

# On the Structure and Constituency of Hocak Resultatives\*

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**Abstract:** This paper explores the structure and constituency of Hocak (Siouan) “adjectival” resultatives. I argue that 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. First, I show that the result is an XP and is not a full clause (i.e., a CP). Second, I provide evidence that the result is in a VP-internal position. While the focus of this paper is the structure of resultatives in Hocak, resultatives as a construction tend to highlight other important characteristics of a language’s grammar. I argue that the result predicate is an AP. This puts Hocak resultatives in line with English adjectival resultatives. The data from resultatives thus suggest that Hocak has the lexical category adjective, contra the previous descriptions of lexical categories in Hocak (see Lipkind 1945, Susman 1943, and Helmbrecht 2006). The goal of this paper is therefore to present new Hocak data, provide a structural analysis of resultatives, and then explore the adjectival nature of resultative predicates in the language.

## 1 Introduction

This paper explores the structure and constituency of Hocak “adjectival” resultatives. In Hocak resultatives, the result predicate appears to the left of the verb, as exemplified in (1) with *paras* ‘flat’ and *šuuc* ‘red’.<sup>1</sup>

- (1) a. Meredithga      maqsra      paras gistakšana.  
Meredith-ga      maqs-ra      paras Ø-gistak-šana  
Meredith-PROP metal-DEF flat    3S/O-hit-DECL  
‘Meredith hit the metal flat.’

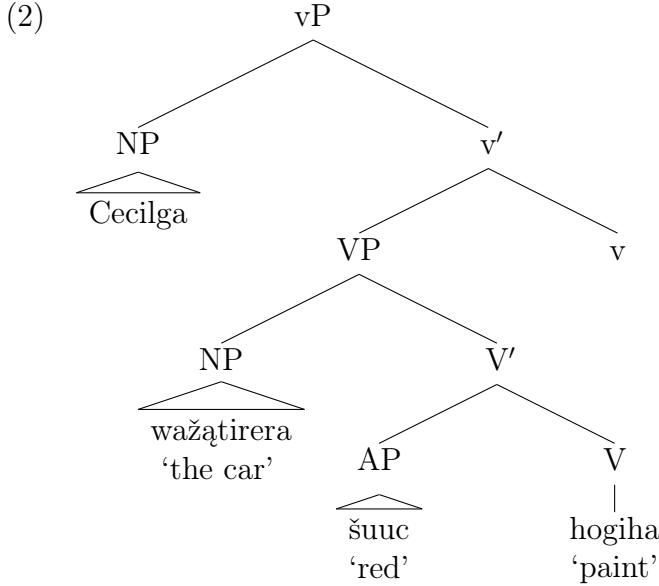
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<sup>1</sup>The following abbreviations are used: 1, 2, 3 – 1st, 2nd, 3rd person; COMP – complementizer; DECL – declarative; DEF – definite; INDEF – indefinite; O – object agreement; PL – plural; PROP – proper noun; REFL – reflexive; S – subject agreement. Unless noted otherwise, the data comes from elicitation with Cecil Garvin. My methodology follows the standard techniques of translation and acceptability judgment tasks (see Matthewson 2004 for more details).

- b. Cecilga      wažatirera    šuuc hogiha.  
 Cecil-ga      wažatire-ra šuuc Ø-hogiha  
 Cecil-PROP car-DEF    red    3S/O-paint  
 ‘Cecil painted the car red.’

The analysis of examples like those in (1) is as follows: I propose that Hocak resultatives project a phrasal AP as the complement of the verb in a Larsonian “VP shell” (i.e., a recursive VP structure; Larson 1988). The object of the resultative is in the specifier of VP. Thus, the sentence in (1b) has the basic structure in (2).<sup>2</sup>



While the focus of this paper is to propose a structure of resultatives in Hocak, resultatives as a construction tend to highlight other important characteristics of a language’s grammar. Hocak resultatives are no exception. I argue that the result predicate is an AP. This puts Hocak resultatives in line with English adjectival resultatives. The data from resultatives thus suggest that Hocak has the lexical category adjective, contra the previous descriptions of lexical categories in Hocak (see Lipkind 1945, Susman 1943, and Helmbrecht 2006). The goal of this paper is therefore to present new Hocak data, provide a structural analysis of resultatives, and then explore the adjectival nature of resultative predicates in the language.

The rest of this paper is organized as follows: Section 2 provides background on Hocak syntax and resultatives in Hocak. Section 3 examines the constituency of Hocak resultatives. In section 4, I give a syntactic representation of resultatives in Hocak. In section 5, I argue that the result predicate projects as an AP. Section 6 concludes the paper.

<sup>2</sup>I assume the Principles and Parameters framework (see also the Minimalist Program and X-bar theory; Chomsky 1995). A phrase in this framework consists of three basic layers. The head ( $X^0$ ) specifies the syntactic type or lexical category of the phrase (e.g., V for verb, N for noun, and A for adjective). Complements are arguments (e.g., objects) of  $X^0$  and are sisters to the X head. Specifiers (Spec for short) are often reserved for subjects of the the phrase. They are sisters to  $X'$ .

## 2 Overview of Hocak Syntax

In this section, I first present background information on word order in Hocak, and then I discuss some preliminary characteristics of Hocak resultatives.

### 2.1 Word Order in Hocak

Unmarked word order in Hocak is SOV, as in (3). Variation in word order has discourse effects: a rightward displaced noun phrase is interpreted as discourse-old in (4a), while a leftward moved noun phrase serves a different discourse function (e.g., topic or focus) in (4b). Note that the interpretation in (4b) with OSV word order is possible because there is a pause (represented by the comma) that offsets the fronted object.

