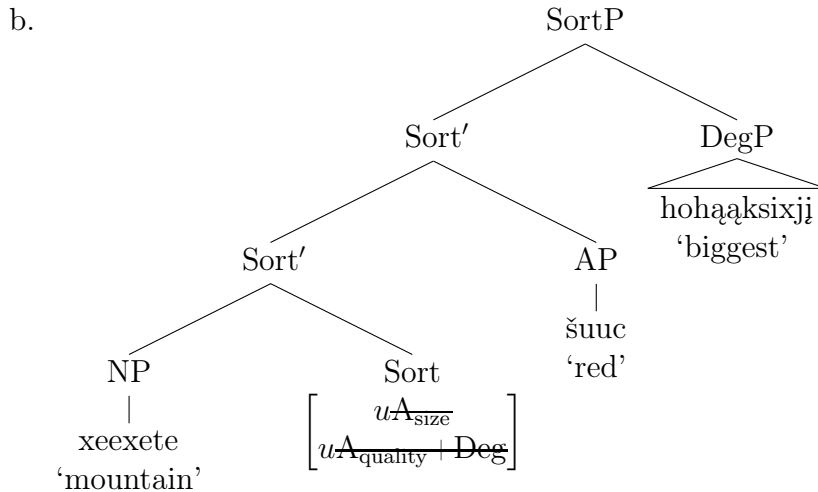


- (225) a.
$$\begin{array}{c} \text{Sort} \\ \left[\begin{array}{c} uA_{\text{shape}} \\ uA_{\text{color}} \\ uA_{\text{size}} \end{array} \right] \end{array}$$
- b.
$$\begin{array}{c} \text{Sort} \\ \left[\begin{array}{c} uA_{\text{color}} \\ uA_{\text{size}} \\ uA_{\text{shape}} \end{array} \right] \end{array}$$
- c.
$$\begin{array}{c} \text{Sort} \\ \left[\begin{array}{c} uA_{\text{size}} \\ uA_{\text{shape}} \\ uA_{\text{color}} \end{array} \right] \end{array}$$
- d.
$$\begin{array}{c} \text{Sort} \\ \left[\begin{array}{c} uA_{\text{shape}} \\ uA_{\text{size}} \\ uA_{\text{color}} \end{array} \right] \end{array}$$
- e.
$$\begin{array}{c} \text{Sort} \\ \left[\begin{array}{c} uA_{\text{size}} \\ uA_{\text{color}} \\ uA_{\text{shape}} \end{array} \right] \end{array}$$

The features of Sort in (225a) are set to merge a shape adjective in the inner-most specifier of Sort, then a color adjective, followed by a size one. The remainder of the feature bundles shown in (225b)–(e) represents the other variations of Sort with three adjectives. The structure in (224b) provides a similar analysis to Cinque’s in that adjectives are in specifiers of functional projections. The features on both heads are intended to capture much of the patterns in Cinque’s approach. However, multiple specifiers are not available under Cinque’s approach as he follows Kayne 1994 in which each head supports one specifier. Moreover, I suggest that different orders of postnominal adjectives are not due to movement, but they are due to variations in Sort.

As for the order of superlative adjectives with respect to bare adjectives, recall that superlatives must appear at the far right edge of adjectival modification. The example in (226a) with a bare and superlative adjective is schematized in (226b).

- (226) a. Cecilga xeexete šuuc hohaąksixjira hoti.
 Cecil-ga xee-xete šuuc ho-haąkši-xji-ra Ø-hoti
 Cecil-PROP hill-big red SUP-high-SUP-DEF 3S-climb
 ‘Cecil climbed the highest red mountain.’

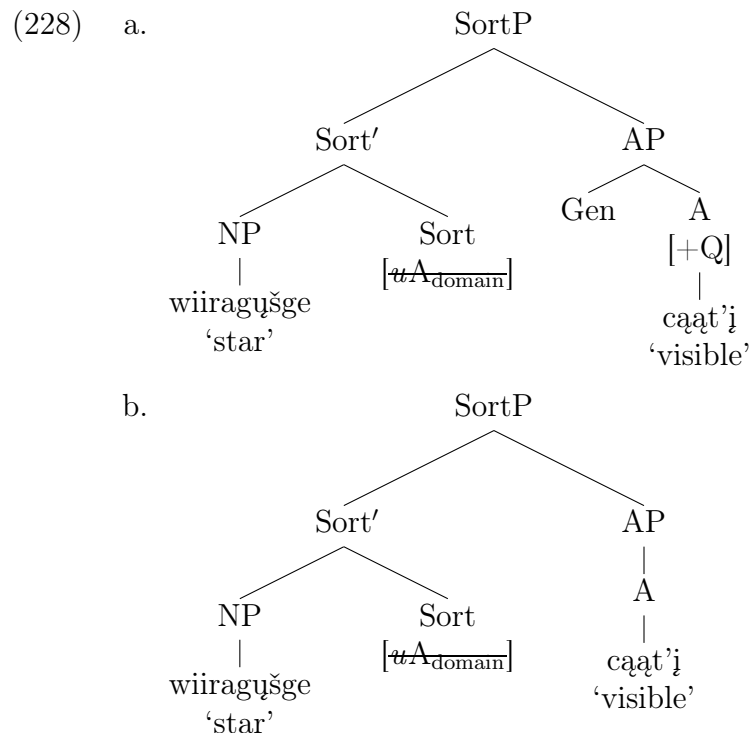


I interpret this as indicating that there is one restriction with respect to organizing the adjective features on Sort. Unlike the other postnominal adjectives, those with *ho- ... -xji* must be triggered by a feature at the bottom of the stack. This forces superlatives to appear to the far right of the other adjectives. Heim (1999) and Bhatt (2002) assume that the superlative morpheme is associated with focus properties. I tentatively suggest that the intensification effect provided by *ho- ... -xji* is related to the morpheme's focus properties. Because focus and focus-related interpretations have been claimed to be located high in the structure (cf. Rizzi 1997) or at the edges of some phrasal domains (Chomsky 2001), the superlative adjective in Hocak merges at the edge of SortP. This is similar to the position of English superlatives: they sit high in the DP-structure (see e.g., Cinque 2010:32). In particular, Cinque proposes that the superlative morpheme is merged high in the structure and attracts an adjective from a direct modification position (cf. Heim 1999). Without going into more detail about Cinque's proposal, I will continue to suggest that the superlative adjective merges into the syntax fully inflected (see chapter 2, section 2.3.4), and that it is base-generated in the highest specifier of SortP. Since nothing hinges on the choice between these two approaches, I leave Cinque's proposal as a possible alternative.

I now turn to how the proposal captures the interpretive differences among postnominal adjectives. Consider (227a) and (b), where *cqqt'i* 'visible' can have either an i- or s-level

interpretation. I propose that there two lexical entries for *cqat'i* ‘visible’: one contains the [+Q] feature yielding an i-level interpretation, and the other does not, which produces an s-level interpretation. The adjective receives an i-level reading when it merges with a [+Q] feature, which induces the presence of Gen in (228a). When the adjective has an s-level reading, it does not have the [+Q] feature, and is thus not in the scope of Gen in (228b).³⁸

- (227) Wiiragušge cqaṭ'ira Kikiga wa'unaḱšana.
 wiiragušge cqaṭ'i-ra Kiki-ga Ø-wa'u-naḱ-šana
 star visible-DEF Kiki-PROP 3S-AUX-POS-DECL
- a. ‘Kiki is an inherently visible star.’ (i-level)
 b. ‘Kiki is a star that is visible on a particular occasion.’ (s-level)



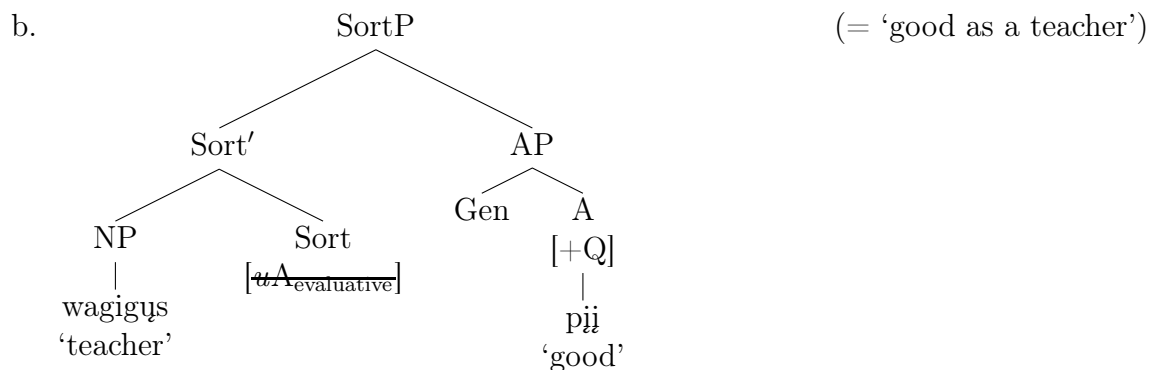
Since Gen is in the same phrase as the adjective, variable word order is possible. It can appear before or after other adjectives without affecting the adjective’s interpretation. This

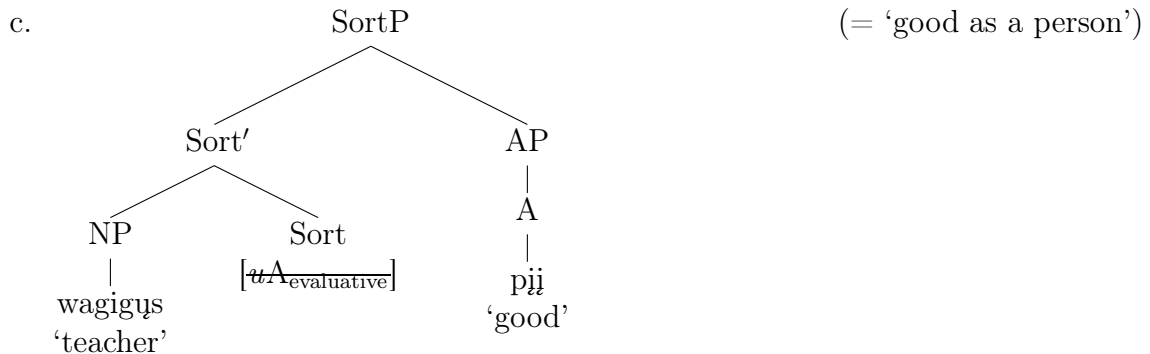
³⁸I refer to this set of i- and s-level adjectives as “domain” adjectives (Harris 2012). Thus I label the feature that triggers i- and s-level adjectives as [uA_{domain}].

account thus correctly predicts that the s-level entry of *cqqt'i* ‘visible’ can merge in variety of orders with other adjectives.

The same analysis explains the facts concerning *pji* ‘good’, which can receive either an intersective or non-intersective interpretation. To illustrate, consider the sentence in (229a). When *pji* modifies *wagigys* ‘teacher’, it can refer to the property of being a teacher, or to a property of the person (i.e., is good-hearted). As shown in (229b) for the non-intersective reading, *pji* has a [+Q] feature, which then is bound by Gen in its specifier. The adjective *pji* receives the non-intersective reading since it is in the scope of Gen, and thus cannot modify the referent of the noun (cf. Cinque 2010, Kim 2014b). In (229c), *pji* receives an intersective reading because it does not have the [+Q] feature, and thus is not within the scope of a Gen operator.

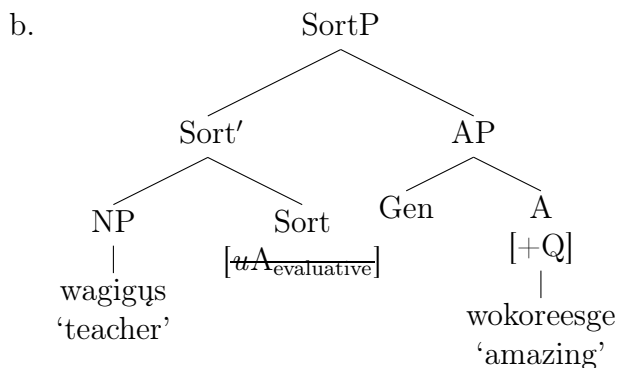
- (229) a. Sarahga wagigys pijhiža hokit’e.
 Sarah-ga wagigys pij-hiža Ø-hokit’e
 Sarah-PROP teacher good-INDEF 3S-speak.to
 ‘Sarah spoke to a good teacher.’





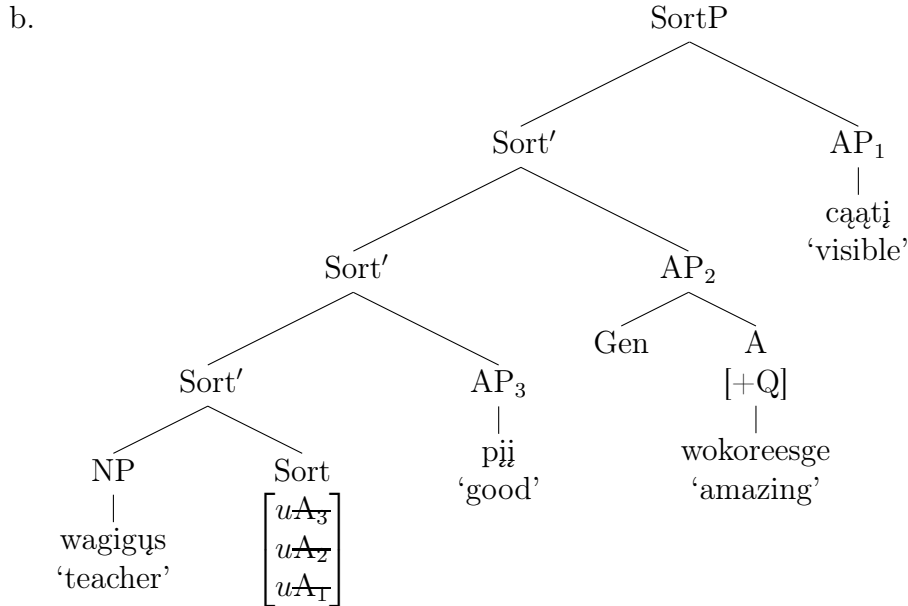
Let us now consider the adjective *wokoreesge* ‘amazing’ in (230). Recall that *wokoreesge* only has a non-intersective reading. I suggest that the Hocak lexicon only has the [+Q] version of *wokoreesge* ‘amazing’. Thus, *wokoreesge* is always under the scope of Gen (in the DP-domain).

- (230) a. Cecilga wagigʏs wokoreesgehiʒa waʔnaʒʒana.
 Cecil-ga wagigʏs wokoreesge-hiʒa Ø-waʔu-naʒ-ʒana
 Cecil-PROP teacher amazing-INDEF 3S-AUX-POS.NEUT-DECL
 ‘Cecil is an amazing teacher.’ (= ‘amazing as a teacher’)



This “local licensing” approach with respect to the position of Gen can also account for the adjective orders where an adjective with a direct modification interpretation is between two adjectives with indirect modification readings. The structure for (231a) (repeated from 194b)) is shown in (231b).

- (231) a. Meredithga wagigʏs pij wokoreesge caaṭiṛa haja.
 Meredith-ga wagigʏs pij wokoreesge caaṭiṛa Ø-haja
 Meredith-PROP teacher good amazing visible-DEF 3S-see
 ‘Meredith saw the good visible amazing teacher.’ (‘good’ > ‘amazing’ > ‘visible’)



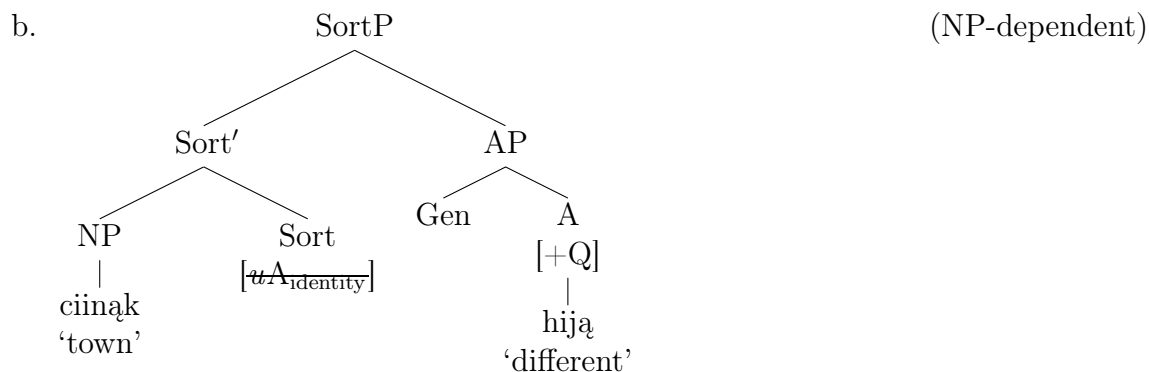
As in the tree in (231b), the adjectives with the indirect modification readings (*pij* ‘good’ and *caaṭiṛ* ‘visible’) are not under the scope of Gen. In contrast, the adjective with a direct modification interpretation (*wokoreesge* ‘amazing’) is under the scope of Gen. Under this approach, Gen is locally licensed inside the AP. If Gen were generated in a position high in the DP-spine (see Larson 1998, Kim 2014b), the order in (231a) would not be predicted to occur. The hypothesis that Gen can be generated inside the AP, as in (231b), handles the order in (231a) straightforwardly.³⁹

³⁹There is another issue with non-intersective adjectives that I do not address in this chapter. The issue is that non-intersective adjectives modify an internal property of the head noun. These adjectives tend to merge close to the head noun, and thus the semantics between the adjective and the head noun can be read directly off of the syntax. However, non-intersective adjectives in Hocak present a problem for this strict compositionally (see e.g., (231) above). One possible approach could be to adopt the theta-marking strategies proposed by Higginbotham (1985).

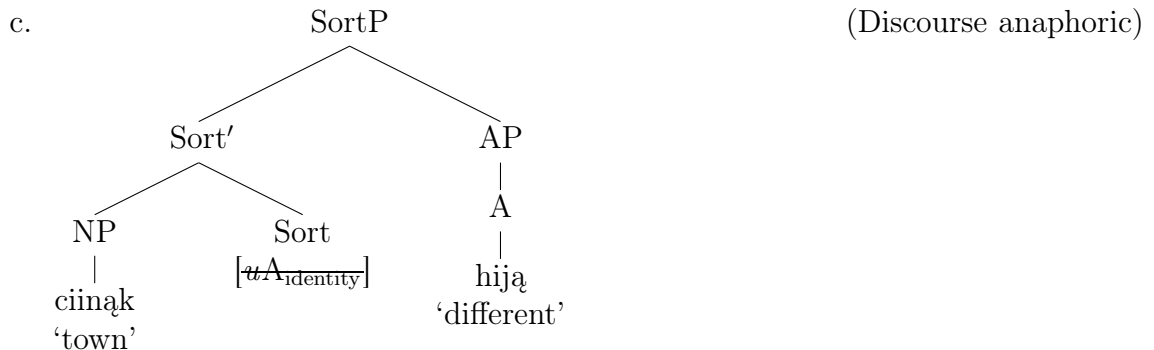
Higginbotham proposes two theta-marking operations with respect to adjectives: theta-identification and Autonomous theta-marking. In theta-identification, the adjective coindexes its theta-role with the referential-role of the noun. In Autonomous theta-marking, the adjective discharges its theta-role to the noun it modifies. Higginbotham assumes that Autonomous theta-marking occurs in a sister relationship. Under this proposal,

Lastly, the adjective *hija* ‘different’ is straightforwardly explained by the current analysis (see (232)). *Hija* ‘different’ can have either an NP-dependent or discourse reading depending on whether the adjective is in the scope of Gen, as in (232b) and (c). When *hija* ‘different’ merges with Gen (as in (232b)), it can only receive an NP-dependent reading because Gen acts as an intervener from higher operators in the discourse (i.e., a minimality effect). On the other hand, when *hija* does not merge with Gen (as in (232c)), the adjective produces a discourse anaphoric reading because the adjective is not within the scope of Gen (see Kim 2014b for a similar explanation).

- (232) a. Meredithga anaga Matejaga ciinaḵ hija ciire.
 Meredith-ga anaga Mateja-ga ciinaḵ hija cii-ire
 Meredith-PROP and Mateja-PROP town different live-3PL.S
 ‘Meredith and Mateja live in different towns.’



intersective adjectives use theta-identification, non-intersective adjectives employ theta-identification plus Autonomous theta-marking, and privative (i.e., non-predicative) adjectives only use Autonomous theta-marking. It is possible that in English, an adjective can only autonomously theta-mark its sister, whereas in Hocak, Autonomous theta-marking can take place through a long distance relationship.



