Rehoboth Cordgrass Sketch Grammar

TSOLEE

Dedicated to the gang that's all true blueee!

Tags: **Speedlang, 11th r/conlangs Speedlang Competition, Nonnaturalism, Psithurism**

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Contents

Introduction

This paper documents a language used by a wetland population of Saltmarsh Cordgrass (*Spartina alterniflora*) in the state of Delaware's Rehoboth Bay to communicate amongst other plants of the same species. Although primarily used by the grass for storytelling, it also fulfills the important need of providing a method for information sharing regarding environmental factors that may impact the grass' community. It stands apart from other contemporary descriptions of language because it marks the first documentation, however incomplete, of a language spoken entirely by plants. Psithurismus (spoken by plants) language is a topic crucially underdeveloped in the literature, and very few populations have been surveyed to determine its prevalence. Although there is preliminary work being done that suggests that some species may be able to understand languages used by other plants (Mei 2022 unpublished), it appears that Rehoboth Saltmash Cordgrass (RSC), similar to other known psithurismus langauges, is used solely by *spartina alterniflora* and that no other species of grass or sedge that co-inhabit Rehoboth Bay can produce it.

This grammar will serve to describe dialects of the language used on the western coast of the Bay, from the shore of Marshtown in the north to Angola Neck Nature Preserve in the south. All example sentences are from natural (not elicited) discourse collected from communities of cordgrass in Angola Neck Nature Preserve, nearby Arrowhead Point, and Santa Claus.

Special thanks to Joseph for helping me develop automatic transcription software and initial ideas for the project.

Author's Note

I've been a longtime lurker for a great many r/conlangs speedlang challenges, but this time I decided I'm in. I've had the idea for a plant-spoken (or as I call it in the paper, 'psithurismus') language knocking around in my head for awhile, so when I had the opportunity to put together a submission for a speedlang challenge I decided to go for it. Even though I had infinitely more time than I had for the last speedlang competition I made something for, I still felt the time crunch. That is to say, there may be more than a few errors scattered throughout the paper, and I feel like I've missed a lot of potential nuance in the language (especially in the grammar/syntax department). Well, I guess it is a *speed*lang challenge, after all. Oh, and if you're reading this, that means the judges of the competition (looking at you, Miacomet) have deigned to consider my plant 'diphthongs' the real deal. Final impressions[1]? Not sure if I'll revisit Rehoboth Saltmarsh Cordgrass anytime in the immediate future, but I had a lot of fun making it and messing around with its phonolo—er, I mean, psithurism. If anything the development of this language made me realize how much I'm impartial towards my main project, **Mochå**.

On that note,

(1) ő ùn
DEF DP
'See ya~'

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[1]During the development of this language I began terming certain terms 'classifiers,' but over the course of the language's development I realized they might be more accurately described as case markers. They do share some similarities with classifiers, though. For instance, these markers have separate, free forms that can act anaphorically similar to pronouns, which in my mind would be more adjacent to the behavior of classifiers than to case marking. Maybe when I get a few seconds I'll read up on classifier typology...

Conventions

Although not a human language, in this paper I use a method for transcribing phonemes in the language with latin characters. In this transcription, I use front slashes (//) to designate phonemic transcription of the language. All other transcriptions of the language follows orthographic rules I outline somewhat haphazardly in 1.4. I use italics (*a*) when writing RSC resistance patterns in paragraph form. Glossed sentences will appear as follows:

(2) text.in.RCS
glossed.text
'translation' (SOURCE)

Abbreviations

A	agent
AGR	agreement
BARE	bare stem
CLF	classifier
DEF	definite
DP	discourse particle
DV	deverbal
HSY	hearsay evidentiality
ITPR	interpersonal evidentiality
LNK	linker
LOC	locative
MIR	mirative
NEG	negative
OBL	oblique
P	patient
S	argument of intransitive verb
SNS	sensory evidentiality
STEM	stem

1 | Psithurism

Psithurism, from Ancient Greek *ψιθύρισμα (*psithúrisma*, whispering), refers to the 'sounds' of plant-spoken language. It is roughly equivalent to phonology in human language. The language is conveyed by one plant to another by the degree and manner through which an individual resists the flow of wind on its leaves. The language is perceived on the receiving plant by the movement of its leaves in the wind. Thus, the same wind patterns that they shape to create the language they must also read to comprehend what other individuals have said. Because of this, the produced 'speech' can only be heard in very close proximity (<2m) from the source.

Production of sounds in the language rely on three factors: wind type, type of movement of the leaf blade, resistance pattern.