- (3) Wijukra šuykra haja  
wujuk-ra šuyk-ra Ø-haja  
cat-DEF dog-DEF 3S/O-see  
‘The cat saw the dog.’
- (4) a. Wijukra haja, šuykra  
wujuk-ra Ø-haja šuyk-ra  
cat-DEF 3S/O-see dog-DEF  
‘The cat saw something, the dog.’  
b. Šuykra, wijukra haja  
šuyk-ra wujuk-ra Ø-haja  
dog-DEF cat-DEF 3S/O-see  
‘The dog, the cat saw (it).’

In double object constructions, the canonical word order is subject–indirect object–direct object–verb. This is shown below in (5).

- (5) Hinuknihiža hocic̣hiža wiiwagaxhiža hok’u.  
hinukni-k-hiža hocic̣-hiža wiiwagax-hiža Ø-hok’u  
girl-INDEF boy-INDEF pencil-INDEF 3S/O-give  
‘A girl gave a boy a pencil.’

In Hocak, word order is crucial to disambiguate the subject from the object: the first argument is interpreted as the subject. In (6), 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’.

- (6) Wažatirera hinukra ruw̃.  
wažatire-ra hinuk-ra Ø-ruw̃  
car-DEF woman-DEF 3S/O-buy  
‘The car bought the lady.’ OR ‘The lady bought the car.’

Johnson and Rosen (2014) argue that Hocak is underlying head-final, by providing evidence from quantifier scope and postverbal predicates. Thus, I represent Hocak as head-final here.

## 2.2 Resultatives in Hocak: Some Preliminaries

Resultatives are complex predicates that put together a means predicate (always a verb) and a result predicate, where neither is licensed by a conjunction or an adposition (Williams 2008). In (7), the result *šuuc* ‘red’ immediately precedes the means *hogiha* ‘paint’, and the direct object *wažqirera* ‘the car’ surfaces to the left of result. Since the result is typically analyzed as the complement of the means (Li 1999, Williams 2008), the result-means order would be expected in a head-final language.

- (7) Cecilga      wažqirera    šuuc hogiha.  
 Cecil-ga      wažqire-ra    šuuc Ø-hogiha  
 Cecil-PROP car-DEF      red    3S/O-paint  
 ‘Cecil painted the car red.’

The word order of resultatives and sentences with object-internal attributive modifiers is similar. Compare the position result phrase in (7) with the position of the attributive modifier in (8).

- (8) Cecilga      wažqire šuucra    hogiha.  
 Cecil-ga      wažqire šuuc-ra    Ø-hogiha  
 Cecil-PROP car      red-DEF 3S/O-paint  
 ‘Cecil painted the red car.’

In (8), the modifier *šuuc* ‘red’ is located to the right of the noun it modifies, *wažqire* ‘car’. This attributive modifier cannot be to the right of the definite article *-ra*. This entails that *šuuc* ‘red’ in (8) is in an NP-internal position. By comparison, the result in (7) (*šuuc* ‘red’) is to the right of the definite article *-ra*, which indicates that the result is in an NP-external position.

Moreover, the result AP can “scramble,” or move leftward, to a position before the object or subject, as illustrated in (9). In contrast, attributive modifiers do not have this option, as in (10). This contrast demonstrates that resultative predicates are not treated as part of the NP-object, and provides further evidence that they are not in an NP-internal position.

- (9) a. Cecilga      **šuuc**, wažqirera    woogiha.  
       Cecil-ga      šuuc    wažqire-ra    wa-Ø-hogiha  
       Cecil-PROP red    car-DEF    3O.PL-3S-paint  
       ‘Cecil painted the cars red.’  
 b. **Šuuc**, Cecilga      wažqirera    woogiha.  
       šuuc    Cecil-ga      wažqire-ra    wa-Ø-hogiha  
       red    Cecil-PROP car-DEF    3O.PL-3S-paint  
       ‘Cecil painted the cars red.’
- (10) \* Meredithga      **šuuc**, wiišgacra    ruwĭ.  
       Meredith-ga      šuuc, wiišgac-ra    Ø-ruwĭ  
       Meredith-PROP red    toy-DEF    3S/O-buy  
       Intended: ‘Meredith bought the red toy.’

It should be noted that resultative constructions have been categorized cross-linguistically based on whether the lexical semantics of the verb and the result are independent of each other. In his typology of Japanese and English resultative predicates, Washio (1997) presents two types of resultatives: *weak* and *strong*. When the lexical semantics of the verb entails a change, it is called a weak resultative. When the verb in resultative constructions does not entail a change, Washio refers to this class as a strong resultative. In other words, the classification between weak and strong resultatives depends on whether the matrix verb denotes a result. Consider the two English examples in (11).

- (11) a. Sam painted the wall red.  
b. Alex pounded the metal thin.

In (11a), the verb *paint* entails that there is some change, since *to paint* means to apply color. *Paint* represents an example of a weak resultative. In (11b), however, the verb *pound* does not entail that the object being pounded will become flat. That is, pounding metal could result in the metal being bumpy. Thus, there is no entailed change with *pound*. The verb *pound* is an example of a strong resultative.

In Hocak, resultatives are possible when the verb lexically specifies a change, as with *hogiha* ‘paint’ in (7) above and with *gižap* ‘polish’ in (12) below.

- (12) Meredithga      maqsra      gišinišini gižapšana.  
Meredith-ga      maqs-ra      gišinišini Ø-gižap-šana  
Meredith-PROP metal-DEF shiny      3S/O-polish-DECL  
‘Meredith polished the metal shiny.’

A verb like *gižap* ‘polish’ strongly denotes an activity whereby its object (theme) changes its state to become “shiny.” Because *gižap* implies this change of state, it is considered a weak resultative.

They can also be formed with verbs that do not specify a change, as with *gistak* ‘hit’ and *rucgis* ‘cut’ in (13).