In sum, the present analysis argues that the organization of adjectives is not directly linked to phrase structure, but rather is a result of features stacked on functional heads.⁴⁰ The proposal here follows Georgi and Müller (2010) and Manetta (2010) and suggests that multiple features in the nominal domain can stack on a single head. I contend that *n* and *Sort* bear features directly from the lexicon, and that these features are organized by language-specific rules on each head. The outcome of my analysis is that variation in adjective ordering can be reduced to properties associated with the two functional categories *n* and *Sort*. Lo-

⁴⁰Since the data in (196)–(198) (repeated as (i)–(ii)) with *cqatḱi* ‘visible’ and *pḱi* ‘good’ are not fully understood, I leave an explanation of these data for future research. However, note that while (i) and (ii) do not have a clear explanation in Cinque’s account (see chapter 3, section 3.3), I submit that the proposal developed here puts us in a better position to understand these data.

- (i) a. Cecilga wiiraguṣge caat’ira caat’ira hiperesṣana.
 Cecil-ga wiiraguṣge caat’i-ra caat’i-ra Ø-hiperes-ṣana
 Cecil-PROP star visible-DEF visible-COMP 3S-know-DECL
 ‘Cecil knows the visible visible star.’
- b. * Cecilga wiiraguṣge caat’i caat’ira hiperesṣana.
 Cecil-ga wiiraguṣge caat’i caat’i-ra Ø-hiperes-ṣana
 Cecil-PROP star visible visible-DEF 3S-know-DECL
 Intended: ‘Cecil knows the visible visible star.’
- (ii) a. Matejaga wagax haja pḱira waḱsik pḱihiṣa herera hikiḱa.
 Mateja-ga wagax haja pḱi-ra waḱsik pḱi-hiṣa Ø-here-ra Ø-hikiḱa
 Mateja-PROP student good-DEF human good-INDEF 3S-be-COMP 3S-meet
 ‘Mateja met the good good student.’
 (lit. ‘Mateja met the good student that is a good(-hearted) person.’)
- b. * Matejaga wagax haja pḱi pḱira hikiḱa.
 Mateja-ga wagax haja pḱi pḱi-ra Ø-hikiḱa
 Mateja-PROP student good good-DEF 3S-meet
 Intended: ‘Mateja met the good good student.’

cating cross-linguistic variation in the functional vocabulary is consistent with Borer (1984), who proposes that all cross-linguistic variation is on functional heads. By comparison, the cartographic approach of Cinque (2010) posits a hierarchy of projections (cf. (175a)) that encode absolutes. Cinque claims that there is an (unknown) principle that produces one universal order, while other orders are the result of phrasal movement.

Sort and *n* have different features depending on the language. In the case of Hocak, Sort triggers the merger of non-denominal adjectives, and *n* triggers denominal ones. While Georgi and Müller (2010) and Manetta (2010) have proposed that features may stack on a *single* head in order to account for word order variation, I have posited that there are two heads which host specifiers for adjectives to be merged. Two heads are more than one, and thus one may see this as more complicated. However, this does not seem to be an unwarranted complication, as adjectives cross-linguistically appear to divide into largely two groups (e.g., denominal and non-denominal in Hocak). I further defend this claim in section 3.5, where I examine how adjective orders in English and Japanese are organized into two sets.

3.4.4 A ‘Fake’ Scope

Section 3.3 included examples that showed that the adjective *woišjake* ‘fake’ can take scope over another adjective like *t’eeek* ‘rotten’ regardless of their relative ordering, and vice versa. Consider the examples presented again as (233) below.

- (233) a. Meredithga kšee woišjake t’eeekhižə ruwɿ.
 Meredith-ga kšee woišjake t’eeek-hižə Ø-ruwɿ
 Meredith-PROP apple fake rotten-INDEF 3S-buy
 (i) = ‘Meredith bought a fake rotten apple.’
 (ii) = ‘Meredith bought a fake apple that was rotten.’

- b. Meredithga kšee t'eeek woišjakehižą ruwį.
 Meredith-ga kšee t'eeek woišjake-hižą Ø-ruwį
 Meredith-PROP apple rotten fake-INDEF 3S-buy
 (i) = 'Meredith bought a fake rotten apple.'
 (ii) = 'Meredith bought a fake apple that was rotten.'

In the analysis that I am proposing, adjectives are base generated as specifiers of either nP or SortP. Recall that I proposed that SortP has rightward specifiers. When a postnominal adjective is farther to the right, it is higher than an adjective to its left. We would expect *t'eeek* 'rotten' to take scope over *woišjake* 'fake' in (233a) and vice versa in (233b). As pointed out above, this is not always the case. Within my proposal there are few options that we can follow to account for the scope of *woišjake*.

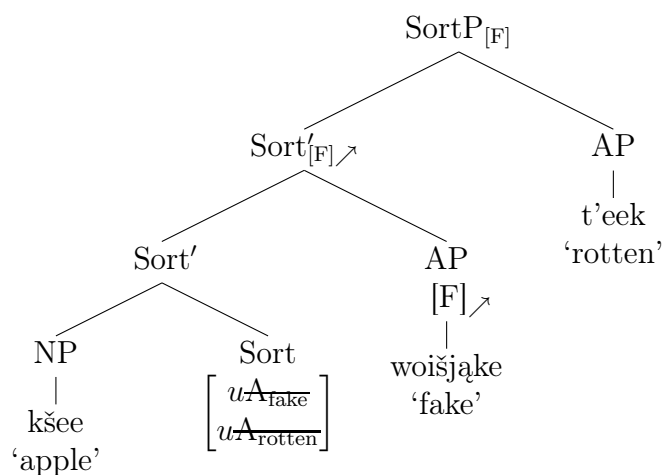
First, one could account for the scopal interactions by appealing to the notion of segments: two nodes with the same label (May 1985). May argues that when two phrases merge as bar levels with the same projection, they may mutually scope over each other. According to May, this is possible because both phrases mutually c-command each other (cf. Kayne 1994; see also Ernst 2001 for an opposing view with respect to the nature of segments). This would account for the ambiguous scopes with respect to *woišjake* 'fake' in Hocąk. If Sort' is considered a segment, then they do not create asymmetric c-command among the APs in the SortP-domain. Thus, *woišjake* can have ambiguous scope with other adjectives, as the adjectives mutually c-command each other.

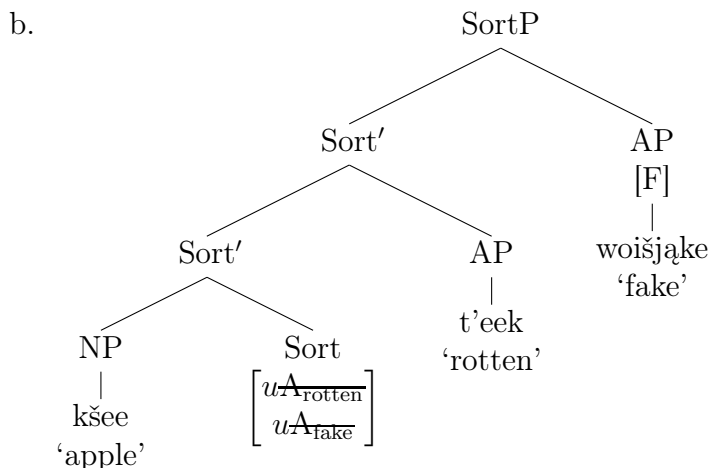
A different account could claim that the feature of *woišjake* 'fake' that produces a scope effect can merge in two different locations. Let us assume that adjectives like *woišjake* 'fake' contain an operator feature as part of its lexical composition. I will refer to this feature as [F]. In most cases, [F] will merge with the AP itself. However, since I am proposing a feature stacking account, where postnominal adjectives are licensed by features on Sort, I suggest that [F] could merge with [*uA*]. This follows from the notion that a specifier and a

head in the same phrase both have the same feature: spec-head agreement results through this relationship (cf. Chomsky 1995). We can then say [F] takes scope depending on where it merges. If [F] merges with the AP itself, it takes scope from the position of AP. On the other hand, when [F] merges with the adjective licensing feature, it can take a lower scope.

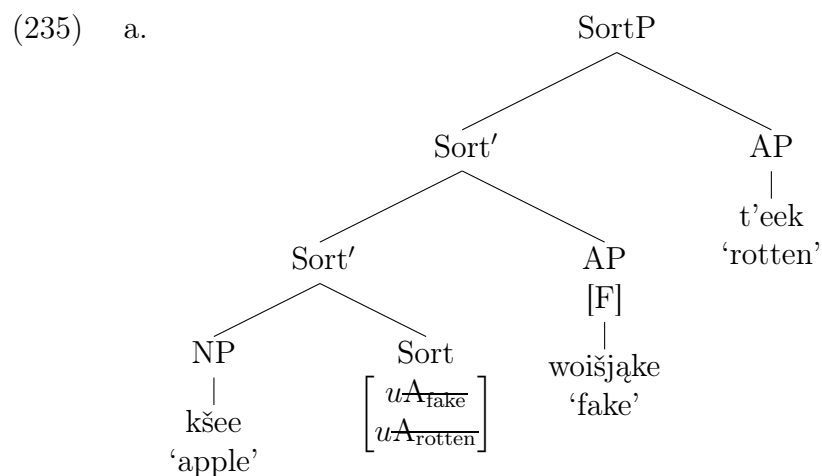
I begin by addressing the first interpretation: *woišjqake* ‘fake’ takes scope over *t’eeek* ‘rotten’. (233a) and (b) are represented by (234a) and (b), respectively. In (234a), the scope feature [F] merges with *woišjqake*. I suggest that [F] can percolate from the AP to Sort’ then to SortP (as represented by “↗”). Since [F] is taking scope at SortP, it can scope over *t’eeek* yielding the first interpretation of (233a). In (234b), [F] again is merged with *woišjqake*. In this case, *woišjqake* is higher than *t’eeek* and thus takes scope. Note that [F] can still percolate to SortP in this case.

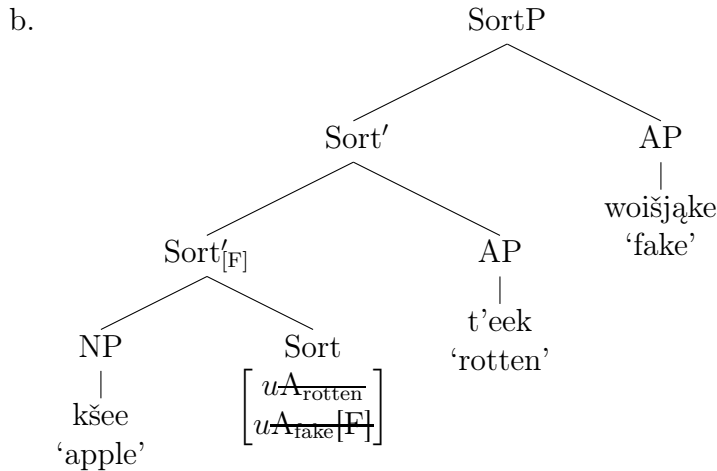
(234) a.





The second interpretation of (233a) and (b), where *t'eeek* 'rotten' takes scope over *woišjake* 'fake', is obtained as follows. In (235a), *woišjake* 'fake' is merged with [F]. However, the feature crucially does not percolate to SortP, and the adjective takes low scope (compare to (234a)). In a noun phrase such as (235b), [F] merges with the adjective feature [*uA*]. What results is a low scope of *woišjake* 'fake' because [F] only scopes over Sort' and not *t'eeek* 'rotten'. Again, [F] does not percolate (that is, project at SortP).





If we assume that percolation of $[F]$ is optional, this analysis can account for the low scope of *woišjake* ‘fake’ (see (335)). We could say that when $[F]$ is merged in the examples in (335), it does not percolate (see e.g., Cable 2007 for an alternative to percolation operations).⁴¹

To conclude, we can maintain the proposal that adjectives are licensed by two functional heads, and that the ordering of adjectives is determined by the stack of features on each functional head. The qualification is how to address the data concerning *woišjake* ‘fake’. Both of the possibilities presented above offer a means of deriving the scope facts; however, I will leave it to future research whether either one of these can be further supported, or the data is better accounted for by another possibility.⁴²

⁴¹I assume that this proposal only works for operator adjectives like *woišjake* ‘fake’ (i.e., privative adjectives) since they have an operator feature as part of their lexical composition. Such privative adjectives have a negative entailment: a *fake* gun is not a gun (Partee 2007). Whether this operator feature turns out to be a type of negation remains an open question.

⁴²A less desirable possibility comes from a roll-up derivation. Adjectives in SortP are base-generated in leftward specifiers in any order. nP/NP could move to the highest Spec,SortP, which preserves the original postnominal adjective ordering; or nP/NP targets a Spec,SortP above each adjective, and then pied-pipes. For example, if you start with (ia) and move the noun without pied-piping, the structure is realized as in (ib). On the other hand, if you begin with (iia), and the noun pied-pipes, the order in (iib) is obtained. This could account for the different scope facts seen above. However, as noted in footnote 35, this type of movement would violate anti-locality (Abels and Neeleman 2012). I thank Becky Shields (personal communication) for bringing this possibility to my attention, and discussion thereafter.

3.5 Beyond Hocak: A Cross-linguistic Look

The goal of this subsection is to address how the analysis of Hocak adjective orders can be extended to other languages. I look at the adjective orders in English and Japanese. First recall that the proposal in section 3.4 makes use of two heads: *n* and *Sort*. Previous approaches to feature stacking have made use of a single head. Georgi and Müller (2010) stack all of the nominal-domain features on *N*, whereas Manetta (2010) places all information structure features on *C*. While it perhaps is possible to stack all adjective features on a single functional head, I suggest that the use of two heads provides a straightforward explanation for not only the split seen in Hocak between prenominal and postnominal adjectives, but also two types of splits seen in English and Japanese. English shows a division between subsective and intersective adjectives: subsective adjectives must precede intersective ones. Japanese, on the other hand, shows a similar pattern to Hocak: denominal modifiers (see Watanabe 2012) are ordered and follow non-denominal adjectives. I address the two types of adjective splits in turn.

3.5.1 Adjective Ordering in English

Truswell (2009) shows that there is a clear division between subsective and intersective adjectives in English. In his investigation, Truswell considers four intersective adjective classes: color, nationality/origin, material, and shape. The orders of intersective adjectives are completely free with respect to each other, as shown in (236).

-
- (i) a. [SortP AP₁ [Sort' AP₂ [NP N]]
 b. [SortP NP [Sort' AP₁ [Sort' AP₂ [t_{NP}]]]]
- (ii) a. [SortP AP₂ [Sort' AP₁ [NP N]]
 b. [SortP [Sort' NP [Sort' AP₁ t_{NP}]] [Sort' AP₂ t_{Sort'}]]

(236) *Free order of intersective adjective pairs (Truswell 2009:527)*

- a. wooden French mantel clock — French wooden carriage clock
- b. wooden red clogs — red wooden clogs
- c. wooden circular pedestal — circular wooden pedestal
- d. French red doors — red French doors
- e. French circular table — circular French side table
- f. circular red patch — red circular patch

Truswell also considers two classes of subsecutive adjectives: size and quality. Subsecutive adjectives have free orders; see (237).

(237) *Free order of subsecutive adjective pairs (Truswell 2009:527)*

new big cuts — big new cuts

In addition, the examples in (238) and (239) show that subsecutive adjectives must precede intersective ones.

(238) a. ?? wooden big bridge

b. ?? French big feline

c. * red big N

d. ?? circular big flat lights

(239) a. ?? wooden new concrete piles

b. ?? French new site

c. * red new N

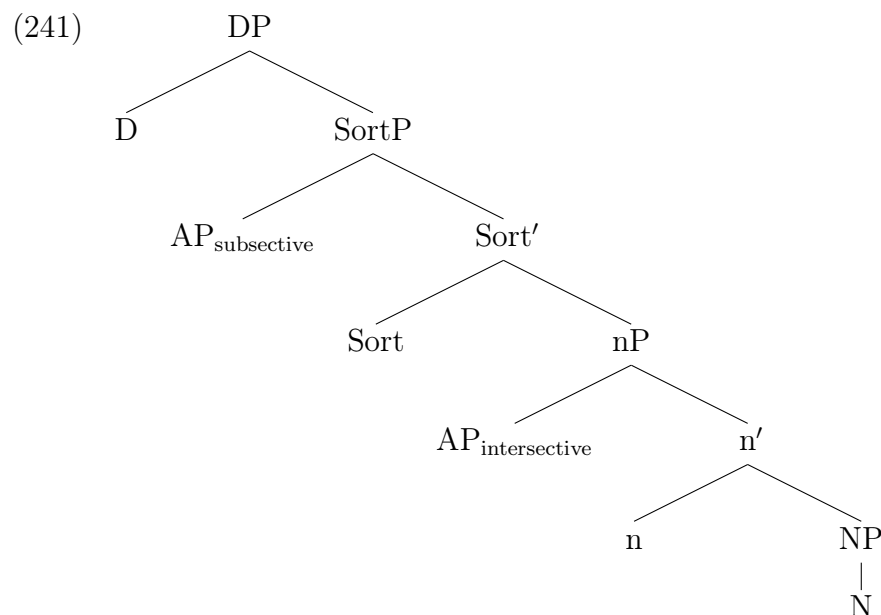
d. ?? circular new table decorations

From these data, Truswell makes two conclusions. First, hierarchies like those proposed by Cinque (1994) and Scott (2002) are not flexible enough to account for the free orderings

within intersective and subsective classes in English. Second, the data provide a minimal template for adjective orderings in English. As shown in (240), a head “X” would license subsective adjectives as adjuncts or specifiers while intersective adjectives adjoin or are in multiple specifiers of NP.

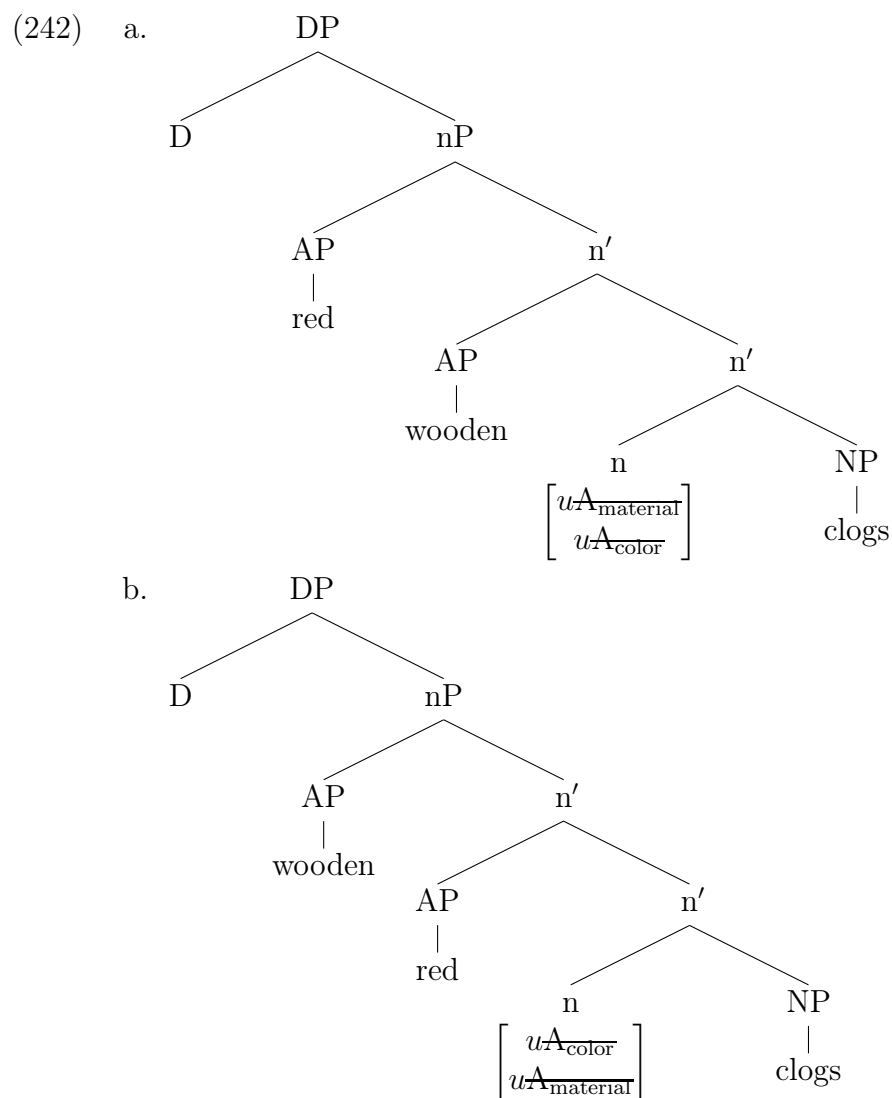
(240) [DP D [XP AP_{subsective} X [NP AP_{intersective} N]]]

Following the analysis for Hocak, I propose the basic structure for English direct modification in (241).