1.1 | Word Structure

Each 'word' in RSC is composed of one 'nucleus' interposed in between two 'stops'. This series of stop-nucleus-stop is called a resistance pattern. A stop is created by a cordgrass stiffening its entire leaf, including its ligule, for a very short period in order to cause interference with the wind. A nucleus is created by a cordgrass stiffening only a part of its leaf and letting the rest move in the wind. Each causes a detectable interference pattern in the wind that is detectable on the leaves of other cordgrasses.

Stops depend on their length and the movement for their meaning, whereas nuclei depend on which parts of the leaf are stiff and the wind type for their meaning.

1.2 | Wind Type

The type of wind that causes leaf movement can be divided into four contrastive types in RSC: rising, falling, land-orientated level, and water-oriented level. Each type of wind causes different interpretations of the same segment. Rising wind is a wind pattern characterized by wind increasing in speed or picking up from a lower speed. RSC makes no distinction between a rise in wind speed from still air (no wind) and a rise in wind speed from a lesser speed. Falling wind is similar to rising wind but the reverse, from a higher wind speed to a lower wind speed.

Land-orientated level wind is wind flowing from the water to the land of a relatively consistent velocity, not varying more that 3mph. Water-orientated level wind is again similar but inverse, only different in being from the land to the water in direction. Phonemic distinction between these types of wind appears to be relatively rare crosslinguistically but seems to be an areal feature shared with many neighboring languages of the Rehoboth Bay area.

Gusting wind is distinguished from these categories as any wind that exceeds 20mph. Because of limitations to the intensity of wind that can be resisted by the plant, any segments conveyed using gusty wind tend to be incomprehensible and tend to be ignored.

In the roman orthography for RSC, diacritics are used over nuclei to represent wind type, detailed in 1.

Diacritic representation	Wind type
◌́	Rising
◌̀	Falling
◌̋	Land-Orientated
◌̏	Water-Orientated

Figure 1: Diacritic markings for wind type

For more detail into nuclei, see 1.4.2.

1.3 | Movement

Movement of the leaf blade in the wind is perhaps the most important aspect of speech creation in RSC and in many other plant languages. Although leaves are typically only thought of 'swaying' in the breeze, there are actually many different types of movement that a plant can undergo. This factor can be considered roughly analogous to consonant place of articulation in human phonology; both involve the place the leaf blade (or tongue in human phonology) has to be in order to produce a sound. RSC has four distinctions in movement, each given names based on the shape each typically makes in the air: arcs, bobbing, jags, and start/stopping combinations. On each movement there are a limited number of places where a segment can be produced, detailed under each individual movement below.

Note that 'resting position' refers to the position in which a leaf blade rests when there is no wind.

1.3.1 | Arcs

An arc is a 'swaying' motion in which a leaf blade tip moves horizontally in any direction before returning to resting position. Frequently these movements do not make linear lines but rather incorporate some vertical movement as well, creating an arc. Arcs can be difficult to tell apart visually from jags, although they make distinctly different patterns in the wind. The direction of an arc does not have any influence on meaning.

Resistance patterns may occur on the outswing of an arc or on the inswing (return) of the arc and are contrastive based on this distinction.

1.3.2 | Bobs

Bobs are movements that are almost exclusively vertical in shape.

Resistance patterns occurring on an upswing and those that occur on a downswing are contrastive.

1.3.3 | Jags

Jagging is a movement characterized by a roughly circular movement of the tip of a leaf blade. Frequently a jag begins similarly to an arc but tend to be smaller in size and shorter. In rapid or imprecise speech, jags are occasionally substituted by arcs.

1.3.4 | Start & Stop Movements

Starting or stopping movements are a crosslinguistically rare movements that can only be made from resting position to movement or movement to resting position. They differ from arcs in that an arc typically swings back past the resting position, where start/stop movements only occur if a movement starts of ends in a complete stop.

Only one resistance pattern may occur on a start or stop movement and typically occurs only 250ms from the resting portion of the movement (250ms after the beginning of movement for starting, 250ms until the end of movement for stopping).

1.4 | The Psithurismus Unit & Resistance Pattern Types

A psithurismus unit is equivalent to a word in human language and is composed of one or more resistance pattern forming a psithurismal (or phonological) unit. The resistance pattern, analogous to a syllable, is a self-contained unit composed of a stop (S), a nucleus (N), and a closing

stop. It appears from preliminary investigations into plant-spoken languages that the psithurismus unit is the largest phonological (or in this case, psithurismus) unit present in botanical languages. Furthermore, there appears to be some sort of constraint on the maximal shape of a resistance pattern across botanical languages, as they tend to be very small (Springer 2021)[2]. Springer (2022) proposes that the most common resistance pattern shape is SNS. RSC certainly follows this trend, with the maximal resistance pattern being SNS.