- (13) a. Meredithga      maqsra      paras gistakšana.  
Meredith-ga      maqs-ra      paras Ø-gistak-šana  
Meredith-PROP metal-DEF flat      3S/O-hit-DECL  
‘Meredith hit the metal flat.’  
b. Matejaga      peešjira      žiipik rucgisšana.  
Mateja-ga      peešji-ra      žiipik Ø-rucgis-šana  
Mateja-PROP hair-DEF short      3S/O-cut-DECL  
‘Mateja cut the hair short.’

Similar to *pound* in English, *gistak* ‘hit’ in Hocak does not denote an event whereby its object results in a particular state (e.g., flat). Thus we can consider this verb a strong resultative. The verb *rucgis* ‘cut’ belongs to the class of strong resultatives for the same reasons: the event denoted by *rucgis* ‘cut’ does not contain the notion of being short. Thus, Hocak exhibits both strong and weak resultatives.

With this background in mind, I turn to the next section, where I discuss more about the constituency of Hocak resultatives.

### 3 The Constituency of Hocak Resultatives

This section outlines some diagnostics that support the structure presented in (2) for Hocak resultatives. In section 3.1, I provide evidence that the result is a phrase and not a clause, while in section 3.2 I show that the result is in a VP-internal position.

#### 3.1 The Result Predicate as a Phrase

In this subsection, I show that the result is an XP and is not a full clause (i.e., a CP).

First, it should be noted that the result is not a head that forms a compound with the matrix verb; that is, the verb and the result in the construction should not be considered a single lexical unit, such as  $V^0$  or  $A^0$ . The result can include adverbial modifiers, such as *hikyhe* ‘quickly’ in (14a), and the intensifier suffix *-xji* in (14b).

- (14) a. Meredithga maqsra paras **hikyhe** gistakšana.  
 Meredith-ga maqs-ra paras hikyhe Ø-gistak-šana  
 Meredith-PROP metal-DEF flat quickly 3S/O-hit-DECL  
 ‘Meredith hit the metal flat quickly.’  
 b. Meredithga maqsra parasxji gistakšana.  
 Meredith-ga maqs-ra paras-**xji** Ø-gistak-šana  
 Meredith-PROP metal-DEF flat-very 3S/O-hit-DECL  
 ‘Meredith hit the metal very flat.’

A piece of evidence that the result predicate is not a clause comes from the fact the result phrase cannot take declarative (15a), or complementizer (15b) suffixes.

- (15) a. \*Matejaga peeşjira žiipikšana rucgisšana.  
 Mateja-ga peeşji-ra žiipik-šana Ø-rucgis-šana  
 Mateja-PROP hair-DEF short-DECL 3S/O-cut-DECL  
 Intended: ‘Mateja cut the hair short.’  
 b. \*Matejaga peeşjira žiipikra rucgisšana.  
 Mateja-ga peeşji-ra žiipik-ra Ø-rucgis-šana  
 Mateja-PROP hair-DEF short-COMP 3S/O-cut-DECL  
 Intended: ‘Mateja cut the hair short.’

The result also cannot take the future tense marker *kjane*, as in (16), even though the hair becoming short would necessarily take place after cutting it.

- (16) \*Matejaga peeşjira žiipik ikjane rucgisšana.  
 Mateja-ga peeşji-ra žiipik kjane Ø-rucgis-šana  
 Mateja-PROP hair-DEF short FUT 3S/O-cut-DECL  
 Intended: ‘Mateja cut the hair short.’

In addition, the result cannot bear the negation suffix *-ni*. Negation in Hocak is bipartite: the combination of the free particle *haqke* and the suffix *-ni* are both required to form the negative. The example in (17a) shows that *-ni* attaches to the matrix verb, while (17b) illustrates that the result cannot appear with *-ni*.

- (17) a. Meredithga haake maasra paras gistaknj.  
Meredith-ga haake maas-ra paras Ø-gistak-**nj**  
Meredith-PROP NEG metal-DEF flat 3S/O-hit-NEG  
‘Meredith did not hit the metal flat.’
- b. \*Meredithga haake maasra parasnj gistak.  
Meredith-ga haake maas-ra paras-**nj** Ø-gistak  
Meredith-PROP NEG metal-DEF flat-NEG 3S/O-hit  
Intended: ‘Meredith did not hit the metal flat.’ OR  
‘Meredith hit the metal such that its surface didn’t get fully flat.’

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 (15)–(17) are ungrammatical, the result must not be a clause.

Third, Hocak resultatives respect the *Direct Object Restriction* (DOR): the result predicate must be predicated on the NP in object position (Levin and Rappaport Hovav 1995). That is, the result must be predicated of a transitive object or the subject of an unaccusative, but not the subject of a transitive or an unergative verb.<sup>3</sup> This restriction is shown in (18) with the transitive verb *gistak* ‘hit’.

- (18) Rockyga wanjra šuuc gistakšana.  
Rocky-ga wanj-ra šuuc Ø-gistak-šana  
Rocky-PROP meat-DEF red 3S/O-hit-DECL  
= ‘Rocky hit the meat red.’  
≠ ‘Rocky hit the meat and he was red as a result.’

As seen in (18), since *wanjra* ‘the meat’ is in object position, it can be the subject of the result, while the subject of matrix verb *Rocky* cannot. The contrast in (18) points to the fact that the result is not a clause (i.e., a CP). I follow Li (1999) and assume that when the result can be linked to either the subject or the object and the result plus the means predicate are not formed in the lexicon (i.e., form a compound), the resultative phrase is a clause with a pro-controlled subject (see also Song 2005). According to Chomsky (1982), pro is an empty category of the type [+pronominal, –anaphoric], and Binding Theory states that it cannot be bound within its governing category. Thus, pro could be bound by either the matrix subject or object. Since the result in (18) cannot be linked to the subject, the result cannot be a clause.