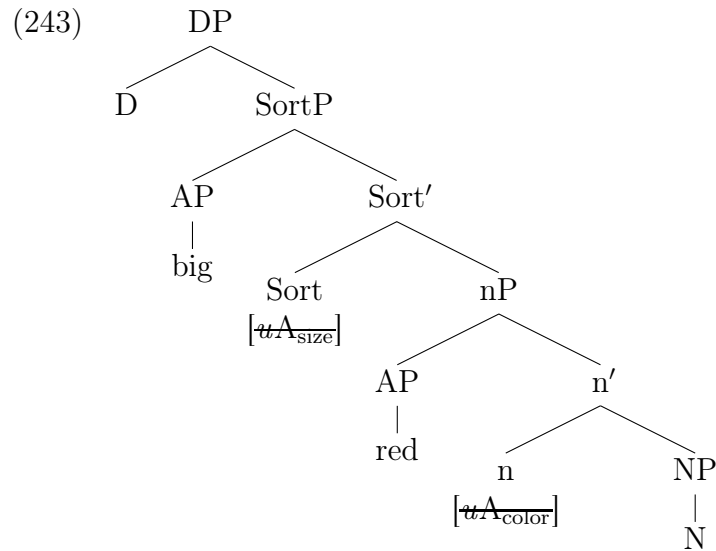
This structure is faithful to Truswell’s hypothesized structure. There are two domains: the higher domain is the locus of subsective modification and the lower one is the locus of intersective modification. (241) provides a label for Truswell’s X. Under the current view, X is Sort, and n triggers the merger of intersective modifiers instead of the head noun. In English, the division between intersective and subsective adjectives is due to the fact that Sort triggers subsective adjectives while n triggers intersective ones.

Let us see how this applies to the English examples above. Given the present analysis, we expect two (or more) intersective modifiers to be able to merge in Spec,nP. When two intersective adjectives occur, they may be merged in either order, as the features that trigger the merger of intersective modifiers are not strictly ordered. Thus, a color adjective and a material adjective can occur in either order (see (236) above). This is shown in the structures in (242).



I turn now to restricting the order between substantive and intersective modifiers. In the case of the example in (238) above, the size adjective *big* merges in Spec,SortP, and the color

adjective *red* merges in Spec,nP. This is because *big* is a subsective adjective, and *red* is an intersective modifier. This is schematized in (243).



There are significant differences between the organization of adjectives in English and Hocak. Hocak makes a division between two adjective domains based on denominal and non-denominal lines, whereas English splits subsective and intersective adjectives. In other words, Hocak adjectives split along morphosyntactic lines, and English ones split along semantic lines. In English, color, shape, nationality/origin, and material classes can have free orderings among themselves, but these classes cannot be freely ordered with size and quality adjectives. In contrast, the adjective classes color, shape, size, and quality in Hocak do not have rigid ordering, while nationality/origin and material adjectives are in a separate domain. The feature stacking proposal asserts that parametric variation of adjective orders is located in the lexicon (cf. Borer 1984). Sort and n in a given language may have different features that allow certain adjectives to appear within each domain in the noun phrase. This means that regularities in adjective orders may have differing splits. The present approach accounts for the differences by stating that in a given language Sort licenses adjectives of

type X, whereas n triggers adjectives of type Y.⁴³

Before concluding this section, I want to address Cinque's (2010) comments concerning the data presented by Truswell (2009). Cinque (2010:30) states that:

The apparent nonrigid order of adjectives (where found) may have a number of explanations . . . when the lower of two adjectives that are rigidly ordered when in direct modification can also be used predicatively and can thus access the higher reduced clause source.

Essentially, Cinque asserts that the data presented by Truswell (2009) can be accounted for if the lower adjective in the hierarchy instead merges as an indirect modifier. For example, the order *wooden* > *red* (material > color) is not predicted by Cinque's hierarchy. Such an ordering would be analyzed as merging *wooden* in a (reduced) relative clause structure, while *red* is in a direct modification position. This proposal becomes problematic when we compare the order *wooden* > *red* to *big* > *wooden*: size modifiers obligatorily precede material ones. One way in which *wooden* can precede *big* is if *wooden* takes a focused interpretation. This is illustrated in (244a), and (244b) is for comparison purposes.

(244) a. a WOODEN big toy

b. a big wooden toy

Recall that Cinque claims that focus is a characteristic of an adjective in an indirect modification structure. Thus, the material adjective merges as a relative clause. However, it is unclear why *wooden* needs to be focused in (244), but it does not need the same focus

⁴³A further difference between the features on n and Sort is that in Hocak the features on n are strictly ordered and those on n in English are not. This is also accounted for under the feature stacking approach. It is possible that a language may have an order stack of features on head X, and another language does not. As far as English and Hocak are concerned, n in Hocak has an ordered stack of features and n in English does not. This can follow from the hypothesis that n in the two languages license two different classes of adjectival modifiers.

interpretation when it precedes *red* (see (236) above). If *wooden* were truly in indirect modification, we would predict the same level of focus. Since there is no focus necessary in the order *wooden* > *red*, I suggest that Truswell's data are still problematic for Cinque's strict hierarchy, and that the current approach offers a superior solution.⁴⁴

3.5.2 Adjective Ordering in Japanese

The present analysis can also straightforwardly account for adjective ordering in Japanese. Japanese has been typically described as a language that only uses indirect adjectival modification since adjectives have free ordering. This is illustrated in (245).

- (245) a. *chiisana shikakui ie*
 small square house
 'small square house'
- b. *shikakui chiisana ie*
 square small house
 'small square house' (Watanabe 2012:504)

In (245), the size adjective *chiisana* 'small' can either precede or follow the shape modifier *shikakui* 'square'. This is in contrast to languages like English that have restrictions on these two adjective classes: size adjectives must precede shapes ones (see (238)).

⁴⁴Moreover, if intersective adjectives in English always have the ability to access an indirect modification source, it is unclear why all prenominal adjective orderings are not grammatical. (i) illustrates the natural order of *big* and *yellow*: the car is yellow and is new. By comparison, (ii) means that the object that is being driven is a yellow one of his new cars. That is, there is strong emphasis on the first adjective (*yellow*), since it is inverted to appear before *new*. However, if an adjective like *yellow* can merge in an indirect modification position, it is not clear what would rule out another intersective adjective from merging above *yellow*. (iii) illustrates that such examples are completely ungrammatical. (The sequence *metal yellow* is not interpreted as a compound.)

- (i) He drove out his new yellow car.
- (ii) He drove out his yellow new car.
- (iii) * He drove out his metal yellow new car.

Like English, however, nationality/origin and material modifiers in Japanese must follow size adjectives, as shown by the contrasts in (246) and (247).⁴⁵

- (246) a. *chiisana ki-no hashi*
 small wood-GEN bridge
 ‘small wooden bridge’
- b. ?? *ki-no chiisana hashi*
 wood-GEN small bridge
 Intended: ‘small wooden bridge’ (Watanabe 2012:507)
- (247) a. *chiisana chuugoku-no kabin*
 small Chinese-GEN vase
 ‘small wooden vase’
- b. ?? *chuugoku-no chiisana kabin*
 Chinese-GEN small vase
 Intended: ‘small Chinese vase’ (Watanabe 2012:507)

Watanabe (2012) further observes that not only are material and nationality/origin modifiers ordered with respect to size ones, but they are ordered with respect to each other. Nationality/origin modifiers must appear before material ones. This is shown in (248) and (249), respectively.

- (248) a. *chiri-no ki-no kubikazari*
 Chile-GEN gold-GEN necklace
 ‘Chilean gold necklace’

⁴⁵Watanabe (2012) notes that the *ki-no* ‘wooden’ and *chuugoku-no* ‘Chinese’ can avoid the contrasts in (246) and (247) if there is a pause inserted after them. In (i), the pause is indicated by a comma. He suggests that the material and nationality/origin adjectives may undergo focus movement (cf. Scott 2002), and are thus preposed to a higher position in the DP-domain.

- (i) a. *ki-no_i, chiisana t_i hashi*
 wood-GEN small bridge
 ‘small wooden bridge’
- b. *chuugoku-no_i, chiisana t_i kabin*
 Chinese-GEN small vase
 ‘small Chinese vase’ (Watanabe 2012:507)

- b. * *ki-no* *chiri-no* *kubikazari*
 gold-GEN Chile-GEN necklace
 Intended: ‘Chilean gold necklace’ (Watanabe 2012:508)
- (249) a. *hokuoo-no* *ki-no* *isu*
 North.Europe-GEN wood-GEN chair
 ‘North European wooden chair’
- b. * *ki-no* *hokuoo-no* *isu*
 wood-GEN North.Europe-GEN chair
 Intended: ‘North European wooden chair’ (Watanabe 2012:504)

As seen above, *chiri-no* ‘Chilean’ has to appear to the left of *ki-no* ‘gold’ in (248), and *hokuoo-no* ‘North European’ must occupy a position before *chiisana* ‘small’ in (249). On this basis, Watanabe claims that there is indeed a direct modification hierarchy in Japanese.⁴⁶ Since the order of material and nationality/origin modifiers corresponds to the lowest part of Scott’s (2002) hierarchy, Watanabe proposes that these two classes of modifiers merge in the specifiers of functional projections in a direct modification structure, as schematized in (250) for (248a).

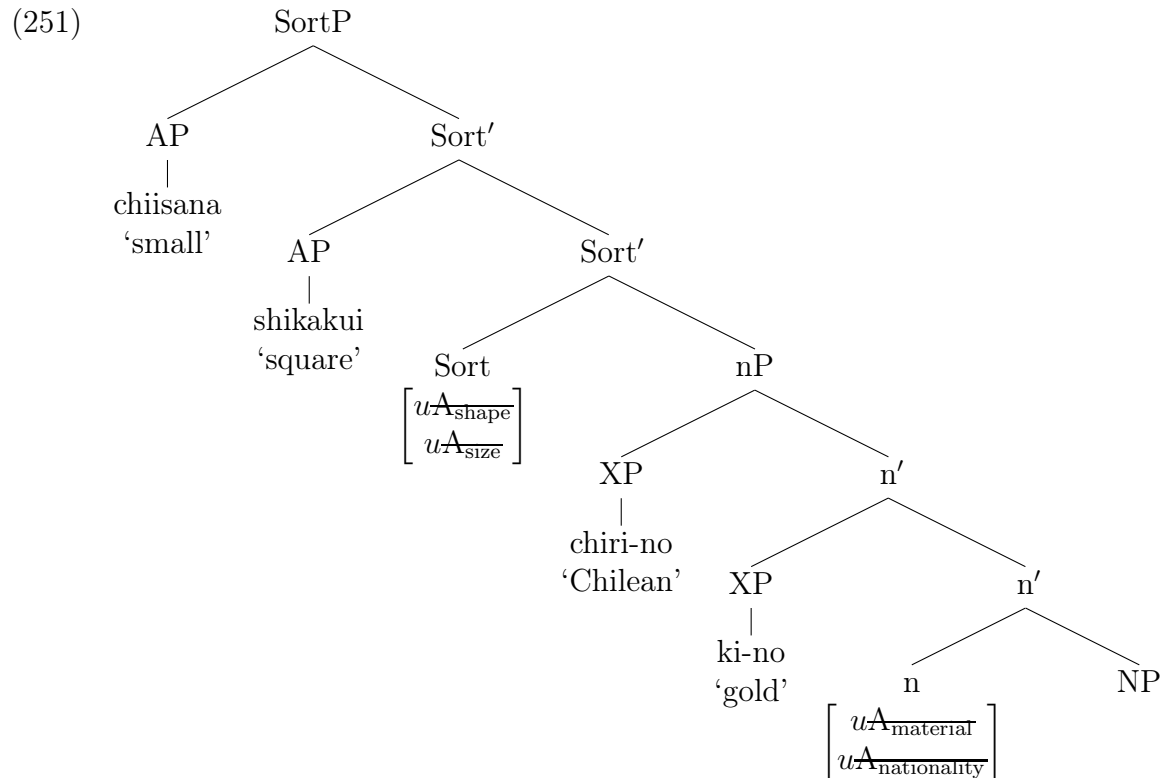
- (250) [_{F₁P} ‘Chilean’ F₁ [_{F₂P} ‘gold’ F₂ [_{NP} N]]]

On the other hand, Watanabe suggests that the unordered adjectives are indirect modifiers (cf. Sproat and Shih 1990). Since indirect modifiers are merged in the specifiers of higher projections, they are outside the domain of direct modification. Watanabe acknowledges that nothing prevents color, size, and shape adjectives from merging in a direct modification structure. However, he suggests that these adjectives typically merge in an indirect modification structure, where strict ordering is irrelevant.⁴⁷

⁴⁶Watanabe (2012:510) argues that nationality/origin and material modifiers are nouns since they merge in the NP-domain with the genitive case marker *-no*. I do not address this claim here. I refer to these two classes of modifiers in Japanese as “denominal.”

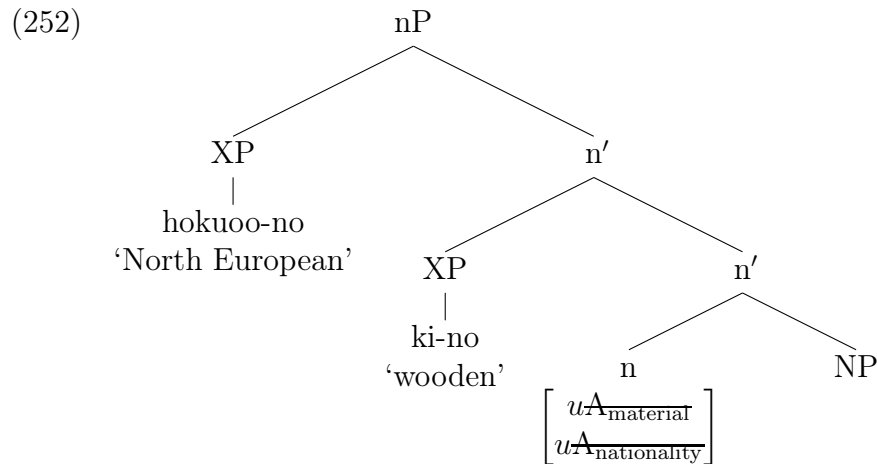
⁴⁷The precise nature of size, shape, and quality adjectives has been an open question in the Japanese literature; that is, whether these adjective classes can merge as APs. Yamakido (2000, 2005) argues that

The analysis presented in section 3.4 for Hocak can easily be extended to these Japanese data. The basic structure I present for Japanese is shown in (251).

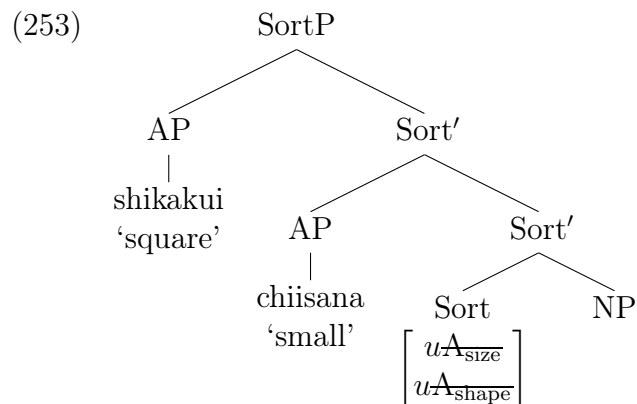


The present analysis predicts that there will be a divide in adjective classes. This prediction is also borne out in Japanese. Like Hocak, material and nationality/origin modifiers are triggered by *n*. Thus, they merge closer to the noun than other modifiers. Also parallel to Hocak, these modifiers are strictly ordered. This particular ordering is encoded by the features on *n*, which are stacked in the order $[uA_{\text{material}}] > [uA_{\text{nationality}}]$ so that the surface order is nationality/origin > material, as shown in (252).

such adjectives are APs, while Baker (2003a,b) presents an opposing view. Baker claims that they are always in relative clauses. Shimoyama (2014) also provides evidence from the scope of superlative adjectives that suggest that Japanese adjectives are in direct modification. In this section, I am not following Baker (2003a,b) due to the arguments that Yamakido and Shimoyama make.



Shape and size modifiers, on the other hand, are merged in multiple specifiers of SortP, as they are triggered by features on Sort. The features on Sort are unordered (cf. Hocak). This means that the features that trigger size and shape modifiers can be organized as either $[uA_{\text{shape}}] > [uA_{\text{size}}]$ or $[uA_{\text{size}}] > [uA_{\text{shape}}]$. This second option is depicted in (253).



Recall from above that I argued that lack of ordering of adjectival modifiers is not necessarily indicative of indirect modification (i.e., adjectives as predicates in relative clauses). In particular, I showed that even though postnominal adjectives in Hocak are unordered, they behave like APs with respect to their syntax and semantics. I claimed that their free ordering is due to Sort not having a set of strictly ordered features. We can apply the same analysis to the Japanese data. If the features on Sort are not rigidly ordered, then size and shape adjectives are able to merge in Spec,SortP in either order. This analysis removes the

issue that Watanabe (2012) faces: size and shape adjectives in Japanese are not unordered because they are in relative clauses; rather they lack a rigid ordering because the feature stack on Sort is not rigidly ordered. Thus, the notion that lack of ordering indicates indirect modification, as adopted by Watanabe (2012), does not really diagnose the origin of a DP-internal modifier. I have suggested that there is another means to analyze these data.

This proposal is not necessarily an objection to an analysis according to which Japanese size and shape adjectives are in relative clauses. As far as the present analysis is concerned, nothing would prevent these adjective classes from merging as relative clauses. The purpose of this section is to show that the analysis of adjective ordering for Hocak is immediately extendable to Japanese, and that one does not have to assume that unordered adjectives necessitate an indirect modification structure.

To summarize, the present analysis can be extended to two more languages: English and Japanese. The proposal yields the correct word order generalizations for English (see Truswell 2009). The analysis advocated for in this section also accommodates the Japanese data, and it suggests that size and shape adjectives do not have to be in relative clauses in order to produce free word order. These two languages also demonstrated another aspect that the current account predicts. Languages will often have a divide in adjective classes. English has a semantic divide between intersective and subsective adjectives. Japanese has the same divide that Hocak has: denominal adjectives versus non-denominal adjectives. I would like to emphasize, however, that the patterns of adjective orderings are not the only ones that are possible. There are numerous conceivable possibilities for splits among adjective classes. I suggest that Universal Grammar is capable of other variations based on semantic or morphosyntactic properties. While I suspect that the two divisions seen in English and Hocak/Japanese are the most common, there are most likely others.

3.6 Conclusion

In this chapter, I used Hocak as a case study and presented a new account of adjective ordering. In particular, I proposed that adjectives are licensed by features on functional heads (cf. Cinque 2010); however, multiple features can stack on a single functional head. I posited two functional heads that license adjectives: *n* and *Sort*. The feature content of each head is language-specific. In cases where adjectives are strictly ordered, the features on a head are ordered. On the other hand, when adjectives have free ordering, the feature stack is not strictly ordered. Thus, one of the main claims made in this chapter is that free orderings are not necessarily indicative of a relative clause structure, contra Cinque (2010).

Moreover, I showed that adjective orders can be constrained through each functional head. The *n* head triggers the merger of denominal adjectives, and *Sort* triggers non-denominal adjectives, as is the case in Hocak. This allows for denominal adjectives to be prenominal, while adjectives licensed by *Sort* are postnominal. A similar pattern was noted in Japanese: *Sort* licenses non-denominal adjectives, and *n* denominal ones (cf. Watanabe 2012). By comparison, English adjectives are not organized by their morphosyntax, but by their semantics: *Sort* triggers the merger of subsecutive adjectives and *n* licenses intersective ones (see Truswell 2009).

I posit that languages will make divisions or splits between adjective classes based on their morphosyntax or semantics. This cross-linguistic variation is due to the information contained in functional heads is different from language to language (Borer 1984).

3.7 Appendix: More Examples of Adjective Orders in Hocak

Here, I present more examples of adjective orders in Hocak. These examples rely on the semantic classes used by Scott's (2002) hierarchy, which is repeated in (254) from (175b).