The resistance pattern template of RSC is formally described in figure 2, where $[\psi]$ denotes the psithurismus unit, $[\rho]$ denotes individual resistance pattern units, numbered subscripts refer to segments whose values must be the same[3], the question mark is used for optional segments, and parentheses are included for clarity. *S* denotes stops, *N* nuclei, *W* wind pattern, and *M* movement pattern.

$$\left[_{\psi}\left[_{\rho}\left(\mathrm{S}\,\mathrm{M}_1\right)^{?_2}\,\mathrm{N}\,\mathrm{N}\,\mathrm{N}\,\mathrm{W}\left(\mathrm{S}\,\mathrm{M}_1\right)^{?_2}\right]\rho^{?}\right]$$

Figure 2: Rehoboth Cordgrass Resistance Pattern

Plainly, this describes how stops and movement as well as nuclei and wind pattern are codependent within the same resistance pattern, as well as the two possible resistance patterns: SNS and N.

[2]Despite tending to be small, there is still plenty of variety in what kinds of resistance patterns are permitted. For example, Kaibab Pinyon Pine allows NS patterns along with the SNS (Mei 2022), Plains Sycamore allows only NS patterns, while South Appalachian Smoketree allows maximally SSNS patterns (Epril 2021).

[3]Values may differ from those in a different iteration of a unit, but not unit-internally

1.4.1 | Stops

Stops are the complete stiffening of an entire leaf. They are differentiated in the amount of time they are held for as well as the movement that occurs with it. A complete inventory of all stops in RSC is detailed in figure 3. In figure 3, stops are listed in order of length shortest to longest.

	Arcs	Bobs	Jags	Starting	Stopping
Horizontal				m	n
Away	t tt d				
Return	k kk g				
Upwards		p pp b			
Downwards		q qq g			
Clockwise			dd bb		
Counterclockwise			gg g̣g̣		

Figure 3: Reistance combination with orthography

Upwards and downwards starts are considered here to be allophones of horizontal starts, and same with stops. This being said, starting and stopping phonemes have a very narrow distribution, only being found in discourse markers.

> *This fulfills the requirement of having a phoneme with limited distribution that depends on grammatical category because of /m n/'s presence in only discourse particles.*

Orthographically, due to the restricted position of stops in the RSC resistance pattern template, stops are not written at the end of the word if the same stop is present at the beginning in order to reduce redundancy. Thus /ttátt/ would be written as *ttá* while /ttát/ would be written as *ttát*.

1.4.2 | Nuclei

Nuclei, which in RSC can occur in between two stops or without any accompanying stops, make five phonemic distinctions in RSC. They are roughly equivalent to vowels in human language. Four parts of the leaf are used to create nuclei. Depending on which part is selectively tensed, different phonemes are created. This is in contrast to stops, in which the entire leaf is stiffened. The distinctions are listed below in figure 4[4].

Orthography	Resistance Combination
i	Tip
e	Tip, Upper
u	Upper
o	Lower
a	Base

Figure 4: Reistance combination with orthography

Along with these phonemes, blended combinations of them may also appear in nuclei. Similar to diphthongs in human language, they begin as one nuclei but end as another. The existence of such phonemes can be confirmed by a timeline of when leaf sections are stiffened. As can be observed in figure 5, there is considerable overlap between when the tip of the leaf is tensed and when the lower section of the leaf is tensed in such 'diphthongs.' During this overlap, tension 'slides' along the leaf until it reaches the place of the ending.

[4]Orthographic representations chosen to parallel vowel height in human languages.

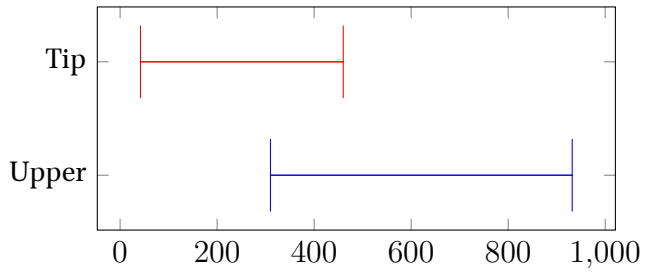

Figure 5: Articulation overlap in leaf tip-lower leaf diphthong

This would contrast with two separate nuclei that would be stiffened separately without stiffness moving from one place of articulation to another.