Moreover, Hocak resultatives show a contrast in availability between prototypical unaccusative and unergative verbs. Perlmutter (1978) defines unaccusative verbs as ones where the single argument is an underlying object, whereas the argument of an unergative verb is an underlying subject. Typically, unaccusative verbs denote change (e.g., *break*, *melt*) while unergative verbs indicate manner of motion (e.g., *run*) or other bodily functions (e.g., *cry*). In Hocak,

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<sup>3</sup>Note that the DOR can also apply to so-called “fake” objects (e.g., reflexives) of unergative verbs. For example, the result phrase *hoarse* can be predicated on *herself* in (i). See Carrier and Randall (1992), Li (1999), and Wechsler (2005) for more details on the DOR.

(i) The woman sang herself hoarse.

intransitive verbs that take stative agreement morphemes correspond to unaccusatives, and the set of intransitive verbs that bear active agreement morphemes are parallel to unergative verbs (see e.g., Williamson 1984, Woolford 2010).

Prototypical unaccusatives in (19), such as *ziibre* ‘melt’ and *taaxu* ‘burn’, can serve as the matrix verb of resultatives. On the other hand, prototypical unergative verbs in (20), such as *nqawq* ‘sing’ and *nqak* ‘run’, cannot.

- (19) a. Xaigirara      sgaasgap *ziibre*.  
           xaigira-ra      sgaasgap Ø-*ziibre*  
           chocolate-DEF sticky    3S-melt  
           ‘The chocolate melted sticky.’
- b. Waisgapra seep    *taaxu*.  
           waisgap-ra seep    Ø-*taaxu*  
           bread-DEF black 3S-burn  
           ‘The bread burned black.’
- (20) a. \*Hinukra      *njira*      teek *naqawa*.  
           hinuk-ra      *nji*-ra      teek Ø-*naqawa*  
           woman-DEF throat-DEF sore 3S-sing  
           Intended: ‘The woman sang her throat sore.’
- b. \*Henryga      wagujiirera    paras *naakšana*.  
           Henry-ga      wagujiire-ra    paras Ø-*naakšana*  
           Henry-PROP shoe-DEF    flat    3S-run-DECL  
           Intended: ‘Henry ran the shoe(s) flat.’

Note that the restriction with unergative verbs also holds when the reflexive morpheme *kii-* denotes the so-called “fake” reflexive/object of the predicate; see (21).<sup>4</sup>

- (21) \*Hunterga      hoix’ik *kiinaakšana*.  
           Hunter-ga      hoix’ik <**kii**>Ø-*naakšana*  
           Hunter-PROP tired    <REFL>3S-run-DECL  
           Intended: ‘Hunter ran himself tired.’

The DOR states the result must be predicated of the object. If we assume that the subjects of the verbs in (20) are underlying objects, we can maintain the DOR. On the other hand, since unergative verbs do not have an underlying object, no resultative interpretation is possible in (20) and (21).<sup>5</sup>

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<sup>4</sup>Under Washio’s (1997) typology, intransitive resultatives are a type weak resultative. For example, resultatives with an unergative verb like ‘run’ can form a weak resultative. Recall that Hocak has transitive strong resultatives (see (13) above). Hocak resultatives thus present a counterexample to Washio’s typology: Hocak has transitive strong resultatives but lacks intransitive strong resultatives. I leave further discussion of these examples with respect to Washio’s typology for future work.

<sup>5</sup>The DOR holds consistently in English for transitive objects. In the case of unergative verb phrases, a fake reflexive/object ensures that there is an object that the result can be linked to. (See the translations in (20) and (21)).



### 3.2 VP-Internal Status of the Result Predicate

In this subsection, I argue that the result predicate is the complement of the verb. I first show that the result predicate must be VP-internal, and then I provide evidence that resultatives in Hocak project as a binary structure.

Levin and Rappaport Hovav (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 (22) and (23): the light verb *uu* can replace either a minimal VP or a multi-segmental VP, resulting from adjunction to VP. Example (22) shows an example of VP-ellipsis that targets on the object and the verb, while in (23), VP-ellipsis targets a VP-level adjunct, such as *xjanqre* ‘yesterday’.

- (22) Cecilga [VP waʒatirehiʒa ruwɨ] kjane anaʒa nee ſge [haɯɯ] kjane.  
 Cecil-ga waʒatire-hiʒa Ø-ruwɨ kjane anaʒa nee ſge ha-ɯɯ kjane.  
 Cecil-PROP car-INDEF 3S/O-buy FUT and I also 1S-do FUT  
 ‘Cecil will buy a car, and I will too.’ (Johnson 2013, (5))

- (23) Cecilga [VP xjanqre waʃi] anaʒa Bryanga ſge [ɯɯ].  
 Cecil-ga xjanqre Ø-waʃi anaʒa Bryan-ga ſge Ø-ɯɯ.  
 Cecil-PROP yesterday 3S-dance and Bryan-PROP also 3S-do  
 ‘Cecil danced yesterday, and Bryan did too.’ (Johnson 2013, (6a))

As shown in (24b), it is not possible to “strand” the result predicate *ʃuuc* ‘red’ under VP-ellipsis. It thus follows that the result is inside the VP, rather than adjoined to VP.

- (24) a. Hunterga [VP naʒju seep hogiha] anaʒa Bryanga ſge [ɯɯ].  
 Hunter-ga naʒju seep Ø-hogiha anaʒa Bryan-ga ſge Ø-ɯɯ  
 Hunter-PROP hair black 3S/O-dye and Bryan-PROP too 3S-do  
 ‘Hunter dyed the hair black and Bryan did, too.’  
 b. \*Hunterga naʒju seep hogiha anaʒa Bryanga ſge **ʃuuc** ɯɯ.  
 Hunter-ga naʒju seep Ø-hogiha anaʒa Bryan-ga ſge ʃuuc Ø-ɯɯ  
 Hunter-PROP hair black 3S/O-dye and Bryan-PROP too red 3S-do  
 Intended: ‘Hunter dyed the hair black and Bryan did red, too.’