(254) *Hierarchy of AP-related functional projections for nominals (Scott 2002)*

Determiner > ordinal number > cardinal number > subjective comment > ?evidential
 > size > length > height > speed > ?depth > width > weight > temperature >
 ?wetness > age > shape > color > nationality/origin > material > compound element
 > NP

(255) **perejk** 'thin'; **šuuc** 'red'

- a. Meredithga maḡassuksik šuuc perejkra ruwɿ.
 Meredith-ga maḡassuksik šuuc perejk-ra Ø-ruwɿ
 Meredith-PROP wire red thin.DIM-DEF 3S-buy
 'Meredith bought the thin red wire.' ('red' > 'thin')
- b. Meredithga maḡassuksik perejk šuucra ruwɿ.
 Meredith-ga maḡassuksik perejk šuuc-ra Ø-ruwɿ
 Meredith-PROP wire thin.DIM red-DEF 3S-buy
 'Meredith bought the thin red wire.' ('thin' > 'red')

(256) **serec** 'long'; **šuuc** 'red'

- a. Matejaga wiiwagax serec šuucra honačšana.
 Mateja-ga wiiwagax serec šuuc-ra Ø-honačšana
 Mateja-PROP pencil long red-DEF 3S-borrow-DECL
 'Mateja borrowed the long red pencil.' ('long' > 'red')
- b. Matejaga wiiwagax šuuc serecra honačšana.
 Mateja-ga wiiwagax šuuc serec-ra Ø-honačšana
 Mateja-PROP pencil red long-DEF 3S-borrow-DECL
 'Mateja borrowed the long red pencil.' ('red' > 'long')

(257) **serec ‘long’; xete ‘big’**

- a. Bryanga šųųk serec xetera haja.
 Bryan-ga šųųk serec xete-ra Ø-haja
 Bryan-PROP dog long big-DEF 3S-see
 ‘Bryan saw the big long dog.’ (‘long’ > ‘big’)
- b. Bryanga šųųk xete serecra haja.
 Bryan-ga šųųk xete serec-ra Ø-haja
 Bryan-PROP dog big long-DEF 3S-see
 ‘Bryan saw the big long dog.’ (‘big’ > ‘long’)

(258) **suuksik ‘thin’; xete ‘big’**

- a. Sarahga waaruc suuksik xetera gistakšąą.
 Sarah-ga waaruc suuksik xete-ra Ø-gistak-šąą
 Sarah-PROP table thin big-DEF 3S-hit-DECL
 ‘Sarah hit the thin big table.’ (‘thin’ > ‘red’)
- b. Sarahga waaruc xete suuksikra gistakšąą.
 Sarah-ga waaruc xete suuksik-ra Ø-gistak-šąą
 Sarah-PROP table big thin-DEF 3S-hit-DECL
 ‘Sarah hit the thin big table.’ (‘red’ > ‘thin’)

(259) **poroporo ‘round’; rookši ‘deep’**

- a. Hunterga hopox poroporo rookšira ųų.
 Hunter-ga hopox poroporo rookši-ra Ø-ųų
 Hunter-PROP hole round deep-DEF 3S-make
 ‘Hunter made the deep round hole.’ (‘round’ > ‘deep’)
- b. Hunterga hopox rookši poroporora ųų.
 Hunter-ga hopox rookši poroporo-ra Ø-ųų
 Hunter-PROP hole deep round-DEF 3S-make
 ‘Hunter made the deep round hole.’ (‘deep’ > ‘round’)

(260) **saagre ‘fast’; xete ‘big’; zii ‘brown’**

- a. Bryanga šųųk zii saagre xetera haja.
 Bryan-ga šųųk zii saagre xete-ra Ø-haja
 Bryan-PROP dog brown fast big-DEF 3S-see
 ‘Bryan saw the big fast brown dog.’ (‘brown’ > ‘fast’ > ‘big’)
- b. Bryanga šųųk saagre zii xetera haja.
 Bryan-ga šųųk saagre zii xete-ra Ø-haja
 Bryan-PROP dog fast brown big-DEF 3S-see
 ‘Bryan saw the big fast brown dog.’ (‘fast’ > ‘brown’ > ‘big’)
- c. Bryanga šųųk zii xete saagrera haja.
 Bryan-ga šųųk zii xete saagre-ra Ø-haja
 Bryan-PROP dog brown big fast-DEF 3S-see
 ‘Bryan saw the big fast brown dog.’ (‘brown’ > ‘big’ > ‘fast’)
- d. Bryanga šųųk xete saagre ziira haja.
 Bryan-ga šųųk xete saagre zii-ra Ø-haja
 Bryan-PROP dog big fast brown-DEF 3S-see
 ‘Bryan saw the big fast brown dog.’ (‘big’ > ‘fast’ > ‘brown’)
- e. Bryanga šųųk saagre xete ziira haja.
 Bryan-ga šųųk saagre xete zii-ra Ø-haja
 Bryan-PROP dog fast big brown-DEF 3S-see
 ‘Bryan saw the big fast brown dog.’ (‘fast’ > ‘big’ > ‘brown’)
- f. Bryanga šųųk xete zii saagrera haja.
 Bryan-ga šųųk xete zii saagre-ra Ø-haja
 Bryan-PROP dog big brown fast-DEF 3S-see
 ‘Bryan saw the big fast brown dog.’ (‘big’ > ‘brown’ > ‘fast’)

(261) **tooke ‘wet’; poroporo ‘round’; xųųųk ‘small’**

- a. Sarahga waaruc poroporo xųųųk tookera rusge.
 Sarah-ga waaruc poroporo xųųų-ik tooke-ra Ø-rusge
 Sarah-PROP table round small-DIM wet-DEF 3S-clean
 ‘Sarah cleaned the wet small round table.’ (‘round’ > ‘small’ > ‘wet’)

- b. Sarahga waaruc xunuḡik poroporo tookera rusge.
 Sarah-ga waaruc xunuḡ-ḡk poroporo tooke-ra Ø-rusge
 Sarah-PROP table small-DIM round wet-DEF 3S-clean
 ‘Sarah cleaned the wet small round table.’ (‘small’ > ‘round’ > ‘wet’)
- c. Sarahga waaruc xunuḡik tooke poroporora rusge.
 Sarah-ga waaruc xunuḡ-ḡk tooke poroporo-ra Ø-rusge
 Sarah-PROP table small-DIM wet round-DEF 3S-clean
 ‘Sarah cleaned the wet small round table.’ (‘small’ > ‘wet’ > ‘round’)
- d. Sarahga waaruc tooke poroporo xunuḡikra rusge.
 Sarah-ga waaruc tooke poroporo xunuḡ-ḡk-ra Ø-rusge
 Sarah-PROP table wet round small-DIM-DEF 3S-clean
 ‘Sarah cleaned the wet small round table.’ (‘wet’ > ‘round’ > ‘small’)
- e. Sarahga waaruc poroporo tooke xunuḡikra rusge.
 Sarah-ga waaruc poroporo tooke xunuḡ-ḡk-ra Ø-rusge
 Sarah-PROP table round wet small-DIM-DEF 3S-clean
 ‘Sarah cleaned the wet small round table.’ (‘round’ > ‘wet’ > ‘small’)
- f. Sarahga waaruc tooke xunuḡik poroporora rusge.
 Sarah-ga waaruc tooke xunuḡ-ḡk poroporo-ra Ø-rusge
 Sarah-PROP table wet small-DIM round-DEF 3S-clean
 ‘Sarah cleaned the wet small round table.’ (‘wet’ > ‘small’ > ‘round’)

(262) š’aak ‘old’; saagre ‘fast’; sgigre ‘heavy’

- a. Cecilga waḡatire š’aak saagre sgigrera ruwḡ.
 Cecil-ga waḡatire š’aak saagre sgigre-ra Ø-ruwḡ
 Cecil-PROP car old fast heavy-DEF 3S-buy
 ‘Cecil bought the heavy fast old car.’ (‘old’ > ‘fast’ > ‘heavy’)
- b. Cecilga waḡatire saagre š’aak sgigrera ruwḡ.
 Cecil-ga waḡatire saagre š’aak sgigre-ra Ø-ruwḡ
 Cecil-PROP car fast old heavy-DEF 3S-buy
 ‘Cecil bought the heavy fast old car.’ (‘fast’ > ‘old’ > ‘heavy’)
- c. Cecilga waḡatire š’aak sgigre saagrera ruwḡ.
 Cecil-ga waḡatire š’aak sgigre saagre-ra Ø-ruwḡ
 Cecil-PROP car old heavy fast-DEF 3S-buy
 ‘Cecil bought the heavy fast old car.’ (‘old’ > ‘heavy’ > ‘fast’)

- d. Cecilga wažatire sgigre saagre š'aakra ruwĭ.
 Cecil-ga wažatire sgigre saagre š'aak-ra Ø-ruwĭ
 Cecil-PROP car heavy fast old-DEF 3S-buy
 'Cecil bought the heavy fast old car.' ('heavy' > 'fast' > 'old')
- e. Cecilga wažatire saagre sgigre š'aakra ruwĭ.
 Cecil-ga wažatire saagre sgigre š'aak-ra Ø-ruwĭ
 Cecil-PROP car fast heavy old-DEF 3S-buy
 'Cecil bought the heavy fast old car.' ('fast' > 'heavy' > 'old')
- f. Cecilga wažatire sgigre š'aak saagrera ruwĭ.
 Cecil-ga wažatire sgigre š'aak saagre-ra Ø-ruwĭ
 Cecil-PROP car heavy old fast-DEF 3S-buy
 'Cecil bought the heavy fast old car.' ('heavy' > 'old' > 'fast')

Chapter 4

Superlative Phrases in Hocak

4.1 Introduction

In this chapter, I argue that Hocak superlative phrases are nominal, and that the head noun that the superlative AP modifies is elided. While superlative phrases appear to be in predicative position, I argue instead that they are in attributive position. Consider the example of the superlative phrase *hoxetexjira* ‘the biggest’ in (263).⁴⁸ The adjective *xete* ‘big’ has the superlative morpheme *ho-* ... *-xji*, and it is also marked by the definite determiner *-ra*.

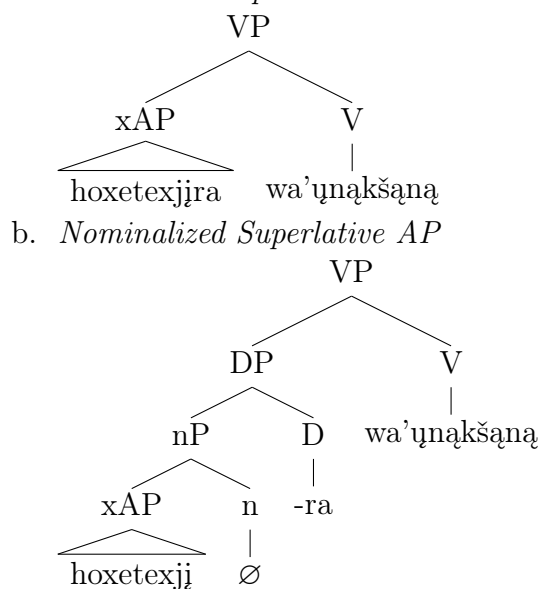
- (263) Wijukra hoxetexjira wa’uṇakšana.
 wujuk-ra ho-xete-xji-ra Ø-wa’u-nak-šana
 cat-DEF SUP-big-SUP-DEF 3S-AUX-POS.NEUT-DECL
 ‘The cat is the biggest.’

Previous approaches to superlative phrases divide into three camps. One claims that superlative phrases in predicative environments are APs with a degree phrase (see e.g.,

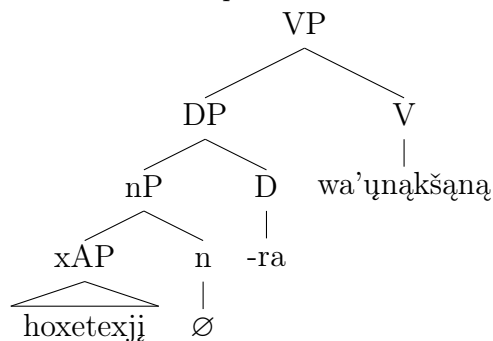
⁴⁸In this chapter, I follow Matushansky’s (2008) notation: the label “x” before AP, as in “xAP,” is used when the exact projection of the phrase is irrelevant. The term “superlative xAP” refers to the adjective with superlative morphology, whereas “superlative phrase” denotes the noun phrase that contains the superlative xAP.

Bowers 1987).⁴⁹ The second argues that superlative phrases are nominalized adjectives (see e.g., Giannakidou and Stavrou 1999, Borer and Roy 2005, Roy 2010, and Alexiadou 2013).⁵⁰ The third claims that superlative phrases are APs inside an NP headed by an elided N (Ross 1964, Matushansky 2008). In this chapter, I will provide evidence that superlative phrases in Hocak are best analyzed along the lines of an ellipsis account: the superlative AP in attributive position modifies an elided head noun. The three possible approaches for analyzing (263) are outlined in (264):

(264) a. *Predicative Superlative AP*

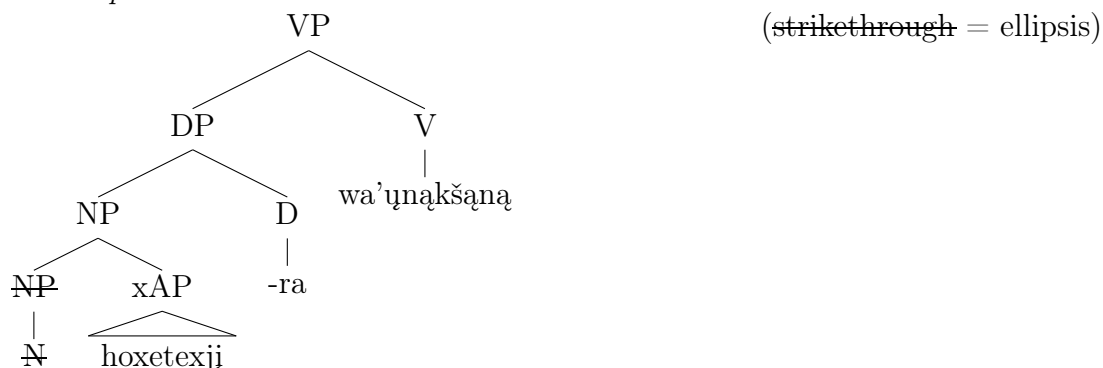


b. *Nominalized Superlative AP*



⁴⁹In (264a), the degree phrase dominates the AP; however, the degree phrase could also be in the specifier of the AP. Moreover, it is unclear under this view where the definite determiner comes from.

⁵⁰In (264b), I present a structure where “little n” is the nominalizer. It is possible that a determiner (D) is the nominalizer.

c. *NP-ellipsis*

I present new data from superlative adjectives in Hocak and show that they provide strong evidence for the attributive nature of superlatives cross-linguistically. In Hocak, superlatives that appear to be in predicative environments systematically pattern with nominals. The nominal behavior of Hocak superlatives is not predicted by the standard account where superlatives are APs. The data from Hocak superlatives show that the superlative adjective can appear with a head noun, which is not expected if superlatives were nominalized phrases.

I argue that an account according to which superlative adjectives attributively modify an elided head noun best accounts for the Hocak facts. I follow a derivational theory of ellipsis (Aelbrecht 2010) and assume that D is the licensing head of NP-ellipsis (Lobeck 1995). Under such an account, ellipsis is triggered because of an Agree relation between the licensing head and an [E]-feature (i.e., ellipsis feature), and ellipsis occurs as soon as the licensing head is merged. I show that the facts concerning superlative adjectives parallel the facts concerning nouns with NP-ellipsis with bare adjectival remnants.

In this chapter, I present an analysis that captures the external distribution of Hocak superlative phrases. It has been observed that superlatives cross-linguistically can have either an absolute or comparative reading (see Szabolcsi 1986 and Heim 1999). The absolute reading has a “more X than all others” interpretation, whereas the comparative reading contrasts two sets of individuals in a particular context. My analysis does not address the various interpretations that superlatives have been noted to have cross-linguistically. I focus

on the generalizations concerning the syntax of the absolute reading.

The rest of this chapter is laid out as follows. Section 4.2 provides background on superlatives in Hocak. In section 4.3, I present data in favor of analyzing superlative APs as attributive. I show that superlatives behave like nominals in argument and predicate positions. In section 4.4, I give evidence that superlative adjectives are not nominalized APs. Then, in section 4.5, I present an analysis that accounts for the external distribution of superlative phrases in Hocak. I propose that the head noun is elided, and that the superlative adjective is stranded as a result. Section 4.6 concludes the chapter.

4.2 Superlatives in Hocak

This section provides the basic data concerning superlative phrases in Hocak. Recall from chapter 2 (section 2.3.3) that Hocak superlatives are formed with the morpheme *ho-...-xji*, as in (265). The superlative morpheme *ho-...-xji* has the meaning “more X than all others.” The sentence in (265) is true if and only if the subject *Cecil* climbed Mount Everest.

- (265) Cecilga xeexete hohaakšixjira hoti.
 Cecil-ga xee-xete ho-haakši-xji-ra Ø-hoti
 Cecil-PROP hill-big SUP-high-SUP-DEF 3S-climb
 ‘Cecil climbed the highest mountain (i.e., Mount Everest).’

This superlative phrase has the so-called “absolute” reading (see Szabolcsi 1986). Another possible reading with superlatives is “comparative” (contextual). Comparative superlative readings are weaker in that the comparison set is individuals. For instance, the comparative reading of the English translation in (265) would be “Cecil climbed a mountain higher than (the mountains) everyone else climbed.” The superlative in example (265) lacks this comparative reading.⁵¹

⁵¹The previous literature agrees that the absolute and comparative readings are the result of different constraints or syntax. Heim (1999) and Szabolcsi (1986) propose that the two readings are obtained through

In addition, superlative xAPs like *hohqakšixji* ‘highest’ in (266) must be interpreted non-intersectively. Heim (1999) and Matushansky (2008) note that the adjective *highest* in English also only has the non-intersective interpretation.

(266) Cecilga xeexete hohqakšixjira hoti. ‘Cecil climbed the highest mountain.’

- a. = the unique x such that x is the highest among mountains
- b. ≠ the unique x such that x is the highest and x is a mountain

A superlative phrase is available in argument position either with or without an overt head noun. In (267), the superlative phrase is in subject position, whereas in (268) it is in object position. Note that the realization of the head noun is optional in both (267) and (268).

- (267) a. Hosaagrexjira hohi kjane.
 ho-saagre-xji-ra Ø-hohi kjane
 SUP-fast-SUP-DEF 3S-win FUT
 ‘The fastest will win.’
- b. **Waqak** hosaagrexjira hohi kjane.
 waqak ho-saagre-xji-ra Ø-hohi kjane
 man SUP-fast-SUP-DEF 3S-win FUT
 ‘The fastest man will win.’
- (268) a. Sarahga howat’akxjira roogu.
 Sarah-ga ho-wat’ak-xji-ra Ø-roogu
 Sarah-PROP SUP-cheap-SUP-DEF 3S-want
 ‘Sarah wants the cheapest.’

covert movement of the degree operator, whereas Farkas and É. Kiss (2000) have claimed that the degree operator does not need to move (cf. Matushansky 2008). A third reading has been observed by Pancheva and Tomaszewicz (2012) (see also Shen 2014). In this reading, the comparison class of (265) is mountains that Cecil has climbed. The possible readings of superlatives in Hocak are not intended to be the subject of this chapter, and I leave them aside here. Instead, I focus on the syntax of the construction.

- b. Sarahga **wažatire** howat'akxjira roogu.
 Sarah-ga wažatire ho-wat'ak-xji-ra Ø-roogu
 Sarah-PROP car SUP-cheap-SUP-DEF 3S-want
 'Sarah wants the cheapest car.'

Example (269a) shows an example of a superlative phrase in an apparent predicative environment, while (269b) demonstrates that an apparent predicative superlative phrase can also appear with an overt noun.

- (269) a. Henryga hosaagrexjira wa'unaḱšana.
 Henry-ga ho-saagre-xji-ra Ø-wa'u-naḱ-šana
 Henry-PROP SUP-fast-SUP-DEF 3S-AUX-POS.NEUT-DECL
 'Henry is the fastest.'
- b. Henryga **waḱḱ** hosaagrexjira wa'unaḱšana.
 Henry-ga waḱḱ ho-saagre-xji-ra Ø-wa'u-naḱ-šana
 Henry-PROP man SUP-fast-SUP-DEF 3S-AUX-POS.NEUT-DECL
 'Henry is the fastest man.'

All of the superlative phrases above appear with the definite determiner. However, demonstratives can also appear with superlatives. Examples (270) and (271) show that a demonstrative can take the place of *-ra*. In (270), the superlative xAP with a demonstrative is in an argument position, while (271) demonstrates that a superlative adjective is possible with a demonstrative in apparent predicative position.

- (270) a. Cecilga xeexete hohaḱḱsixjinaḱa hoti.
 Cecil-ga xee-xete ho-haḱḱši-xji-naḱa Ø-hoti
 Cecil-PROP hill-big SUP-high-SUP-DEM.NEUT 3S-climb
 'Cecil climbed that highest mountain (over there).'
- b. Cecilga xeexete hohaḱḱsixjiḱ hoti.
 Cecil-ga xee-xete ho-haḱḱši-xji-ḱ Ø-hoti
 Cecil-PROP hill-big SUP-high-SUP-DEM.HOR 3S-climb
 'Cecil climbed that highest mountain (there).'