> *This fulfills the requirement of having 'diphthongs' present in the language. Although not diphthongs by conventional definition, I posit that their similarities to diphthongs in natural languages warrant this classification. As opposed to a nucleus-nucleus combination in which leaf segments are stiffened independently of each other, in RCS diphthongs stiffness slides down the stem to the next nucleus position. With there not being anything analogous to a vowel-glide sequence in RCS, leaves the conclusion that these combinations of nuclei constitute diphthongs.*

In RSC, not all possible combinations of diphthongs are present. All diphthongs in RSC are listed in figure 6. Note that in the *ie* Tip-Tip Upper diphthong, the tip remains held stiff while stiffening spreads to the upper section.

As mentioned in 1.4, selective tension combines with wind type (detailed in 1.2) to form each nuclei phoneme.

Orthographic Representation	Resistance Combination
ie	Tip-Tip Upper
iu	Tip-Upper
ao	Base-Lower
au	Base-Upper

Figure 6: Reistance combination in diphthongs with orthography

1.5 | Precipitation

During precipitation such as rain, snow, or hail, the weight of falling precipitation causes the leaves of the cordgrass to move without wind. Due to this, communication is impossible while precipitation is occurring and for a period afterwards, depending on how weighted down by the fallen precipitation a plant's leaves are. When snow or ice covers their leaves, communities of cordgrass may go days without communication.

1.6 | Word Template

In RCS each root consists of the stop sequence in a resistance pattern. Nuclei are assigned to a word based on grammatical markers that have no semantic meaning. This template holds true for both noun-like roots and verb-like roots. If there are no grammatical markers that attach to a word, it takes the nucleus *ì*, as in (3)

(3) p‹ì›pp
rise‹BARE›STEM
'be risen'

This fulfills the requirement of utilizing root-template morphology in the language because all attaching morphemes to a root must 'slot' into the template of the root.

All roots are underspecified for nuclei, which are provided by attaching modifiers.

Many grammatical markers can be given to both noun-likes and verb-likes, as shown in figure 7[5].

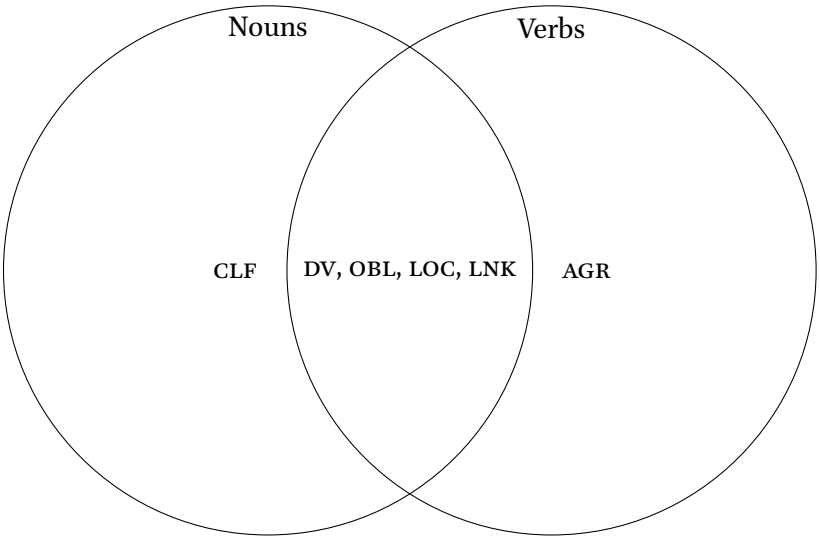

Figure 7: Possible marking on noun-like and verb-like templates

The nuclei used by CLF and corresponding AGR markers are the most numerous, with other categories following. Multiple nuclei may be present inside the same resistance pattern, assuming they are of the same wind type and contrast at nuclei boundaries, following the following template:

If there is no contrast between quality at nuclei boundaries and a diphthong is present (as in **pàoò*) or if there is a difference in wind pattern (as in **ttèa̍od*) then a clash between the two nuclei occurs and the later of the two involved is pushed outside of the parent resistance pattern and becomes an independent resistance pattern, demonstrated in figure 9.

[5] CLF may be present on deverbals

Figure 8: Template-filling order

*/pào.òp/ → /pàop ò/
*/ttèà̀.od/ → /ttèd à̀o/
/téét/ ✓
/bíe.ób/ ✓

Figure 9: Template-internal clash resolution

This resulting form, like many other markers, can appear in free order with the parent word (either before or after). Occasionally it will appear separated from the parent word by intervening speech, but this phenomena is highly context-dependent and generally only occurs when the parent word can be discerned from context.