Example (24) contrasts with (25). (25) contains the adverb *wasisik* ‘energetically’ as a depictive. Since depictives are typically analyzed adjuncts that occupy a VP-external position (Levin and Rappaport Hovav 1995), they can be stranded.

- (25) Bryanga [VP waarucra hoix’ik waʒa] anaʒa Meredithga **wasisik**  
 Bryan-ga waaruc-ra hoix’ik Ø-waʒa anaʒa Meredith-ga wasisik  
 Bryan-PROP table-DEF tired 3S/O-wipe and Meredith-PROP energetic  
 [ɯɯ].  
 Ø-ɯɯ  
 3S-do  
 ‘Bryan wiped the table tired(ly) and Meredith did energetically.’

As we saw in (22), *yü* affects the verb and its complement. Since a result predicate is not strandable with *yü*, it must be the case that the result is inside the minimal VP, and thus is part of the core eventuality of the VP. In other words, it follows that the result is inside the verb phrase.

Another option for the structure of resultatives could be that the verb, the result, and direct object are all sisters in a flat structure. Carrier and Randall (1992) provide such a ternary analysis for English resultatives. However, Bowers (1997) argues that a ternary structure cannot account for structures involving Across the Board movement. This type of movement describes a situation when a syntactic element moves from multiple base positions to a single terminal position. In this conjunctive test, the object and result of both conjuncts form a single constituent (see also Li 1999). An Across the Board structure is possible with Hocak resultatives, as seen in (26), where the verb is moving across conjuncts.

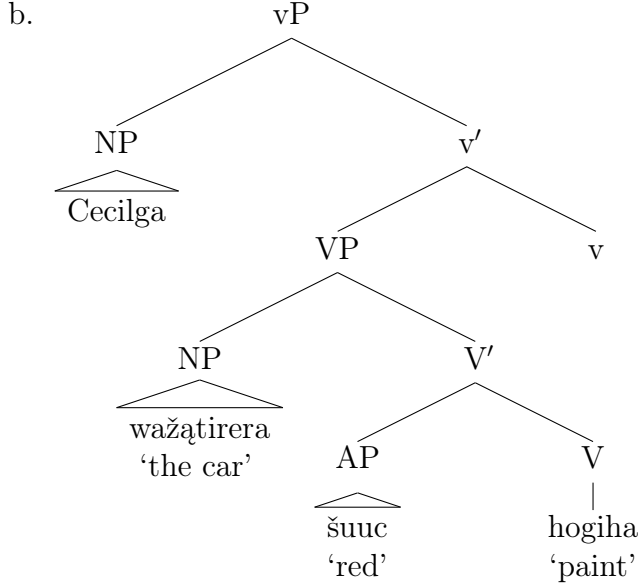
- (26) a. Meredithga maqsra paras gistak anaga waisgap perejk.  
Meredith-ga maqs-ra paras Ø-gistak anaga waisgap perejk  
Meredith-PROP metal-DEF flat 3S/O-hit and bread thin  
‘Meredith hit the metal flat and the bread thin.’
- b. Meredithga maqsra gişinşinî giżap anaga ważatirera sgee.  
Meredith-ga maqs-ra gişinşinî Ø-giżap anaga ważatire-ra sgee  
Meredith-PROP metal-DEF shiny 3S/O-polish and car-DEF clean  
‘Meredith polished the metal shiny and the car clean.’

The ability of Hocak resultatives to participate in Across the Board movement is consistent with an analysis that argues for a binary structure (Bowers 1997). I conclude that Hocak resultatives are straightforwardly analyzable under a binary branching approach. This provides another argument that the result is in a VP-internal position.

## 4 Syntactic Representation of Hocak Resultatives

In this section, I propose that resultatives are in a Larsonian VP-shell structure (Larson 1988): a VP structure takes another VP as its complement. This approach follows Li’s (1999) structure for English resultatives (cf. Hoekstra 1988, Carrier and Randall 1992, Levin and Rappaport Hovav 1995). Larson’s (1988) VP-shells are intended to accommodate the double-object construction, where the left-most object is in a higher position than the right-most. If we maintain a binary branching structure, then a resultative has the same structure as the double-object construction. I claim that the structure for Hocak resultatives is depicted in (27). The result predicate is the complement of the verb, and I assume that the object is base-generated in Spec,VP. The subject is generated in Spec,vP, where “little v” is a semi-functional head that licenses for external arguments (Chomsky 1995).

- (27) a. Cecilga ważatirera şuuc hogiha.  
Cecil-ga ważatire-ra şuuc Ø-hogiha  
Cecil-PROP car-DEF red 3S/O-paint  
‘Cecil painted the car red.’



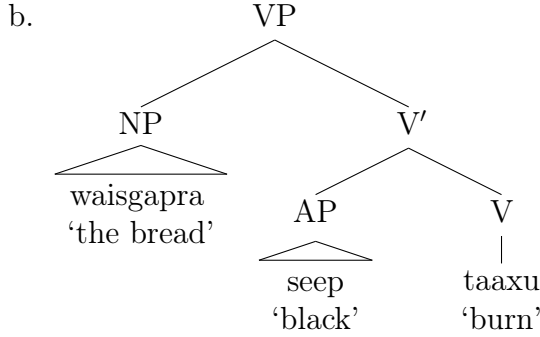
The structure in (27b) straightforwardly explains the facts with respect to Hocak resultatives. First, the result is not a head that forms a compound with the matrix verb since adverbs and intensifiers can intervene. The structure in (27b) shows that the result is an AP and not a CP. This accounts for why the result cannot take complementizer, tense, negation, or declarative suffixes: the result is an AP, which does not contain clause level heads or morphology. This property of result APs is also reflected in the fact that Hocak resultatives obey the DOR. In (18), only the object ‘meat’ can be modified by the result ‘red’. This restriction predicts that the result is not a clause. If the result were a clause, the subject in (18) could also be modified by ‘red’ because resultative phrases that project as CPs have a *pro* subject, which could be linked to the matrix subject. However, this is not the case.