- c. Cecilga xeexete hohaakšixjjeega hoti.
 Cecil-ga xee-xete ho-haakši-xji-jeega Ø-hoti
 Cecil-PROP hill-big SUP-high-SUP-DEM.VERT 3S-climb
 ‘Cecil climbed that highest mountain (there).’
- (271) a. Henryga hosaagrexjinağa wa’unağšanağ.
 Henry-ga ho-saagre-xji-nağa Ø-wa’u-nağ-šanağ
 Henry-PROP SUP-fast-SUP-DEM.NEUT 3S-AUX-POS.NEUT-DECL
 ‘Henry is that fastest (there).’
- b. Henryga **wağak** hosaagrexjinağa wa’unağšanağ.
 Henry-ga wağak ho-saagre-xji-nağa Ø-wa’u-nağ-šanağ
 Henry-PROP man SUP-fast-SUP-DEM.NEUT 3S-AUX-POS.NEUT-DECL
 ‘Henry is that fastest man (there).’

Heim (1999) assumes that superlative phrases are definite since the semantics of the superlative morpheme presupposes uniqueness. Instead, I follow Matushansky (2008) and assume that the definite determiner is not part of the superlative morpheme; that is, the definite article is “vacuous or superfluous” in superlative phrases (p. 62). I will argue that the presence of *-ra* and demonstratives is due to the fact the superlative phrase has a nominal head.

Recall from chapter 2 that the superlative morpheme *ho-...-xji* is unable to modify verbs and nouns. This restriction is typical of degree phrases (see chapter 2, section 2.3 for more discussion; cf. Baker 2003a). Example (272a) shows the superlative morpheme cannot combine with an unergative (active) verb, while (272b) illustrates the incompatibility with an unaccusative (stative) verb. In (273), we see that a noun cannot combine with superlative morphology.

- (272) a. *Bryanga howašixjira wa’ujee.
 Bryan-ga ho-waši-xji-ra Ø-wa’u-jee
 Bryan-PROP SUP-dance.ACT-SUP-DEF 3S-AUX-POS.VERT
 Intended: ‘Bryan is dancing the hardest/ the best.’

- b. * Hunterga hošiibrexjjra wa'ujee.
 Hunter-ga ho-šiibre-xjj-ra Ø-wa'ujee
 Hunter-PROP SUP-fall.STAT-SUP-DEF 3S-AUX-POS.VERT
 Intended: 'Hunter is falling the hardest/ the best.'
- (273) * Cecilga howaąkxjjra wa'ujee.
 Cecil-ga ho-waąk-xjj-ra Ø-wa'ujee
 Cecil-PROP SUP-man-SUP-DEF 3S-AUX-POS.VERT
 Intended: 'Cecil is the manest.' (cf. 'Cecil is the manliest.')

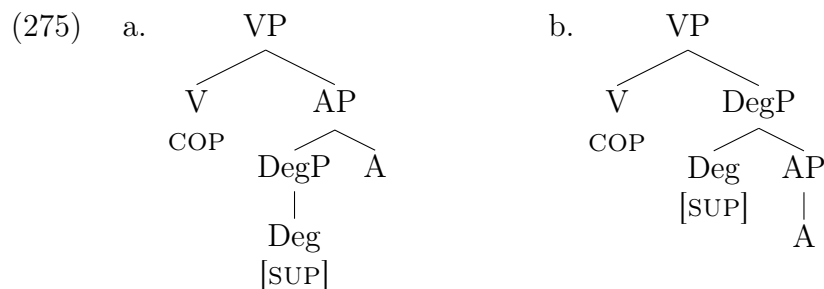
Thus, *ho-...-xjj* has a semantic effect compatible with superlatives, and its distribution is limited to adjectives. I conclude that Hocak superlatives are consistent with the characteristics of degree modifiers cross-linguistically. In the next section, I provide a number of arguments that indicate that the superlative adjective in Hocak is in an attributive position.

4.3 Superlatives Are Not Predicative Adjectives

Adjectives cross-linguistically have two basic syntactic positions: they can merge in an NP-internal position as attributive adjectives, or they can be predicative. Like other adjective phrases, the superlative adjective *whitest* in (274) can appear in attributive and predicative environments.

- (274) a. Meredith bought the **whitest** book. (Attributive)
 b. This book is the **whitest**. (Predicative)

The standard view argues that superlatives are a “subkind” of adjective. Specifically, superlatives in predicative environments are either APs with a degree phrase in specifier position (see e.g., Jackendoff 1977, Bhatt and Pancheva 2004), or APs that are dominated by a degree phrase (see e.g., Bowers 1987, Corver 1997). Each possibility is depicted below in (275) with the position of the subject removed for simplicity.



The main problem with this view is the fact that superlatives appear with a definite article (as in (276) below). The presence of a determiner suggests that the superlative is nominal in some way: either it is nominalized (e.g., through a null affix) or the head noun has been elided.

(276) This story is the best.

The presence of the determiner *-ra* in Hocak is also problematic for this view. Below I provide other evidence that superlatives in Hocak are not predicative APs.

4.3.1 Stacking of Adjectives

The first piece of evidence that superlatives are attributive comes from adjective “stacking.” Recall from chapter 2 (section 2.2.3) and chapter 3 (section 3.4.2) that Hocak exhibits NP-ellipsis. In (277), the head noun of the second conjunct has been elided, stranding the adjective *kerekereš* ‘spotted’.

- (277) Meredithga wijuk kirikirišra ruwɨ anaga Bryanga ~~wijuk~~ kerekerešra
 Meredith-ga wijuk kirikiriš-ra Ø-ruwɨ anaga Bryan-ga wijuk kerekereš-ra
 Meredith-PROP cat striped-DEF 3S-buy and Bryan-PROP woman spotted-DEF
 ruwɨ.
 Ø-ruwɨ
 3S-buy
 ‘Meredith bought the striped cat and Bryan bought the spotted (cat).’

Examples (278a) and (b) show that it is possible for two adjectives to modify an elided noun. In (278a), the adjectives *kirikiriš* ‘spotted’ and *xete* ‘big’ modify the elided noun *wijuk* ‘cat’,

whereas in (278b), *šuuc* ‘red’ and *xete* ‘big’ are remnant adjectives of the elided noun *wağiği* ‘ball’.

- (278) a. Matejaga wijuk kirikiriš xetera ruwı anaga Sarahga ~~wijuk~~
 Mateja-ga wijuk kirikiriš xete-ra Ø-ruwı anaga Sarah-ga wijuk
 Mateja-PROP cat striped big-DEF 3S-buy anaga Sarah-PROP cat
 kerekereš xetera ruwı.
 kerekereš xete-ra Ø-ruwı
 spotted big-DEF 3S-buy
 ‘Mateja bought the big striped cat and Sarah bought the big spotted (cat).’
- b. Meredithga wağiği šuuc xunura ruwı anaga Bryanga ~~wağiği~~ šuuc
 Meredith-ga wağiği šuuc xunı-ra Ø-ruwı anaga Bryan-ga wağiği šuuc
 Meredith-PROP ball red small-DEF 3S-buy and Bryan-PROP ball red
 xunura ruwı.
 xunı-ra Ø-ruwı
 small-DEF 3S-buy
 ‘Meredith bought the small red ball and Bryan bought the small red (ball).’

Additional adjectives, such as *šuuc* ‘red’ and *poroporo* ‘round’ in (279), may also appear with a predicative superlative xAP. In contrast, (280) demonstrates that adjectives in predicative position cannot be modified by another adjective. Matushansky (2008) shows that cross-linguistically, adjectives cannot modify other adjectives. Since (279) patterns with (278), I suggest that both the adjective and the superlative xAP in (279) are modifying a null noun.

- (279) a. Wijuk že’e šuuc hoxetexjira wa’unağšana.
 wijuk že’e šuuc ho-xete-xji-ra Ø-wa’u-nağ-šana
 cat that red SUP-big-SUP-DEF 3S-AUX-POS.NEUT-DECL
 ‘That cat is the biggest red one.’
- b. Wağiği že’e poroporo hoceekxjira wa’unağšana.
 wağiği že’e poroporo ho-cek-xji-ra Ø-wa’u-nağ-šana
 ball that round SUP-new-SUP-DEF 3S-AUX-POS.NEUT-DECL
 ‘That ball is the newest round one.’

- (280) a. *Wijuk že'e šuuc xete.
 wijuk že'e Ø-šuuc Ø-xete
 cat that 3S-red 3S-big
 Intended: 'That cat is big (and) red.'
- b. *Wağjǵi že'e poroporo ceekšana.
 wağjǵi že'e Ø-poroporo Ø-ceek-šana
 ball that 3S-round 3S-new-DECL
 Intended: 'That ball is round (and) new.'

4.3.2 Superlatives Pattern with Nominals

Here, I show that superlative xAPs in Hocak pattern with nouns in predicative environments. Hocak has a variety of copular auxiliaries. Here, I focus on two of them: *here* 'be' and *wa'y-* 'AUX'. The verb *here* 'be' is a copula with roughly the same distribution as the copular verb *be* in English; however, *here* 'be' cannot occur with adjectives (see below). In chapter 2, I argued that the copula is spelled out differently depending on the categorial status of the copula's complement. When the copula takes a nominal complement, it is spelled out as *here*. When the copula takes an adjectival complement, it is spelled out as null. The two vocabulary items for the copula are shown in (281) (from chapter 2, section 2.4.2).

- (281) a. Ø ↔ copula / Adjective__
 b. *here* ↔ copula / Noun__

On the other hand, *wa'y-* appears with a set of elements traditionally called "positionals," which describe what position the subject is in (e.g., sitting, standing, or lying down). All three positionals are outlined in Table 11 (repeated from Table 7 in chapter 1, section 1.2.3). I suggest that positionals realize a functional head, such as T (or Infl).⁵² I hypothesize that

⁵²Ritter and Wiltschko (2014) argue that Infl can have language-specific content. They propose that Infl in Halkomelem (Salish) is specified for location. For the purposes here, I extend this analysis to Hocak positionals.

since *wa'y-* does not appear without a positional, it is a copula that is inserted in order to support inflectional material (cf. Bjorkman 2011).

Table 11
Positionals in Hocak

Position	Morpheme
Standing	-jee
Sitting (neutral)	-nək
Lying down/moving	-ək

Below, I compare the behavior of superlative phrases to nouns and adjectives in the environments of *here* and *wa'y-*.

Predicative nouns in Hocak require the presence of either *here* or *wa'y-*. In contrast, predicative adjectives do not require such support. In (282), the predicative noun *wagax haja* ‘student’ must appear with *wa'y-*. The adjective *sgigre* ‘heavy’ can appear with *wa'y-* in (283a); however, it is not required, as in (283b).

- (282) a. Sarahga wagax hajahižə wa'ɯnəkšəŋə.
 Sarah-ga wagax haja-hižə Ø-wa'ɯ-nək-šəŋə
 Sarah-PROP student-INDEF 3S-AUX-POS.NEUT-DECL
 ‘Sarah is a student.’

- b. *Sarahga wagax hajahižə.
 Sarah-ga wagax haja-hižə
 Sarah-PROP student-INDEF
 Intended: ‘Sarah is a student.’

- (283) a. Wijukra sgigre wa'ɯnəkšəŋə.
 wijuk-ra sgigre Ø-wa'ɯ-nək-šəŋə
 cat-DEF heavy 3S-AUX-POS.NEUT-DECL
 ‘The cat is heavy.’

- b. Wijukra sgigre.
 wijuk-ra Ø-sgigre
 cat-DEF 3S-heavy
 ‘The cat is heavy.’

The examples in (284) and (285) show that predicative superlatives, like predicative nouns, also necessitate the presence of a copular auxiliary. This restriction applies to both i- and s-level predicates, as illustrated in (284) and (285), respectively.

- (284) a. Wijukra hoxetexjjira wa’unaḱṣana.
 wijuk-ra ho-xete-xji-ra Ø-wa’u-naḱ-ṣana
 cat-DEF SUP-big-SUP-DEF 3S-AUX-POS.NEUT-DECL
 ‘The cat is the biggest.’
- b. *Wijukra hoxetexjjira.
 wijuk-ra ho-xete-xji-ra
 cat-DEF SUP-big-SUP-DEF
 Intended: ‘The cat is the biggest.’
- (285) a. Bryanga hotookewexjjira wa’unaḱṣana.
 Bryan-ga ho-tookewe-xji-ra Ø-wa’u-naḱ-ṣana
 Bryan-PROP SUP-hungry-SUP-DEF 3S-AUX-POS.NEUT-DECL
 ‘Bryan is the hungriest.’
- b. *Bryanga hotookewexjjira.
 Bryan-ga ho-tookewe-xji-ra
 Bryan-PROP SUP-hungry-SUP-DEF
 Intended: ‘Bryan is the hungriest.’

As mentioned above, Hocak has another copula, *here* ‘be’. However, *here* ‘be’ is only compatible with nominal complements. As shown in (286), predicative nouns like *wagax haja* ‘student’ can be the complement of *here* ‘be’. In contrast, (287) illustrates that the adjective *xete* ‘big’ cannot be the complement of *here* ‘be’.

- (286) Sarahga wagax hajahižą here.
 Sarah-ga wagax haja-hižą Ø-here
 Sarah-PROP student-INDEF 3S-be
 ‘Sarah is a student.’

- (287) a. Wijukra xete.
 wijuk-ra Ø-xete
 cat-DEF 3S-big
 ‘The cat is big.’
 b. *Wijukra xete here.
 wijuk-ra xete Ø-here
 cat-DEF big 3S-be
 ‘The cat is big.’

The selectional requirements seen in (286) and (287) are not due to the fact that *wagax hajahižą* ‘a student’ contains the indefinite determiner *-hižą* ‘a(n)’. Nouns that can appear without determiners can also be the complement of *here*, as evidenced by (288) with *nijnąwox* ‘beer’ and (289) with *xaigi* ‘chocolate’.

- (288) a. Že’e nijnąwox here.
 že’e nijnąwox Ø-here
 that beer 3S-be
 ‘That is beer.’
 b. *Že’e nijnąwox.
 že’e nijnąwox
 that beer
 Intended: ‘That is beer.’
 (289) a. Že’e xaigi here.
 že’e xaigi Ø-here
 that chocolate 3S-be
 ‘That is chocolate.’
 b. *Že’e xaigi.
 že’e xaigi
 that chocolate
 Intended: ‘That is chocolate.’

Apparent predicative superlative phrases are also licit complements of *here* ‘be’, as in (290) and (291). Again, this holds for i- or s-level predicates.

- (290) Wijukra hoxetexjira here.
 wijuk-ra ho-xete-xji-ra Ø-here
 cat-DEF SUP-big-SUP-DEF 3S-be
 ‘The cat is biggest.’
- (291) Bryanga hotookewexjira here.
 Bryan-ga ho-tookewe-xji-ra Ø-here
 Bryan-PROP SUP-hungry-SUP-DEF 3S-be
 ‘Bryan is the hungriest.’

The fact that superlatives consistently require a copular element shows that predicative superlative phrases behave like predicative nouns, and therefore they must be analyzed as being nominal. In fact, I suggest that they modify a null noun.

4.3.3 No Agreement with Superlative Adjectives

Another syntactic argument that superlative xAPs are attributive comes from agreement in relative clauses. Recall that in subject-oriented relative clauses in Hocak, the verb or adjective must agree with the head of the relative clause. This is illustrated in (292) with the adjective *waxja* ‘funny’ (from chapter 2, section 2.2.2). Thus, if superlative adjectives were predicates, then they should agree with their head noun.

- (292) a. Cecilga wʌk rookhožu ruucirera waxjairera
 Cecilg-a wʌk rookhožu ruuc-ire-ra waxja-**ire**-ra
 Cecil-PROP man pie eat-3PL.S-COMP funny-3PL.S-COMP
 waa.ja.
 wa-Ø-haja
 3PL.O-3S-see
 ‘Cecil saw the funny men who ate the pie.’

- b. *Cecilga wāḁk rookhožu ruucirera waxjara waaja.
 Cecil-ga wāḁk rookhožu ruuc-ire-ra waxja-ra wa-Ø-haja
 Cecil-PROP man pie eat-3PL.S-COMP funny-COMP 3PL.O-3S-see
 Intended: ‘Cecil saw the funny men who ate the pie.’

However, superlative adjectives in argument and apparent predicative positions are barred from taking agreement. This is shown in (293)–(296). (293) and (294) illustrate the contrast with superlative phrases in argument position, whereas (295) and (296) demonstrate the same contrast with superlatives in apparent predicative position. In (293) and (294), the adjectives *wat’ek* ‘cheap’ and *xete* ‘big’ cannot appear with 3rd person plural subject agreement (*-ire*). A similar example is shown in (295) with *saagre* ‘fast’ and in (296) with *maqšja* ‘strong’: both of these adjectives cannot take *-ire*.

- (293) a. Bryanga wažatire howat’ekxjira waruwj.
 Bryan-ga wažatire ho-wat’ek-xji-ra wa-Ø-ruwj
 Bryan-PROP car SUP-cheap-SUP-DEF 3PL.O-3S-buy
 ‘Bryan bought the cheapest cars.’
 b. *Bryanga wažatire howat’ekirexjira waruwj.
 Bryan-ga wažatire ho-wat’ek-ire-xji-ra wa-Ø-ruwj
 Bryan-PROP car SUP-cheap-3PL.S-SUP-DEF 3O.PL-3S-buy
 Intended: ‘Bryan bought the cheapest cars.’
- (294) a. Cecilga waaruc hoxetexjira warusge.
 Cecil-ga waaruc ho-xete-xji-ra wa-Ø-rusge
 Cecil-PROP table SUP-big-SUP-DEF 3PL.O-3S-clean
 ‘Cecil cleaned the biggest tables.’
 b. *Cecilga waaruc hoxeteirexjira warusge.
 Cecil-ga waaruc ho-xete-ire-xji-ra wa-Ø-rusge
 Cecil-PROP table SUP-big-3PL.S-SUP-DEF 3PL.O-3S-clean
 Intended: ‘Cecil cleaned the biggest tables.’
- (295) a. Hoo že’e hosaagrexjira wa’unaḁkšana.
 hoo že’e ho-saagre-xji-ra wa’u-naḁk-šana
 fish that SUP-fast-SUP-DEF AUX-POS.3PL.S-DECL
 ‘Those fish are the fastest.’

- b. * Hoo že'e hosaagreirexjira wa'unaakšana.
 hoo že'e ho-saagre-ire-xji-ra wa'u-naak-šana
 fish that SUP-fast-3PL.S-SUP-DEF AUX-POS.3PL.S-DECL
 Intended: 'Those fish are the fastest.'
- (296) a. Hųuc že'e homaašjajira wa'unaakšana.
 hųuc že'e ho-maašja-xji-ra wa'u-naak-šana
 bear that SUP-strong-SUP-DEF AUX-POS.3PL.S-DECL
 'Those bears are the strongest.'
- b. * Hųuc že'e homaašjairexjira wa'unaakšana.
 hųuc že'e ho-maašja-ire-xji-ra wa'u-naak-šana
 bear that SUP-strong-3PL.S-SUP-DEF AUX-POS.3PL.S-DECL
 Inteded: 'Those bears are the strongest.'

I take the fact that agreement cannot occur with superlative adjectives in either argument or apparent predicative positions to mean that superlative APs are in fact in an attributive position. If these superlative adjectives were predicates, then these facts would be left unexplained.

4.3.4 Summary

All of the data presented in this section leads to the conclusion that superlative phrases are nominal. That is, they must merge in an attributive position. First, superlative xAPs can appear in argument positions without an overt noun (section 4.2). Second, we also have seen that other adjectives can stack with superlative xAPs. Third, predicative superlative xAPs require the auxiliary *wa'u-* or the copula *here*, which is parallel to predicative nouns. Lastly, superlative adjectives cannot take plural agreement, which suggests they are in an attributive position. The results are summarized in (297).

- (297) a. Superlative phrases in argument position
- b. Stacking

- c. Patterns with nominals
- d. Lack of agreement

4.4 Superlatives Are Not Nominalized APs

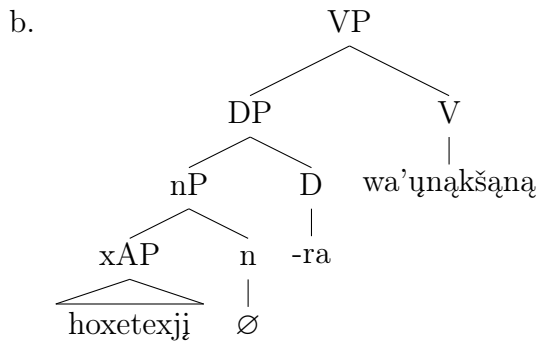
In this section, I address, and subsequently reject, a nominalization account of superlative adjectives in Hocak. Nominalization accounts have been explored by Giannakidou and Stavrou (1999), Borer and Roy (2005), Matushansky (2008), Roy (2010), and Alexiadou (2013). Except for Matushansky (2008), these accounts do not explicitly discuss superlative adjectives. Giannakidou and Stavrou (1999) show that adjectival nominalization and NP-ellipsis with remnant adjectives are two separate phenomena in Greek, and Borer and Roy (2005) also propose that the two phenomena are different by examining data from Romance and Hebrew. Roy (2010) investigates the argument structure of nominalized adjectives while Alexiadou (2013) examines nominalization patterns of color adjectives in Greek. Under the nominalization account of superlatives, the superlative adjective is nominalized in the context of either a determiner (D) or a null nominalizing affix (perhaps, a “little n” suffix). These two analyses are roughly outlined in (299) for (298) (with the subject removed for simplicity).