To formalize the relationship between the NP object and the adjective, I follow Li’s (1999) analysis. The AP can assign its theta-role to the object through mutual m-command.<sup>6</sup> In the case of (31), AP and the NP in Spec,VP are both dominated by the same VP node, and they do not dominate each other. Thus, the AP and the object NP mutually m-command each other. On the other hand, the AP does not hold a mutual m-command relationship with the subject in Spec,vP; thus, the AP cannot assign its theta-role to the subject. This results in the DOR effect.

This situation applies to resultatives with unaccusative matrix verbs, as depicted in (28b).

- (28) a. Waisgapra seep taaxu.  
           waisgap-ra seep Ø-taaxu  
           bread-DEF black 3S-burn  
           ‘The bread burned black.’

<sup>6</sup>I assume that m-command refers to a syntactic relation where X m-commands Y if and only if the first maximal projection that dominates X also dominates Y and X does not dominate Y. In (31b), X is the NP *wažatirera* ‘the car’, and Y is the AP *šuuc* ‘red’.



The AP in (28b) has the same position that it has in (27b); that is, it is the complement of the verb. Thus, the AP maintains the same relationship with the object in Spec,VP whether the verb is transitive or intransitive. Consequently, the AP *seep* ‘black’ and the object *waisgapra* ‘the bread’ are within the same VP, and the DOR effect is preserved.

Data from VP-ellipsis has also demonstrated that the result phrase is inside the VP. This is in contrast to depictive phrases, where the depictive can be stranded by VP-ellipsis. Assuming the structure presented above, this contrast falls out naturally. Depictives have been analyzed as VP-adjuncts in English (Levin and Rappaport Hovav 1995); thus, I suggest that a depictive phrase, such as *wasisik* ‘energetically’ in (25), is adjoined the upper VP-shell (i.e., vP) in (27b).<sup>7</sup>

To summarize, I have argued that the resultative secondary predicate is the complement to the main verb, and is a phrase. This accounts for a constellation of facts that concern the properties of Hocak resultatives, including the DOR.

## 5 The Result Predicate and Adjectives in Hocak

Thus far I have assumed without comment that the result predicate is an adjective phrase. This section provides evidence that the result is in fact an AP, and thus that Hocak has adjectives. Traditional grammars (e.g., Lipkind 1945 and Susman 1943) and more recently Helmbrecht (2006) have claimed that Hocak lacks the lexical class adjectives since there is no distinct inflectional morphology for adjectives and verbs. Instead these works claim that adjectives are a class of stative verbs. For reasons of space, I consider only two of these arguments in detail.

First, Helmbrecht (2006) shows 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 purported adjectives and stative verbs exhibit parallel agreement morphology, as shown in (29) and (30), respectively.

- |      |                   |                   |                    |
|------|-------------------|-------------------|--------------------|
| (29) | a. <i>hi-xete</i> | b. <i>ni-xete</i> | c. <i>xete-ire</i> |
|      | 1-big             | 2-big             | big-3S.PL          |
|      | ‘I am big.’       | ‘You are big.’    | ‘They are big.’    |

<sup>7</sup>In this paper, I leave it open whether depictives can adjoin to the lower VP-shell.

- (30) a. *h<sub>i</sub>-šiibre*      b. *n<sub>i</sub>-šiibre*      c. *šiibre-ire*  
          1-fall                      2-fall                      fall-3S.PL  
          ‘I fell.’                      ‘You fell.’                      ‘They fell.’

Example (29) illustrates that the stative set of agreement markers may be used with adjectives: in (29a,b), the prefixes *h<sub>i</sub>-* and *n<sub>i</sub>-* mark 1st and 2nd person respectively, and in (29c) *-ire* encodes third person plural. The example in (30) with the stative verb *šiibre* ‘fall’ shows that this verb bears the same agreement markers. Since Hocak is an active-stative language, the similarities between (29) and (30) follow if apparent adjectives are stative verbs.

Second, apparent adjectives can be used predicatively without any morphological modification or without the help of auxiliaries, as seen in (31a). Helmbrecht (2006) asserts that the lack of auxiliaries is possible for all adjectives in Hocak. This possibility extends to verbs as well. (31a) shows an example of the verb *nij* ‘swim’.

- (31) a. *Wijukra seepšana.*  
          *wijuk-ra Ø-seep-šana*  
          cat-DEF 3S-black-DECL  
          ‘The cat is black.’  
       b. *Hocįkįkra nij eeja nijšana.*  
          *hocįkįk-ra nij eeja Ø-nijp-šana*  
          boy-DEF water there 3S-swim.ACT-DECL  
          ‘The boy swam in the lake.’

Thus, since verbs and purported adjectives may also be the main predicate of the clause, there is no structural difference between adjectives and verbs.

In the following subsections, I present two arguments that the resultative phrase projects as an AP in Hocak resultatives.<sup>8</sup> In the first subsection, I argue that the linear ordering of the result and the matrix verb indicates that the result is an AP. In the second subsection, I turn to the fact that (stative) verbs are ungrammatical as a result predicate. I argue that only gradable predicates (i.e., adjectives) can participate in resultatives.

## 5.1 The Temporal Iconicity Condition and Resultatives

Following Li (1993), I suggest that the fact that the result precedes the verb in resultative predication provides evidence that the result is an adjective in Hocak.<sup>9</sup> 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 must not be a verb. Instead, 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.

<sup>8</sup>Baker (2003) has previously argued that a main characteristic of adjectives is that they can occur as secondary resultative predicates.

<sup>9</sup>Thanks to Yafei Li (personal communication) for bringing this diagnostic to my attention.

Li shows that V-cause must temporally and morphologically precede V-result. Li formalizes this constraint as in (32).

(32) *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 (33) and the Japanese example in (34).

(33) Táotoa 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))

(34) 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 (33), the V-cause *tiào* ‘jump’ necessarily precedes V-result *fán* ‘bored’. Without the parentheses in (33), Taotaos’ jumping causes Youyou to become bored. With the parentheses in (33), Taotao’s jumping makes himself become bored. In (34), 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 (35) 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’.

(35) a. Mi e teki a nefe 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))

We find similar evidence from manner-of-directed motion serial verbs in Hocąk. These serial verbs consist of a manner-of-motion verb (e.g., *nyųwąk* ‘run’) and a directional motion verb (e.g., *hii* ‘arrive’). In Hocąk, the order of these two verbs cannot be reversed. Example (36) shows that the linear order of *nyųwąk* ‘run’ and *hii* ‘arrive’ must be *nyųwąk-hii*. The verb *hii* ‘arrive’ must always be the second verb. This directly follows from the TIC: a running event must logically precede the arriving event.

(36) a. Matejaga Teejop eeja nyųwąk hii.

Mateja-ga Teejop eeja nyųwąk Ø-hii

Mateja-PROP Madison there run 3S-arrive

‘Mateja ran to Madison.’

- b. \*Matejaga Teejop eeja **hii** nuɣwək.  
 Mateja-ga Teejop eeja hii Ø-nuɣwək  
 Mateja-PROP Madison there arrive 3S-run  
 Intended: ‘Mateja ran to Madison.’

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 Hocək resultatives. Li presents an example from German to illustrate the first constraint, as in (37).

- (37) Er will das Eisen flachschlagen.  
 he wants the iron flat.pound  
 ‘He wants to pound the iron flat.’ (Li 1993:501, (41))

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 Hocək data. We see that the result precedes the matrix verb, as in (38a). That is, *paras* ‘flat’ linearly precedes *gistak* ‘hit’. In fact it is ungrammatical for the result to be postverbal, as shown in (38b).

- (38) a. Meredithga maqsra **paras** gistakšana.  
 Meredith-ga maqs-ra paras Ø-gistak-šana  
 Meredith-PROP metal-DEF flat 3S/O-hit-DECL  
 ‘Meredith hit the metal flat.’  
 b. \*Meredithga maqsra gistakšana, **paras**.  
 Meredith-ga maqs-ra Ø-gistak-šana paras  
 Meredith-PROP metal-DEF 3S/O-hit-DECL flat  
 Intended: ‘Meredith hit the metal flat.’

Accordingly, if apparent adjectives Hocək are stative verbs, then the grammaticality of examples like (38a) is surprising. We expect (38a) to be ungrammatical, given the TIC. Since the TIC does not rule out examples like (38a), we can conclude that the result is not a verb. This is similar to the German example in (37). Moreover, the fact that the order that the TIC predicts, as in (38b), is ungrammatical also leads to the conclusion that the result is not a verb.<sup>10</sup> I take this as evidence that the result is an AP.

<sup>10</sup>More needs to be said as to why the result cannot be postverbal. Johnson and Rosen (2014) 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.

## 5.2 Barring Verbs as the Result

In this section, I show that adjectives can appear in resultative secondary predication, while verbs cannot. In order 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 an AP that contains a degree phrase. Following Cover (1997), I assume that only gradable adjectives have a degree argument, and that degree heads need to bind such a degree argument. I show that non-gradable adjectives are incompatible with resultatives in Hocak. Thus, if verbs do not have a degree argument to be discharged, the structure will be ruled out as instance of vacuous quantification.

Compare (39) that has *žiipik* ‘short’ as the result with (40) that uses the verb *šiibre* ‘fall’.

- (39) Matejaga      peešjjra    **žiipik**    rucgisšana.  
 Mateja-ga      peešji-ra    žiipik    Ø-rucgis-šana  
 Mateja-PROP hair-DEF short    3S/O-cut-DECL  
 ‘Mateja cut the hair short.’
- (40) \* Matejaga      peešjjra    **šiibre**    rucgisšana.  
 Mateja-ga      peešji-ra    šiibre    Ø-rucgis-šana  
 Mateja-PROP hair-DEF fall      3S/O-cut-DECL  
 Intended: ‘Mateja cut the hair (so that) it falls.’

The ungrammaticality of a verb like *šiibre* ‘fall’ (40) in a resultative construction indicates that this predicate is somehow fundamentally different than the one in (39).

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 (41) illustrates this for the non-gradable adjective *t’ee* ‘dead’. *T’ee* ‘dead’ as a result predicate produces an ungrammatical sentence. Note that the English equivalent is grammatical, as indicated by the translation in (41).

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

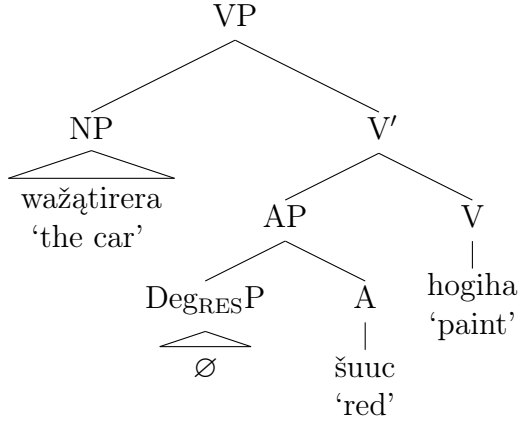
To account for the restriction seen in (41), I claim that the resultative predicate in Hocak takes a DegP in its specifier, as shown in (42). I label this degree phrase “Deg<sub>RES</sub>P.”<sup>11</sup>

<sup>11</sup>Corver (1997) argues that DegP dominates the AP (as in (i)). Differently than Corver, the structure in (42) follows Jackendoff (1977) and Bhatt and Pancheva (2004), among others, and places DegP in Spec,AP. Nothing crucially hinges on the placement of the degree phrase, however.