- (298) Wijukra hoxetexjira wa'unaḱšana.
 wijuk-ra ho-xete-xji-ra Ø-wa'u-naḱ-šana
 cat-DEF SUP-big-SUP-DEF 3S-AUX-POS.NEUT-DECL
 ‘The cat is the biggest.’

- (299) a.
-
- ```

graph TD
 VP --> DP
 VP --> V
 DP --> xAP
 DP --> D
 xAP --> hoxetexji
 D --> ra["-ra"]
 V --> wauna["wa'unaḱšana"]

```



However, an analysis where either the definite marker *-ra* or a null affix (e.g., a “little *n*” suffix) acts as a nominalizer is problematic for a few reasons. First, while noun phrases can appear with an elided (or null) head in (277) in section 4.3.1 above, relative clauses marked by *-ra* cannot have a null head. In chapter 2 (section 2.2.3), I showed that relative clauses cannot have a null head noun, as demonstrated by the ungrammaticality of (300b). The fact that (277) can have an elided head, but (300) cannot, suggests that *-ra* cannot function as a nominalizer when the head is null. If *-ra* were always a nominalizer, then (300b) should be grammatical without a head noun, *contra* to fact.

- (300) a. Hunterga, **hiḱṇa waisgap sguu rook'jira**, haja.  
 Hunter-ga, hiḱṇa waisgap sguu ∅-rook'j-ra, ∅-haja  
 Hunter-PROP one cake 3S-bake-COMP 3S-see  
 ‘Hunter saw the one that baked the cake.’
- b. \* Hunterga, **waisgap sguu rook'jira**, haja  
 Hunter-ga, waisgap sguu ∅-rook'j-ra, ∅-haja  
 Hunter-PROP cake 3S-bake-COMP 3S-see  
 Intended: ‘Hunter saw the one that baked the cake.’

Second, Matushansky (2008) claims that a nominalization analysis is not tenable for superlatives with *one*-insertion; see (301). In (301a), *one*-insertion is possible. The realization of a pronominal *one* is evidence against a nominalization account since *one* is the overt head of the NP. However the data are not completely clear-cut. The fact that *one*-insertion is blocked in (301b) suggests that not all cases in English can be easily handled by NP-ellipsis.

- (301) a. This book is **the least expensive** (one).  
 b. I am **the happiest** (\*one) when I am doing syntax. (Matushanksy 2008:52)

In the case of Hocak, every example with a superlative phrase can have an overt head noun. This includes examples that are similar to (301b), as seen in (302) and (303).

- (302) Meredithga (hiža) **howogižawaxjira** wa'unaḱṣaṇa, jaajanaḱ Hocak  
 Meredith-ga hiža ho-wogižawa-xji-ra Ø-wa'unaḱ-ṣaṇa jaajanaḱ Hocak  
 Meredith-PROP one SUP-happy-SUP-DEF 3S-AUX-POS.NEUT-DECL when Hocak  
 hoit'e waagax hajagi.  
 hoit'e waagax haja-gi  
 language study-COMP  
 'Meredith is the happiest (one) when she is studying Hocak.'
- (303) Meredithga (hinuk) **howogižawaxjira** wa'unaḱṣaṇa, jaajanaḱ  
 Meredith-ga hinuk ho-wogižawa-xji-ra Ø-wa'unaḱ-ṣaṇa jaajanaḱ  
 Meredith-PROP woman SUP-happy-SUP-DEF 3S-AUX-POS.NEUT-DECL when  
 Hocak hoit'e waagax hajagi.  
 Hocak hoit'e waagax haja-gi  
 Hocak language study-COMP  
 'Meredith is the happiest (woman) when she is studying Hocak.'

The element *hiža* 'one' in (302) refers to the set of people that are happy. Thus, since *ho-...-xji* has a meaning of "more X than all others," *Meredith* is the happiest person in the set of happy people. In (303), *Meredith* is the happiest woman in the set of happy people. The data from Hocak show that NP-ellipsis with superlative xAPs is optional, as the head noun can always be realized. This possibility is not expected under an analysis that claims superlatives are formed by a nominalization process.

Third, Giannakidou and Stavrou (1999) argue that adjectival nominalizations and NP-ellipsis with remnant adjectives in Greek are syntactically and semantically different. They point out that nominalization has a "fixed" interpretation, whereas the interpretations involved with NP-ellipsis are variable and are dependent on their antecedents. They show that in English *the rich* has a fixed interpretation, as in (304). *The rich* must refer to a set

of people. Since *the rich* does not have an antecedent in the discourse, its interpretation is fixed. By comparison, NP-ellipsis requires a discourse antecedent, and thus can have a (potentially) variable interpretation.

(304) **The rich** usually forget where they started from.

(Giannakidou and Stavrou 1999:296, translation of (1b))

The instances of superlatives in Hocak without overt nouns have a variable interpretation, as illustrated by (305).

- (305) a. Meredithga      waʒatire hoceexixjira                      ruwɨ      anaga Sarahga  
 Meredith-ga      waʒatire ho-ceexi-xji-ra                      Ø-ruwɨ anaga Sarah-ga  
 Meredith-PROP car              SUP-expensive-SUP-DEF 3S-buy and      Sarah-PROP  
~~waʒatire~~ hoceekxjira              ruwɨ.  
 waʒatire ho-ceek-xji-ra              Ø-ruwɨ  
 car              SUP-new-SUP-DEF 3S-buy  
 ‘Meredith bought the most expensive car and Sarah bought the newest (car).’
- b. Bryanga      wiiwagax hoʒiipɨkxjira                      honaɕ      anaga Cecilga  
 Bryan-ga      wiiwagax ho-ʒiip-ɨk-xji-ra                      Ø-honaɕ anaga Cecil-ga  
 Bryan-PROP pencil              SUP-short-DIM-SUP-DEF 3S-borrow and      Cecil-PROP  
~~wiiwagax~~ hoserecxjira              honaɕʃanaɨ.  
 wiiwagax ho-serec-xji-ra              Ø-honaɕ-ʃanaɨ  
 pencil              SUP-long-SUP-DEF 3S-borrow-DECL  
 ‘Bryan borrowed the shortest pencil and Cecil borrowed the longest (pencil).’
- c. Hunterga      caa zii      hoxetexjira              haja      anaga Matejaga      ~~caa~~  
 Hunter-ga      caa zii      ho-xete-xji-ra              Ø-haja anaga Mateja-ga      caa  
 Hunter-PROP deer brown SUP-big-SUP-DEF 3S-see and      Mateja-PROP deer  
~~zii~~      hoxunuxjira              haja.  
 zii      ho-xunux-xji-ra              Ø-haja  
 brown SUP-small-SUP-DEF 3S-see.  
 ‘Hunter saw the biggest brown deer and Mateja saw the smallest (brown deer).’

In the examples with superlative adjectives in (305), the interpretation of the noun in the second conjunct varies. The nouns in the second conjunct of each sentence has the interpretation ‘car’, ‘pencil’, and ‘deer’, respectively. Note that the ellipsis in (305c) does not just

affect the noun, but also the adjectival modifiers: the noun in the second conjunct refers to a deer that is ‘brown’. Such interpretations are available because each noun has its antecedent in the first conjunct. This is consistent other examples of NP-ellipsis; see (306).

- (306) Meredithga waḡiḡi coo xetenakre ruwḯ nuniḡe Bryanga ~~waḡiḡi~~  
 Meredith-ga waḡiḡi coo xete-naḡkre Ø-ruwḯ nuniḡe Bryan-ga waḡiḡi  
 Meredith-PROP ball green big-DEM.NEUT 3S-buy but Bryan-PROP ball  
~~coo~~ xununaḡa ruwḯ.  
 coo xununaḡa Ø-ruwḯ  
 green small-DEM.NEUT 3S-buy

‘Meredith bought this small green ball, but Bryan bought that small (green ball).’

(Johnson and Rosen 2014b, (30a))

Like (305), the elided noun in the second conjunct receives its antecedent from the first conjunct. In (306), it is interpreted as ‘ball’. Furthermore, (306) shows that it is not only the noun that is elided in the second conjunct, as the noun has the reading ‘small green one’. This is similar to example (305c).

Finally, it is well established that nominal ellipsis is productive, while nominalization is not. For example, Giannakidou and Stavrou (1999:302) observe that in Greek, some adjectives can be nominalized and other cannot. Consider (307) and (308): *i diskoles* ‘the difficult’ and *to agnosto* ‘the unknown’ are grammatical (as in (307)), but *i efjkoles* ‘the easy’ and *to gnosto* ‘the known’ are not (as in (308)).

- (307) a. i diskoles  
           the difficult

- b. to agnosto  
       the unknown

- (308) a. \*i efjkoles  
           the easy

- b. \*to gnosto  
       the known

Matushansky (2008:78) also provides a contrast from English nominalizations; see (309). Color adjectives can be nominalized, but shape adjectives cannot.

- (309) a. The reds/blues/greens/whites are a bit pale.  
 b. \*The rounds/rectangulars/triangulars/hexagonals are lopsided.

In contrast, superlative xAPs with null nouns is completely productive in Hocak. We have seen several examples of superlative xAPs throughout the chapter. Note that NP-ellipsis with remnant bare adjectives is also productive. That is, NP-ellipsis is not lexically constrained by the type or class of adjective, as exemplified in (310).

- (310) a. Matejaga      šuucra    haja.  
           Mateja-ga    šuuc-ra    Ø-haja  
           Mateja-PROP red-DEF 3S-see  
           ‘Mateja saw the red one.’  
 b. Meredithga      poroporora    rook’i.  
           Meredith-ga    poroporo-ra    Ø-rook’i  
           Meredith-PROP round-DEF 3S-cook  
           ‘Meredith cooked the round one.’

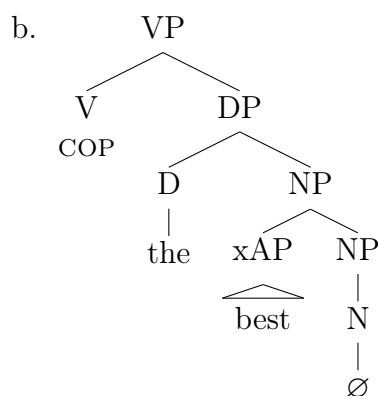
We have seen that superlative adjectives do not behave as if they are nominalized. First, *-ra* is not necessarily a nominalizer: a relative clause cannot have a null head. Second, superlative phrases can always have an overt head noun, which is not predicted under a nominalization analysis. Third, superlative phrases do not have fixed interpretations. Fourth, superlative phrases with null head nouns are productive. Thus, I conclude that the Hocak data do not support a nominalization account. Instead, I will argue in the next section that Hocak superlatives are best analyzed by an NP-ellipsis account.

## 4.5 An Analysis of Superlative Phrases in Hocak

The Hocak data indicate that superlatives systematically pattern with nominals, which is not predicted by the standard account where predicative superlatives are xAPs. The data also show that superlatives are not nominalized APs. In this section, I present an analysis that accounts for the external distribution of superlative phrases in Hocak. I argue that the head noun is elided, and that the superlative adjective is stranded as a result. I follow a derivational theory of ellipsis (e.g., Aelbrecht 2010), where ellipsis is licensed through an Agree relation between the licensing head (D) and an [E]-feature.

I argue that Hocak superlatives in apparent predicative position are xAPs that modify an elided noun (see Ross 1964, Matushansky 2008). Matushansky (2008) claims that superlative phrases always contain a null (or elided) head noun, as represented in (311). She follows Ross (1964) and assumes that the definite article is present because of a null anaphoric noun *one*.

(311) a. This story is **the best**.



This analysis explains the facts surrounding superlatives in Hocak. In section 4.3, I showed that superlative phrases have a noun-like distribution. First, a superlative xAP can stack with another adjective. Second, superlative xAPs in predicative position require the auxiliary *wa'y-* or the copula *here* 'be', which mirrors the facts concerning predicative



nouns. Third, superlative xAPs cannot take plural agreement morphology, suggesting they are attributive. Moreover in section 4.4, I provided a number of diagnostics showing that superlative phrases have not undergone a nominalization process. I take these facts to indicate that an NP-ellipsis account is the correct one for superlative phrases in Hocak. My analysis of superlative phrases is roughly schematized in (312b) for (312a).

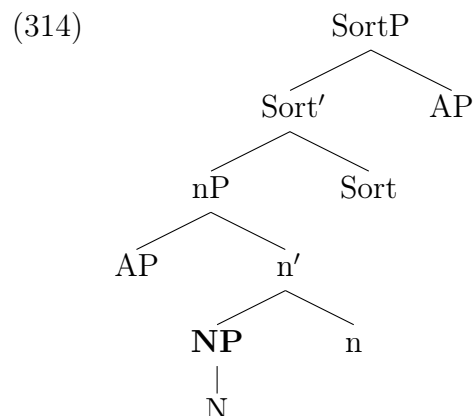
- (312) a. Wijukra (hiža) hoxetexjira wa'unaḱṣana.  
 wijuk-ra hiža ho-xete-xji-ra Ø-wa'u-naḱ-ṣana  
 cat-DEF one SUP-big-SUP-DEF 3S-AUX-POS.NEUT-DECL  
 'The cat is the biggest (one).'
- b. Wijukra [<sub>DP</sub> ~~hiža~~<sub>NP</sub> hoxetexjira] wa'unaḱṣana.

This analysis is supported by the fact that Hocak independently has productive NP-ellipsis. In (313a) (repeated from (277)), the head noun of the second conjunct (*wijuk* 'cat') has been elided. (313b) illustrates that NP-ellipsis may also target both the head noun and an adjective: the noun phrase in the second conjunct is interpreted as 'the small blue ball'.

- (313) a. Meredithga wijuk kirikirišra ruwḷ anaga Bryanga ~~wijuk~~  
 Meredith-ga wijuk kirikiriš-ra Ø-ruwḷ anaga Bryan-ga wijuk  
 Meredith-PROP cat striped-DEF 3S-buy and Bryan-PROP cat  
 kerekerešra ruwḷ.  
 kerekereš-ra Ø-ruwḷ  
 spotted-DEF 3S-buy  
 'Meredith bought the striped cat and Bryan bought the spotted (cat).'
- b. Meredithga waḡiḡi coo xetera ruwḷ anaga Bryanga ~~waḡiḡi coo~~  
 Meredith-ga waḡiḡi coo xete-ra Ø-ruwḷ anaga Bryan-ga waḡiḡi coo  
 Meredith-PROP ball blue big-DEF 3S-buy and Bryan-PROP ball blue  
 xunura ruwḷ.  
 xunura Ø-ruwḷ  
 small-DEF 3S-buy  
 'Meredith bought the big blue ball and Bryan bought the small (blue ball).'

With respect to the position of adjectives in Hocak, I extend the account that I presented in chapter 3 (section 3.4.2). I claimed that two functional heads introduce different types of

noun dependencies in their specifiers. There are two basic layers in nominals: nP and SortP. The schematization is provided in (314). SortP licenses non-denominal adjectives, and nP is the locus of denominal modification.



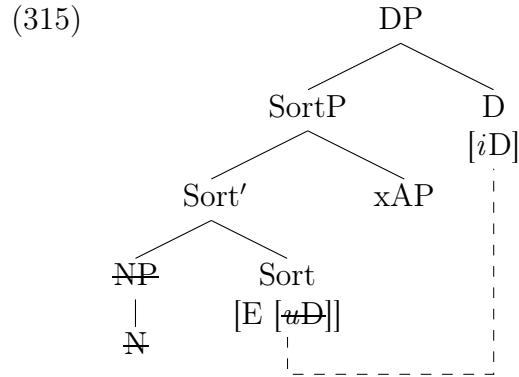
I follow Aelbrecht's (2010) derivational theory of ellipsis. She argues that ellipsis is licensed via an Agree relation between an [E]-feature and the ellipsis licensing head.<sup>53</sup> The licensing head checks the [E]-feature through an Agree relation, which sends the complement of the head bearing the [E]-feature to PF. Ellipsis occurs as soon as the licensing head is merged. Moreover, Aelbrecht proposes a reverse Agree relation (contra Chomsky 2000, 2001): the probe sits lower than the goal, and thus the [E]-feature probes upwards (see also Baker 2008 and Zeijlstra 2012). I assume that the licensing head of NP-ellipsis is D, as proposed by Lobeck (1995). Thus, when D is merged in the syntax, the complement of the head bearing the [E]-feature is elided. I assume that any one of the functional heads in the DP may bear the [E]-feature (e.g., n or Sort).

I now demonstrate how NP-ellipsis is derived in Hocak superlatives. As shown in (315), D takes SortP as its complement, and Sort bears the [E]-feature. The Agree relationship is

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<sup>53</sup>Merchant (2001) proposes that the [E](llipsis)-feature has three main functions. First, the [E]-feature contains other syntactic features, such as a *wh*-feature in sluicing examples. Second, the [E]-feature triggers the phonological deletion of its complement. Third, [E] possesses an e-givenness constraint, which involves a focus condition on the material that is not elided. See Merchant (2001) for more details. However, note that while Merchant (2001) always locates the [E]-feature on the licensing head, Aelbrecht (2010) separates the licensing head from the [E]-feature.

schematized below:<sup>54</sup>



In the previous chapter, I argued that Sort triggers the merger of non-denominal adjectives in Hocak. I further noted that gradability was not a defining factor when licensing postnominal adjectives (cf. Svenonius 2008), as non-gradable adjectives also appear postnominally. Here, I suggest that while gradability is not the main characteristic of postnominal adjectives, it may be a secondary one. It seems that all prenominal adjectives are non-gradable: material and nationality/origin modifiers cannot bear superlative morphology, as evidenced by (316a) and (b), respectively.

- (316) a. \*Bryanga hojnijxji waʒatirera roogu.  
 Bryan-ga ho-inij-xji waʒatire-ra Ø-roogu  
 Bryan-PROP SUP-stone-SUP car-DEF 3S-want  
 Intended: ‘Bryan wanted the most stone car.’
- b. \*Matejaga hohiʃjahakirujikxji waʒakra hokit’e.  
 Mateja-ga ho-hiʃjahakirujik-xji waʒak-ra Ø-hokit’e  
 Mateja-PROP SUP-Japanese-SUP car-DEF 3S-talked.to  
 Intended: ‘Mateja talked to the most Japanese man.’

<sup>54</sup>I assume that the superlative morpheme in Hocak bundles with the [+Q] that induces the generic operator Gen. That is, when Deg has the feature [SUP], it always enters to the syntax with [+Q] to yield [SUP, +Q]. In chapter 3 (section 3.4.2), I proposed that non-intersective adjectives have a [+Q] feature as part of their lexical composition, which induces a generic operator. Thus, Hocak superlative adjectives will always have a non-intersective interpretation. For simplicity, I do not show the generic operator as part of the syntactic schematizations. See Heim (1999) for a related proposal.

Since SortP may have properties that allow it to license gradable adjectives, Sort can take superlative xAPs in its specifier. Then D enters into an Agree relation with Sort, and thus its NP complement is shipped to PF. This elliptical process strands the superlative xAP and the determiner (see (315)).

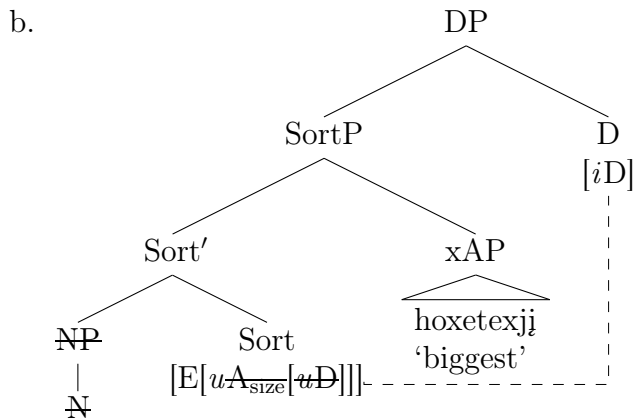
Matushansky (2008:58) mentions that there is no apparent motivation for ellipsis when the attributive xAP is treated as an adjunct or as a specifier. The head of the superlative xAP cannot c-command the NP from either of these positions, which Matushansky views as problematic. In Matushansky's analysis, the attributive xAP has to c-command the head noun in order to license NP-ellipsis.