(i)      DegP  
        /  \  
       AP   Deg



(42)



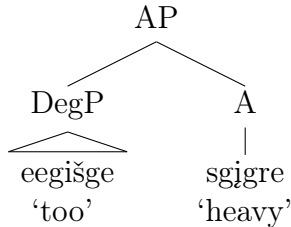
Hocak resultatives are thus obtained by specifying the eventuality of the result to the highest degree. This is consistent with Wechsler's (2005) proposal on the constraints on the result predicate. Wechsler asserts that the result must express a gradable property with a maximum degree, when the object NP is the argument of the matrix verb.

I assume that only gradable adjectives can take DegPs in their specifiers, while non-gradable adjectives lack this ability. The degree head is an operator and thus has to bind a variable. If gradable adjectives have a degree argument (or grade-role) in its argument structure, then the degree head will be able to bind it. On the other hand, if a non-gradable adjectives lack this degree argument, then the structure will be ruled out since all operators have to bind a variable. Consider the contrast between the gradable adjective *s'aagre* 'heavy' in (43a) and the non-gradable adjective *t'ee* 'dead' in (43b) with the degree element *eegišge* 'too'.

- (43) a. Henryga eegišge s'aagre.  
           Henry-ga eegišge ∅-s'aagre  
           Henry-PROP too 3S-fast  
           'Henry is too fast.'
- b. \*Caara eegišge t'ee  
       Caa-ra eegišge ∅-t'ee  
       deer-DEF too 3S-dead  
       Intended: 'The deer is too dead.'

I propose that *eegišge* realizes a Deg head; thus, an example like in (43a) has the structure in (44).<sup>12</sup>

(44)



<sup>12</sup>As noted in footnote 11, it could also be the case that DegP dominates the AP. I suggest that *eegišge* 'too' would be in the specifier of a head-final and phonologically null Deg. See Rosen (2015) for more information.

I attribute the ungrammaticality of non-gradable adjectives with *eegišge* ‘too’ to the hypothesis that the degree head associated with *eegišge* ‘too’ must bind the degree argument of a lexical item. Since non-gradable adjectives in Hocak do not have degree arguments as part of their lexical entry (cf. Higginbotham 1985, Corver 1997), the degree head does not have a degree argument to bind. This results in ungrammaticality. Under the present analysis, since the result takes a degree phrase in its specifier, it is expected that a non-gradable adjective is not allowed as a result predicate. In the case of the resultative in (41), *t’ee* ‘dead’ is ill-formed because the degree operator in Deg does not have a variable in its scope that it can bind.<sup>13</sup>

Let us return to the fact that verbs are ungrammatical as resultative predicates. Following Higginbotham (1985) and Corver (1997), I assume that verbs do not have a grade-role; rather they have an event-role. This is evidenced by the ungrammaticality of the verb *šiibre* ‘fall’ with *eegišge* ‘too’ in (45).<sup>14</sup>

- (45) \* Hunterga eegišge šiibre.  
 Hunter-ga eegišge Ø-šiibre  
 Hunter-PROP too 3S-fall.STAT  
 Intended: ‘Hunter fell too much/a lot.’

I argue that resultative examples like (40) with verbs are ungrammatical since a degree head can measure the state of the adjective, but it cannot link the event of a verb. In other words, example (40) is ruled out because there is a mismatch between the selectional restrictions of DegP and a verb phrase. This explains why verbs are barred from resultatives in Hocak.

In this subsection, we see that 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 takes a special degree phrase that I labeled “Deg<sub>RES</sub>P” in its specifier. 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. Thus, I contend that the result predicate in Hocak is an AP.

### 5.3 Implications: Status of Adjectives

I have presented evidence that the result predicate in Hocak resultatives projects as an AP (an adjective). This puts resultatives in Hocak in line with resultative constructions cross-linguistically that use APs as result predicates (cf. English resultatives). Moreover, these data indicate that Hocak has the lexical category adjective. This is a significant result since Hocak has been previously described as only have nouns and verbs (see section 2.3). The previous traditional literature (e.g., Helmbrecht 2006) has focused primarily on the morphological similarities between stative verbs and adjectives. The data from resultatives have shown that these similarities can be misleading. Rather adjectives surface in at least one environment in Hocak; namely, resultatives (see Rosen 2014, 2015 for further discussion of these issues in Hocak, and Baker 2003 and Dixon 2004 cross-linguistically).

<sup>13</sup>I assume that color adjectives, such as *šuuč* ‘red’, are gradable (Kennedy and McNally 2010).

<sup>14</sup>The contrast between (43) and (45) illustrates another way in which stative verbs and adjectives differ. In this paper, I am only concerned with how they differ with respect to resultatives. Rosen (2014, 2015) present more diagnostics for the existence of adjectives in Hocak.

## 6 Conclusion

This paper has offered a description and an analysis of Hocak resultatives. I have shown that the result predicate must not be a clause and must be in a VP-internal position. I have argued that Hocak resultatives project a phrasal AP as the complement of the verb in a Larsonian “VP shell” (Larson 1988). This proposal is supported by the fact that resultatives in Hocak have many of the properties that have been attributed to resultatives cross-linguistically, such as English. In particular, resultatives in Hocak obey the DOR, and the resultative phrase is adjectival. I conclude with the hope that this paper will continue to improve our understanding of resultatives and the structure of predication in Hocak and Siouan languages.

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