The current proposal does not make the same assumptions and thus does not necessarily run into this issue. First, I assume that Sort may license gradable adjectives. This permits superlative xAPs to merge in Spec,SortP. Second, since the [E]-feature may be separated from its licenser (e.g. D) under a derivational account of ellipsis, I have proposed that the [E]-feature is on Sort. That is, ellipsis does not have to target the NP projection (cf. Matushansky 2008); rather ellipsis can target a phrase in the extended projection of the NP (e.g., nP, SortP). Moreover, there is a tight relationship between ellipsis and the licensing head of the superlative xAP: Sort both hosts the [E]-feature implicated in ellipsis and licenses superlative xAPs. Under this analysis, the problem suggested by Matushansky is avoided because of the properties of the Sort head and the derivation of ellipsis. The licenser of ellipsis (D) enters into an Agree relation with [E]-feature on Sort, and this subsequently elides the head noun that the superlative xAP modifies.

In my analysis of adjective ordering and placement, the merger of adjectives is triggered by features on either n or Sort. Features on either one of these heads can stack, which produces multiple specifiers. I need to address how the [E]-feature fits in with the feature stacking approach of adjective ordering. I assume that certain sets of features can be bundled. Within the minimalist literature, it is often assumed that number and person (perhaps gender as well)

are bundled under the name “ $\phi$ -features.” Along these lines, I propose that the [E]-feature bundles with one of the adjective subcategorization features on *n* or *Sort*. For example, the [ $uA_{size}$ ] feature can bundle with the [E]-feature. The structure for (317a) is depicted in (317b).

- (317) a. Wijukra (hiža) hoxetexjira      wa’unaḱṣana.  
 wijuk-ra hiža    ho-xete-xji-ra    Ø-wa’u-naḱ-ṣana  
 cat-DEF one    SUP-big-SUP-DEF 3S-AUX-POS.NEUT-DECL  
 ‘The cat is the biggest (one).’



As shown in (317b), the [E]-feature is bundled with the adjective feature that triggers the size adjective. This is compatible with Aelbrecht’s theory, as she proposes that the [E]-feature bundles with other features in the lexicon in other cases of ellipsis.<sup>55</sup> Ellipsis is triggered by an Agree relation between the [ $uD$ ] on *Sort* and the [ $iD$ ] on *D*. The complement of *Sort* is elided as it bears the [E]-feature. This leaves the superlative xAP *hoxetexji* as a remnant adjective.

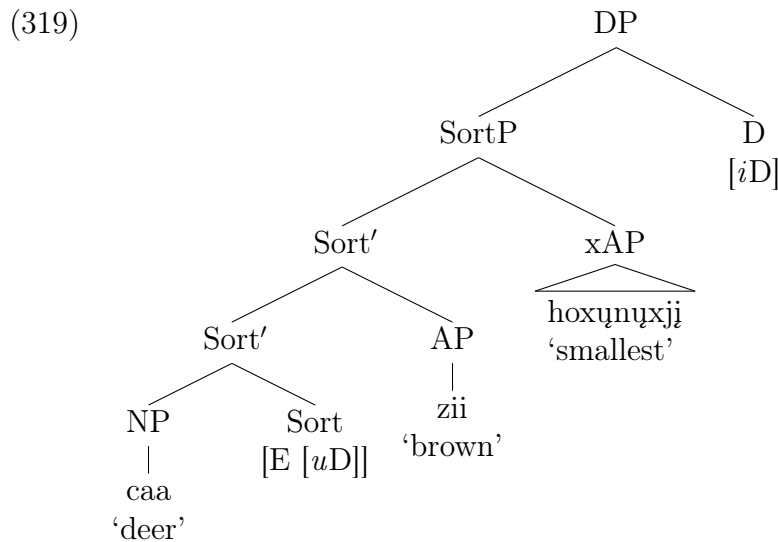
Recall that a superlative adjective can modify an elided noun with an elided adjectival modifier. Example (305c) is repeated in (318): the noun phrase in the second conjunct means ‘the smallest brown deer’, despite the fact that ‘brown’ and ‘deer’ are not overt.

<sup>55</sup>For example, Aelbrecht suggests that with Dutch modal ellipsis, the [E]-feature bundles with T’s inflectional, categorial, and selectional features.

- (318) Hunterga    caa   zii    hoxetexjira    haja    anaga Matejaga    ~~caa   zii~~  
 Hunter-ga    caa   zii    ho-xete-xji-ra    Ø-haja anaga Mateja-ga    caa   zii  
 Hunter-PROP deer brown SUP-big-SUP-DEF 3S-see    and    Mateja-PROP deer brown  
 hoxunuxjira    haja.  
 ho-xunuxji-ra    Ø-haja  
 SUP-small-SUP-DEF 3S-see

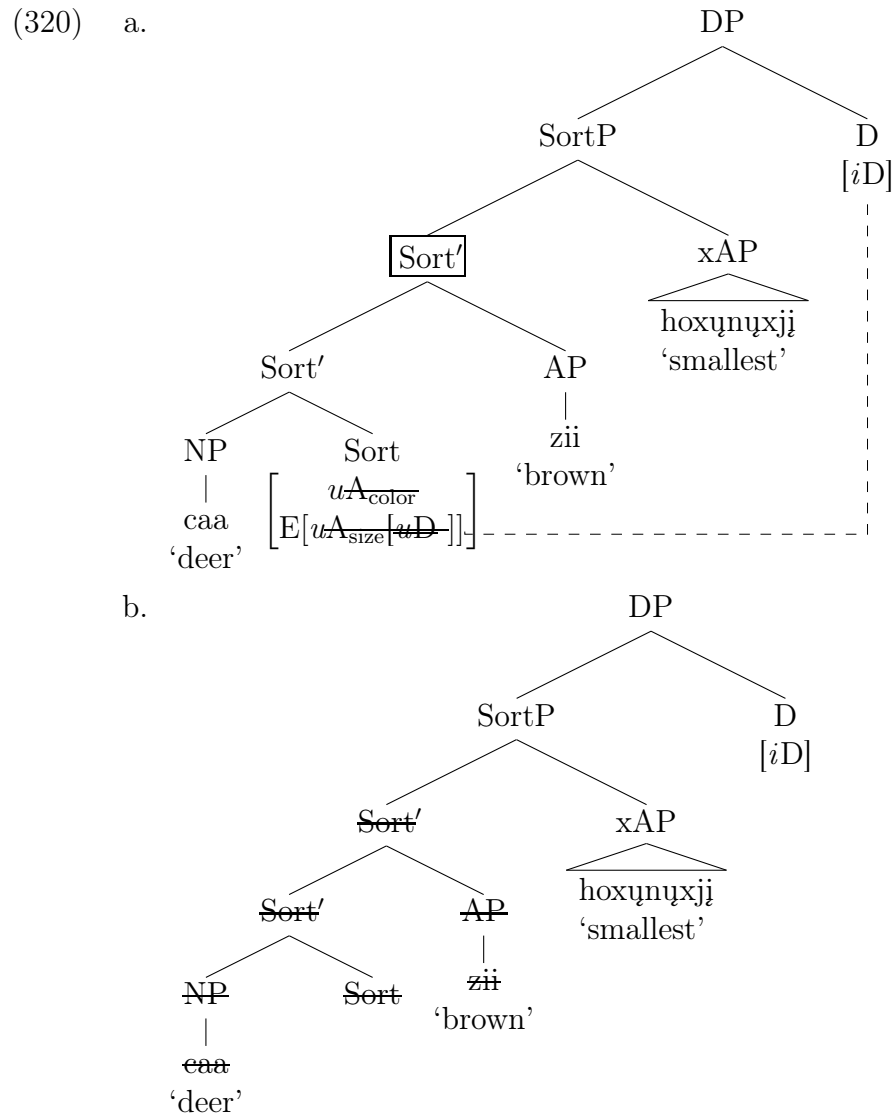
‘Hunter saw the biggest brown deer and Mateja saw the smallest (brown deer).’

Both Merchant’s (2001) and Aelbrecht’s (2010) approaches cannot account for ellipsis occurring in multiple specifier constructions, since only the complement of the head that bears the [E]-feature can be elided. Consider the structure in (319) for the noun phrase in (318) before ellipsis takes place.



In (319), D is the licenser of ellipsis, and Sort bears the [E]-feature. If D and the [E]-feature enter into an Agree relation, the complement of Sort (i.e., NP) is elided. This strands both APs. However, this analysis runs into a problem when a lower adjective is elided with the NP (e.g., *zii* ‘brown’ in (318)). Since the [E]-feature is on Sort, there is no way for the AP to be elided with the NP, under either Merchant’s or Aelbrecht’s account. As a solution to this problem, I slightly modify Aelbrecht’s account: I propose that the constituent that is elided is based on what feature the [E]-feature bundles with. That is, ellipsis can be analyzed as

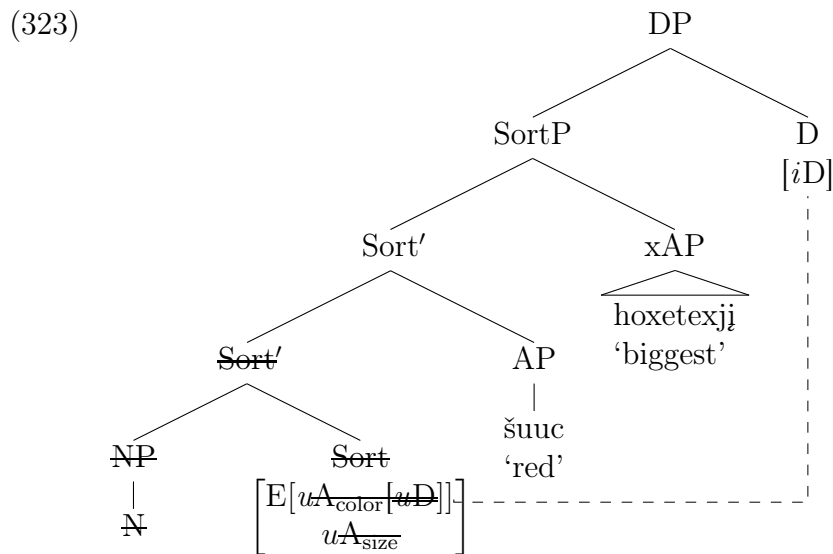
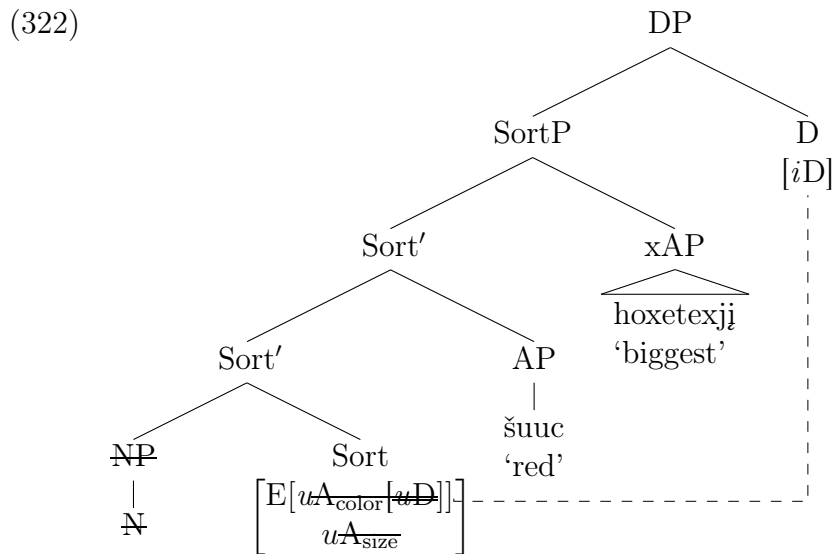
deletion of the sister of the specifier that contains the adjective. To elide the lower AP and the NP, the [E]-feature bundles with the size adjective feature [ $uA_{size}$ ] on Sort, and the sister of the AP *xete* ‘big’ (the higher Sort’) is deleted. This is indicated by the box in (320a), and the full constituent that is elided is Sort’, as schematized in (320b) below.



In examples like (279a) above (repeated as (321)), a superlative xAP is stacked with another adjective (such as, *šuuč* ‘red’). Both adjectives merge in Spec,SortP. In order to elide only the head noun, there are two options. In the first option, the Agree relation

between D and the [E]-feature triggers the deletion of the complement of Sort (i.e., NP), as illustrated in (322). In the second option, since [E] bundles with [ $uA_{\text{color}}$ ], its sister (Sort') is elided, as depicted in (323) below.

- (321) Wijuk že'e šuuc hoxetexjira      wa'unaḱṣaṇa.  
 wijuk že'e šuuc ho-xete-xji-ra      Ø-wa'ṽ-nḱ-ṣṇa  
 cat    that red    SUP-big-SUP-DEF 3S-AUX-POS.NEUT-DECL  
 'That cat is the biggest red one.'



The two options account for the ellipsis data in (321). While the first option in (322) is



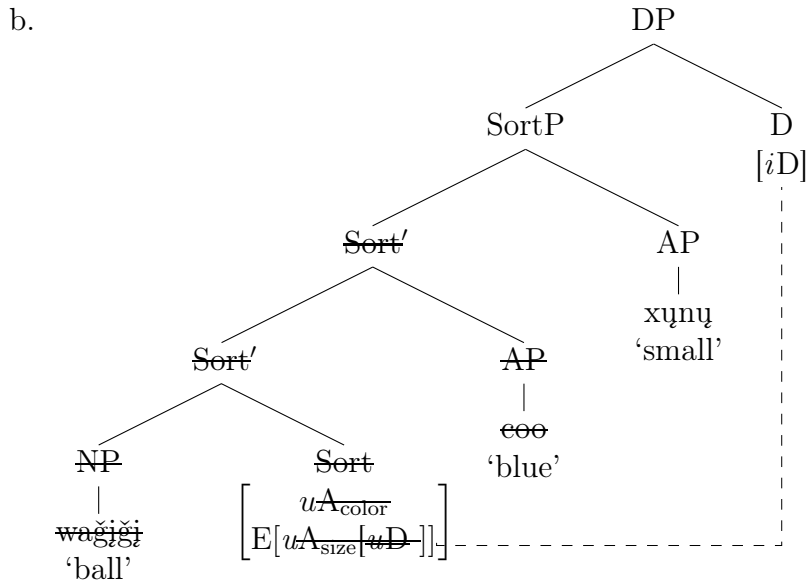
consistent with Aelbrecht’s (2010) proposal in that the complement of the head that bears the [E]-feature is elided, deciding between these two options is not crucial for the purposes here. I remain open to both options: either Sort licenses the deletion of the NP, or the sister of the specifier is deleted. In other words, the sister-of-a-specifier-deletion account could always be triggered with a multiple specifier structure; however, it could be the case that this analysis is only invoked when a specifier needs to avoid deletion (presumably for interpretability purposes; see Merchant’s (2001) e-givenness.)<sup>56</sup>

The present analysis also accounts for NP-ellipsis cases where an adjective is elided with the head noun. In the case of (313b) (repeated as (324a)), the noun phrase in the second conjunct is interpreted as ‘the small blue one’ even though *coo* ‘blue’ and the head noun are not overt. I propose that the stranded adjective *xynɥ* ‘small’ merges in the upper Spec,SortP, and the elided adjective *coo* ‘blue’ merges in the lower Spec,SortP. Similar to cases of elided nouns with superlatives, Sort bears the [E]-feature. Note that the complement of Sort cannot be deleted in such examples, as the lower adjective *coo* would not be elided. The structure I propose for (324a) is schematized in (324b): the [E]-feature bundles with the adjective subcategorization feature [*uA<sub>size</sub>*], and the sister of *xynɥ* ‘small’ is elided (cf. (320)).

- (324) a. Meredithga      waḡiḡi coo xetera    ruwɪ    anaga Bryanga    ~~waḡiḡi coo~~  
 Meredith-ga      waḡiḡi coo xete-ra    Ø-ruwɪ anaga Bryan-ga    waḡiḡi coo  
 Meredith-PROP ball    blue big-DEF 3S-buy and    Bryan-PROP ball    blue  
 xynɥra      ruwɪ.  
 xynɥ-ra      Ø-ruwɪ  
 small-DEF 3S-buy  
 ‘Meredith bought the big blue ball and Bryan bought the small (blue ball).’

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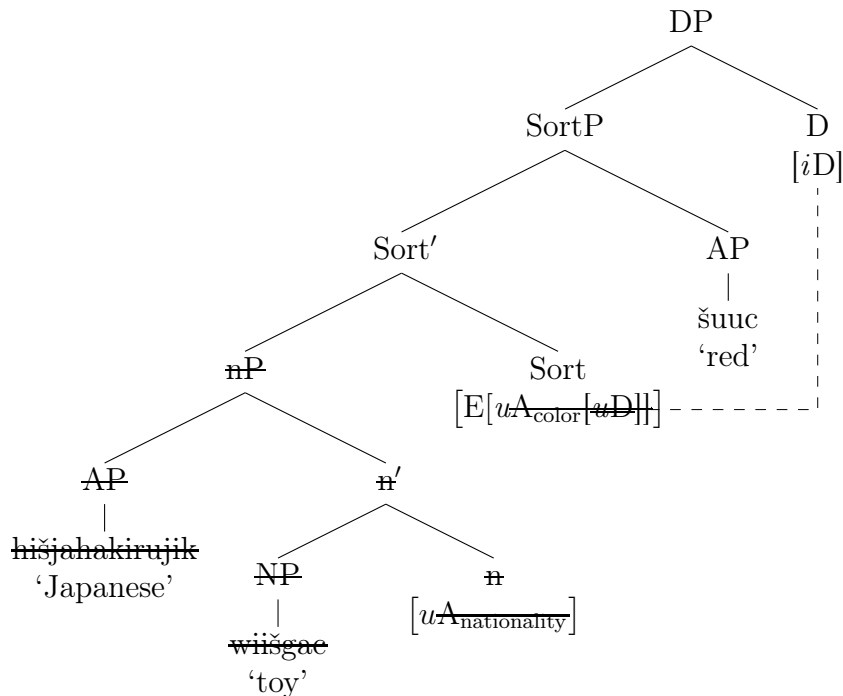
<sup>56</sup>The analysis in (323) could seem contradictory to what Manetta (2010) has claimed about feature stacking. She argues that all the features of one bundle must be checked (or valued) before the features in the next bundle are checked. However, (323) shows that the size adjective *xete* ‘big’ must merge with Spec,SortP before ellipsis occurs. I assume that the [E]-feature is special in that the Agree relation between [E] and its licenser can be delayed. In the case of (323), the relation must be delayed so that *xete* is merged in Spec,SortP.



Finally, let us consider an example of NP-ellipsis from chapter 3 (section 3.4.2), where the noun is modified by both a prenominal and postnominal adjective. In (325a), the head noun *wiišgac* ‘toy’ is modified by the prenominal adjective *hišjahakirujik* ‘Japanese’ and the postnominal adjective *šuuc* ‘red’. *Hišjahakirujik* ‘Japanese’ merges in Spec,nP, while *šuuc* ‘red’ merges in Spec,SortP, as depicted in (325b). Here, [E] merges with the color adjective feature on Sort, and the complement of Sort is elided. As a result, the nP is elided.

- (325) a. Meredithga ~~hišjahakirujik~~ ~~wiišgac~~ šuuchižą ruwı.  
 Meredith-ga hišjahakirujik wiišgac šuuc-hižą Ø-ruwı  
 Meredith-PROP Japanese toy red-INDEF 3S-buy  
 ‘Meredith bought a red (Japanese toy).’

b.



In sum, the ellipsis analysis of superlative phrases predicts the noun-like distribution of the superlative phrase, while also capturing the fact that some superlatives have an overt head noun. In addition, the derivational approach of Aelbrecht 2010 allows for a straightforward account of NP-ellipsis in Hocak.<sup>57</sup>

## 4.6 Conclusion

In this chapter, I have argued that superlatives contain an attributive xAP that modifies an elided head noun. I have provided an analysis that can straightforwardly be accounted for under a derivational theory of ellipsis, such as Aelbrecht (2010). I have shown that superlatives pattern distributionally with nouns, as they require copular support in predicative environments in Hocak. The fact that superlatives behave like nouns is consistent with a nominalization account. However, I have argued against such an approach, since the head

<sup>57</sup>See the appendix of this chapter for arguments against analyzing NP-ellipsis in Hocak through other ellipsis approaches.

noun of the superlative can always be realized by a pronominal in Hocak. Overall, the data from superlatives in Hocak support an analysis in which superlatives are NP-internal with an elided head noun. This chapter thus provides stronger data for the proposal that superlatives are not bare or nominalized xAPs in predicative environments (cf. Matushansky 2008).

I conclude this chapter by discussing two directions for future work with respect to superlatives in Hocak. One direction is addressing the different interpretations of superlatives. I noted superlatives cross-linguistically have been observed as having two interpretations: an absolute and a comparative reading (Szabolcsi 1986, Heim 1999). The focus of this chapter was on the absolute reading. I would need to examine how each of the comparative readings are achieved (cf. Pancheva and Tomaszewicz 2012, Shen 2014). A comparative reading seems to be available in Hocak, but it is achieved through the use of *-xji*; however, this does not appear to be a degree construction as *-xji* seems to be able to modify verbs and nouns in addition to adjectives. More work is needed to determine the semantics of superlatives in Hocak.

Another direction is establishing an internal structure of superlatives in Hocak. Szabolcsi (1986), Heim (1999), and Hackl (2009) claim that the superlative morpheme affixes directly to the adjective. These two morphemes can be subsumed under a general degree head (Deg), and superlatives and comparatives are different values of Deg. This is roughly illustrated in (326).

- (326) a. [[Adjective] SUPERLATIVE]  
       b. [[Adjective] COMPARATIVE]

By comparison, Bobaljik (2012) accounts for the position of the degree morphemes associated with superlatives in a different way: he suggests that the superlative morpheme is composed of comparative and superlative elements. Bobaljik refers to this as *The Containment Hypothesis*. He argues that the structure of superlatives is represented by (326a), and

not by (326b).

- (327) a. [[[Adjective] COMPARATIVE] SUPERLATIVE]  
 b. \* [[Adjective] SUPERLATIVE]

This chapter has focused on the external distribution of superlatives in Hocak; thus, a detailed discussion of Bobaljik's proposal, as compared to Heim's, is beyond the scope of this chapter. Bobaljik's (2012) theory predicts that superlatives are composed of two morphemes: a comparative one and a superlative one. This is consistent with the Hocak superlative which is composed of two overt pieces *ho-* ... *-xj̃j̃*. While this merits further investigation, I will leave it open as to whether Heim's or Bobaljik's theory is better equipped to handle Hocak superlatives.

## 4.7 Appendix: Previous Analyses of NP-ellipsis

Descriptively, two types of NP-ellipsis have been established: (i) an elision strategy, and (ii) a pronominalization strategy. The elision strategy is characterized by having agreement (inflectional morphology) on the remnant adjective. The pronominalization is distinguished by the fact that the stranded adjective does not carry inflectional morphology. There have been many analyses of NP-ellipsis to account for each strategy. I briefly review three types of accounts; I subsequently reject all three.

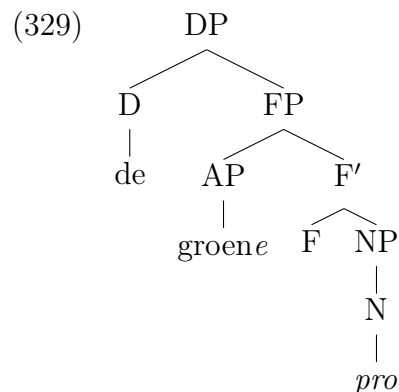
### 4.7.1 Lobeck (1995) and Kester (1996)

Lobeck (1995) argues that elided nouns are instances of *pro* that are licensed by strong agreement. She assumes that strong agreement refers to when a head “X” is morphologically (and productively) realized. Thus, the licensing of the empty category *pro* is directly related to strong agreement. Lobeck claims that licensors with strong agreement in English include [+PLURAL], [+POSSESSIVE], and [+PARTITIVE]. For example, the difference in grammaticality between (328a) and (b) is argued to be due to the fact that the singular demonstrative is not specified with strong agreement features; namely, [+PLURAL].

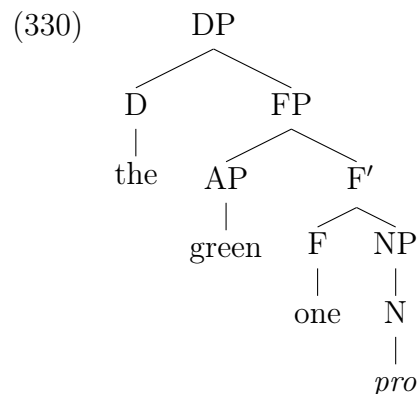
- (328) a. Although she might order these books, Mary won’t buy those ~~books~~.
- b. \* Although John doesn’t like that air conditioner that he bought at Sears, he likes this ~~air conditioner~~ that Mary got at K-Mart.
- (adapted from Lobeck 1995:42, 44)

A similar analysis comes from Kester (1996), who argues that null nouns are licensed by functional heads that bear strong agreement. She follows Cinque (1994) and proposes that adjectives sit in specifiers of functional projections. The functional head has strong features as a result of spec-head agreement with the adjective. Such an analysis is supported by the

fact that languages like Dutch and Spanish have overt morphology in cases of NP-ellipsis. In Dutch, the remnant adjective takes an *-e* suffix, which is argued to make the functional head a licenser of ellipsis; see (329).



In cases of English NP-ellipsis, there is no overt inflectional morphology. Kester claims that *one* is inserted into the functional so that it can license the null noun, as depicted in (330).



However, the generalization between overt agreement on remnant adjectives and the licensing of ellipsis is problematic. For example, Sleeman (1996) observes that agreement is not necessary to trigger ellipsis in French. As shown in (331), *vert* ‘green’ does not bear agreement morphology, but ellipsis can still occur. Given the analyses of Lobeck and Kester, we expect ‘green’ to appear with overt feminine agreement morphology, and would have the surface form *verte* ‘green’, contra to fact.

- (331) De ces robes, je préfère la vert foncé.  
 of these dresses.FEM, I prefer the green deep  
 ‘Of these dresses, I prefer the deep green one.’ (Sleeman 1996:14)

Ntelitheos (2004) shows that modifiers in Malagasy do not exhibit agreement with their nominal head, but ellipsis is still licensed. The adjective *volotany* ‘brown’ in (332) does not have overt agreement or gender morphology, but NP-ellipsis is still possible.

- (332) Hitan’i Koto ny alika mainty ary Rasoa ny volontany.  
 saw K. DET dog black and R. DET brown  
 ‘Koto saw the black dog and Rasoe saw the brown one.’ (Ntelitheos 2004:33)

Also, *same* and *other* in English license ellipsis without a pronominal *one*. Note that both *same* and *other* in (333) do not bear overt agreement morphology, which is unexpected under both Lobeck’s (1995) and Kester’s (1996) account.

- (333) a. I like your dress. I will buy the same ~~dress~~.  
 b. Take this piece. I’ll take the other ~~piece~~. (Ntelitheos 2004:32)

When we turn to Hocak we see that attributive adjectives in Hocak do not take number or gender morphology. Consider (334): the object NP in the second conjunct is elided, but it is interpreted as ‘pencil’. As indicated by the morpheme *wa-* that encodes plural object agreement, the object is plural. The adjective in the second conjunct does not bear its own agreement, yet NP-ellipsis is possible.

- (334) a. Bryanga wiiwagax šuucra waruwj anaga Meredithga ~~wiiwagax~~  
 Bryan-ga wiiwagax šuuc-ra wa-Ø-ruwj anaga Meredith-ga wiiwagax  
 Bryan-PROP pencil red-DEF 3PL.O-3S-buy and Meredith-PROP pencil  
 coora waruwj.  
 coo-ra wa-Ø-ruwj  
 blue-DEF 3PL.O-3S-buy  
 ‘Bryan bought the red pencils, and Meredith bough the blue (pencils).’



- b. Matejaga      waasge xunura      waɣɣ      anaga Sarahga      ~~waasge~~  
 Mateja-ga      waasge xunɣ-ra      wa-Ø-ɣɣ      anaga Sarah-ga      waasge  
 Mateja-PROP plate      small-DEF 3PL.O-S-make and      Saragh-PROP plate  
 xetera      waɣɣ.  
 xete-ra      wa-Ø-ɣɣ  
 big-DEF 3PL.O-3S-make  
 ‘Mateja made the small plates and Sarah made the big (plates).’

In sum, the agreement morphology with superlatives is not a factor for licensing ellipsis.<sup>58</sup>

I therefore conclude that NP-ellipsis in Hocak does not require agreement morphology as a mechanism for ellipsis.

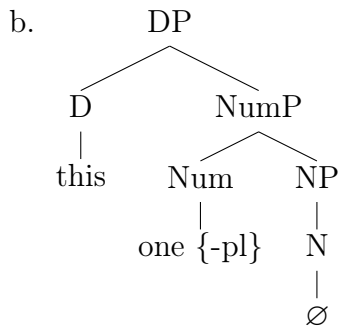
#### 4.7.2 Llombart-Huesca (2002)

Llombart-Huesca (2002) argues that the presence *one* in English NP-ellipsis is due to a last resort rule of *one*-insertion. In particular, *one* is inserted to give support to a morphological affix that would otherwise be stranded. She follows Lobeck (1995) and assumes that [+PLURAL], [+POSS], and [+PART] are features that license empty categories (i.e., *pro*); however, the empty category that is licensed by strong agreement is a Num head instead of an N(P). A null Num head is only licensed by an immediate c-commanding element with strong features. For Llombart-Huesca, *one*-insertion happens in two environments. The first environment is when the determiner or demonstrative does not have strong agreement features. Thus, there is no licenser for a null Num head. *One* is inserted to support the null singular affix in Num, as shown in (335) (Llombart-Huesca 2002:78).

- (335) a. I like this car but I don’t like this one.

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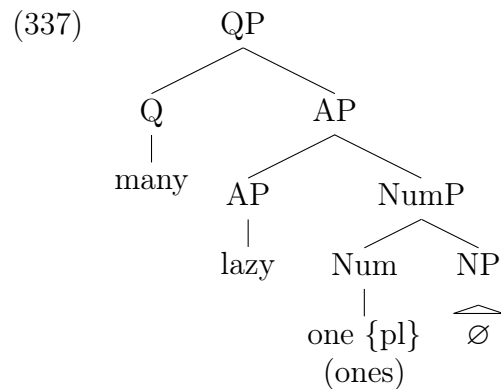
<sup>58</sup>Kester (1996) argues that superlatives in English possesses rich morphology, as the adjective is marked with the superlative morpheme *-est*. However, since both Lobeck’s and Kester’s analyses are based on the notion that information on the elided noun is preserved on a remnant adjective, it is unclear how a superlative morpheme helps recover this information.



The second situation when *one* is inserted involves intervention effects with attributive adjectives. Llobart-Huesca (2002:78) presents the example in (336), which show that *one* is required, despite the fact that the licenser has strong agreement features (plural).

(336) All the students took the exam but many lazy ones ∅ failed.

She depicts the elided noun phrase in (336) as (337). If an adjective intervenes between the licenser and the Num head, then the number morpheme cannot attach to lexical material. As a result *one* is inserted into Num.



A potential problem with extending this proposal to Hocak is that the head noun (or some pronominal, such as *hižq* ‘one’) can be elided in cases similar to (336): for instance, NP-ellipsis is available with quantifiers like *hanqac* ‘all’ and *nyyp* ‘two’, as illustrated in (338). The adjective *seep* ‘black’ intervenes between the quantifier and the elided noun in

(338a). A similar example is shown in (338b), where *šuuc* ‘red’ is between the elided noun and *nyup* ‘two’.<sup>59</sup>

- (338) a. Matejaga    šuuk ziira    hanaac waaja    anaga Sarahga    ~~šuuk~~  
 Mateja-ga    šuuk zii-ra    hanaac wa-Ø-haja    anaga Sarah-ga    šuuk  
 Mateja-PROP dog brown-DEF all    3PL.O-3S-see and Sarah-PROP dog  
 seep-ra    hanaac waaja.  
 seep-ra    hanaac wa-Ø-haja  
 black-DEF all    3PL.O-3S-see

‘Mateja saw all of the brown dogs, and Sarah saw all the black (dogs).’

(Johnson and Rosen 2014b, (16))

- b. Meredithga    ksee coora    taani ruwi    anaga Bryanga    ~~ksee~~  
 Meredith-ga    ksee coo-ra    taani Ø-ruwi    anaga Bryanga    ksee  
 Meredith-PROP apple green-DEF three 3S-buy and Bryan-PROP apple  
 šuucra    nyup ruwi.  
 šuuc-ra    nyup Ø-ruwi  
 red-DEF two    3S-buy

‘Meredith bought three green apples and Bryan bought two red (apples).’

(Johnson and Rosen 2014b, (15))

It is important to note that nouns in Hocak are not marked for plural or singular, as Hocak is a head-marking language. Thus, all overt agreement morphology is on the verb.<sup>60</sup> As seen above in (334) for example, the prefix *wa-* encodes the object as plural. However, Hocak could lack a NumP that sits between QP and NP, and that number is interpreted somewhere else in the DP. This is consistent with the view that Wiltschko (2008) takes: she claims that cross-linguistically, number can merge in a variety of locations in the DP. If number does not merge in Num, then the Hocak data would not be applicable to Llombart-Huesca’s analysis.

<sup>59</sup>When a noun is modified by numerals and quantifiers in Hocak, the noun requires the definite article *-ra*.

<sup>60</sup>However, there is one exception to this: Hocak possesses a 3rd person plural demonstrative *-nqaka* (see chapter 1, section 1.2.5).

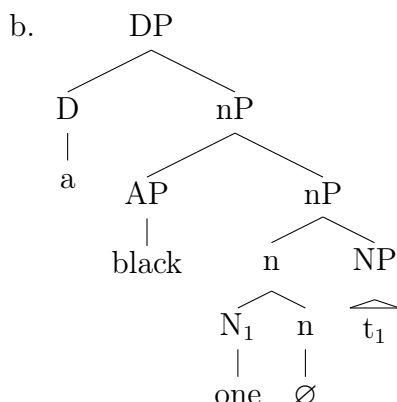
A full analysis of number in Hocak is well beyond the scope of this appendix. It is not immediately clear where number (Num) is located in the Hocak. However, it could still be possible that Hocak has a NumP that sits between QP and NP as English does. Differently than English, Num in Hocak is null with both plural and singular nouns. If this were indeed the case, Num would need to be overtly realized in (336), but these examples show that the head noun can still be elided. Given this possibility, I suggest that the operation outlined in section 4.5 above (cf. Aelbrecht 2010) better fits with the Hocak data.

### 4.7.3 Corver and van Koppen (2011)

Corver and van Koppen (2011) offer a proposal of NP-ellipsis with adjectival remnants, and investigate both the pronominalization and elision strategies in a few Dutch dialects and in English. They conclude that while some languages only use one strategy, some languages (e.g., Frisian) can use both. Corver and van Koppen (2011:393–394) follow Lobeck’s (1995) distinction between both strategies. Agreement on remnant adjectives indicates that the head noun has been elided (see also Kester 1996), and agreement allows for the nominal head to be “recovered.” On the other hand, the pronominal ONE provides the lexical content of the noun, and thus the ellipsis site can be identified.

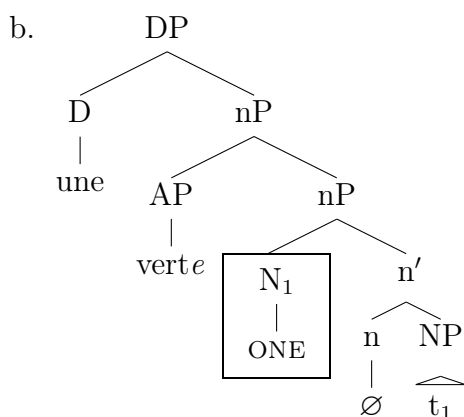
In particular, they argue for a complex noun phrase with an nP layer above NP. Adjectives are adjoined above NP (e.g., to nP). Example (339) illustrates the pronominalization strategy. The pronominal *one* in English moves to the phonologically empty n head. N moves to n because the noun needs to be “nominalized” by the functional category n, which encodes the phrase as nominal (cf. Marantz 1997).

(339) a. a black one



Next, consider their analysis of the elision strategy. Example (340a) illustrates French NP-ellipsis with the remnant adjective *verte* ‘green’. The structure of the second noun phrase in (340a) is schematized in (340b). The head noun moves to the specifier of nP. Following Kayne (2005), they propose that the noun in Spec,nP is rendered invisible at PF.

- (340) a. J’ai acheté une voiture blanche et Marie a acheté une  
 I.have bought a.FEM.SG car white.FEM.SG and Marie has bought a.FEM.SG  
 verte.  
 green.FEM.SG  
 ‘I bought a white car and Marie bought a green one.’ (Corver and van Koppen 2011:393)



Corver and van Koppen’s (2011) analysis seems to capture the generalizations of English and the Dutch dialects they investigate. However, it runs into problems when faced with some of the Hocąk data. In the structure that they propose, adjectives are consistently

merged in a position above the ellipsis site, which is Spec,nP. Thus, attributive adjectives cannot be elided with the head noun. However, adjectives in Hocak can be elided with the head noun, as demonstrated in (341) (repeated from (313b)).

- (341) Meredithga      wağıği coo xetera ruwı anaga Bryanga      ~~wağıği coo~~  
 Meredith-ga      wağıği coo xete-ra Ø-ruwı anaga Bryan-ga      wağıği coo  
 Meredith-PROP ball      blue big-DEF 3S-buy and      Bryan-PROP ball      blue  
 xunıra ruwı.  
 xunı-ra Ø-ruwı  
 small-DEF 3S-buy  
 ‘Meredith bought the big blue ball and Bryan bought the small (blue ball).’

In (341), the noun in the second conjunct has the interpretation where the ball is small and blue, yet *coo* ‘blue’ is not overt. Therefore, if adjectives are merged in a position above the ellipsis site, the data in (341) remain unexplained. There is no straightforward way for an adjective to be elided with the head noun.

The current proposal thus fares better than all three of the approaches that are outlined above. First, Hocak exhibits NP-ellipsis without the overt agreement as a licensing mechanism. Second, ellipsis can freely occur when the noun is modified by adjectives. Third, adjectives can be elided as part of NP-ellipsis. The data strongly indicate that the elision strategy is the correct one for Hocak. While a pronominalization strategy might still be available in the language, I leave an in-depth study on the existence of the two strategies in Hocak for future research.

Lastly, note that my account of NP-ellipsis is consistent with proposed analyses of ellipsis in the VP-domain. That is, Aelbrecht (2010) uses an Agree relation between the [E]-feature and a licensing head to account for Dutch modal complement ellipsis, sluicing, English VP-ellipsis, pseudogapping, and ellipsis with British *do*.<sup>61</sup>

<sup>61</sup>See Johnson (2013b) for arguments that VP-ellipsis in Hocak is derivational. She shows that VP-ellipsis bleeds object agreement, which Johnson claims is straightforwardly accounted for by Aelbrecht’s theory.

## Chapter 5

## Conclusion

### 5.1 Summary of Thesis

In this thesis, I have investigated the syntactic nature of adjectives in the Siouan language, Hocak. In chapter 2, I argued that Hocak has the lexical category adjective, and I showed that adjectives surface in three predictable environments: attributive modification, the complement of degree heads, and as resultative predicates. Chapter 3 further examined the domain of attributive modification. There I illustrated that prenominal adjectives have a restricted order, whereas postnominal adjectives are freely ordered. I provided an analysis, according to which the ordering of adjectives in Hocak can be accounted for with two functional heads that contain a stack of features that license attributive adjectives. Then in chapter 4, I explored the intersection between attributive modification and superlative adjectives. I gave a number of arguments that indicate that superlatives must be attributive in Hocak (cf. Matushansky 2008). I concluded that an NP-ellipsis account of superlative adjectives is the right one.

## 5.2 Contributions and Implications

Before concluding the thesis, I review some of the broader theoretical and empirical contributions and implications.

First, Hocak has been previously described as having only nouns and verbs as lexical categories. That is, the language lacks a distinct adjective class. Lipkind (1945), Susman (1943), and Helmbrecht (2006a) have focused on the morphological similarities between adjectives and verbs: since these lexical categories behave similarly, they conclude that Hocak encodes adjectival semantics through a class of verbs. However, I have shown that this is incorrect. Adjectives do not behave like verbs syntactically. I thus argued that adjectives exist in Hocak. The conclusion that Hocak has adjectives supports the claims of Baker (2003a) and Dixon (2004): evidence for adjectives can be found in all languages. From the viewpoint of Universal Grammar, Hocak provides clear evidence for an inventory of lexical items that categorize as adjectives.

Second, Hocak attributive adjective orders are more flexible than previously thought. While material and nationality/origin classes are rigidly ordered, all other classes are freely ordered. I argued that direct modification APs can be freely ordered. A lack of ordering does not truly diagnose an adjective's origin (i.e., direct or indirect modification). The data from Hocak suggest that there could be more than one parametric possibility in direct modification source (cf. Watanabe 2010).

Third, superlative adjectives in Hocak are always attributive. I have provided strong evidence for this conclusion from a *single* language. The data conclusively support an NP-ellipsis account of superlative phrases without an overt head noun. I followed Aelbrecht (2010) and claimed that NP-ellipsis in Hocak is best analyzed through a derivational account of ellipsis. Other analyses of ellipsis do not account for all of the properties of NP-ellipsis in Hocak.



Lastly, this thesis brings Hocak into the theoretical spotlight (see also, Johnson 2015).

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