2 | Morphosyntax

Morphosyntax in RSC is restricted by the way through with resistance patterns are conveyed. Frequently plants have to wait long stretches of time until the right wind pattern occurs to make a certain resistance pattern and thus discourse is frequently interrupted. Constituent order also has a high degree of variance depending on which wind patterns occur first. While waiting for a certain wind pattern new discourses may begin, therefore many separate discourses may be occurring at the same time. To maintain clarity phrases tend to be as marked as possible within RSC's limited resistance pattern structure and frequently refer to markers in other phrases in order to maintain continuity between phrases in the same discourse. In this grammar breaks

in conversation are marked by a double slash (//) in gloss.

2.1 | Constituent Order

Constituent order within phrases appears to be relatively free.

(4) a. ttèd qa̱o mé // ba̱pp
swim:DV stem:CLF DP // blockAGR
'Lots of boats out today, no?' (OD)

b. qè ttа̱od mé // ba̱pp
stem:DV swim:CLF DP // block:AGR
'Lots of boats out today, no?' (OD)

Along with this, it appears that although internal ordering of infixes is significant (see 1.6), it does not matter which resistance pattern they attach to within a phrase, as demonstrated by (4a) and (4b). Furthermore, RCS is a heavily pro-drop language, and arguments are frequently omitted when they can be inferred from context.

2.2 | Morphosyntactic Alignment

RCS has a highly ergative morphosyntactic alignment. There are no markers that distinguish different arguments of verbs from each other. However, it should be noted that in our analysis there are no true transitives present in the language and that on the surface verbs are maximally monovalent. In (5), although 'kill' in human languages is a highly transitive verb, in RCS only the patient is expressed as a true argument of the verb while the agent is expressed in an adjunct.

(5) Pàoà ò mé // gó tè.
pàoà ò mé // gó tè
bird:CLF:LOC LNK DP // kill:AGR CLF:DV

'(That) osprey trampled a group of grass.' (OD)

Because of the patient and subject's presence in the verb phrase but the exclusion of agents it can be said that in RCS P and S arguments pattern together while A arguments pattern differently, typical of an ergative alignment as depicted in figure 10.

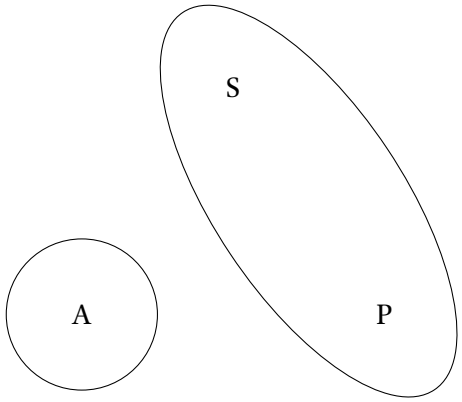

Figure 10: RCS morphosyntactic alignment

2.3 | Adjuncts

Adjuncts are optional syntactic units that provide additional information to the clause. In RCS they are used for all 'adverbial' clauses. Two different markers are used to mark adjuncts, termed the locative (LOC) and the oblique (OBL). The locative is used with all adjuncts involving placement in space or time along with adverb-like arguments from active verbs and definite agents. The oblique is used with all adverb-like arguments derived from more stative roots as well as for indefinite agents.

(6) a. kkék ò ttàt // bbìp ggèò bàu dấu ő
move:AGR LNK break:LOC // tall sit:DV:LNK grow:AGR: tree:CLF DEF

'When he woke up, the tree (as he found out) has grown high.' (5MOYD 1623)

b. ő // qòdì gạ̀p kk̀ì ttáu
DEF // path:LNK CLF:LOC walk:AGR CLF:OBL
'They walked by *us* on the path.' (OD)

2.4 | Linker

The linker morpheme *ò* has a myriad of uses. It may be used with both nominals and verbals, and to different effects.

2.4.1 | Verbal Uses

The linker is used to create serial verb constructions between two verbs (7).

(7) àn // gòk bűpp pèpp
DP // *near:LNK block:AGR NEG:DV*
'Don't talk over me.' (OD)

The linker can also be used with a verbal adjacent to a nominal to create a relative clause structure. Note that in these types of clauses constituent order within the relative and the matrix clause remains free, but that the head nominal and the verb in the relative clause must be adjacent.

The linker may also be used on verbs with no other verb present to create the effect of associated motion away from the speaker. This meaning in turn is frequently extended to the idea of something happening suddenly or of its own accord, similar to the English expression, 'go and.'

(8) Bàu // ì̀ gòk
grow:AGR // AGR near:LNK

'Sure enough, it grew!'

It is also used for coordination of two or more verbal clauses.

2.4.2 | Nominal Uses

The linker *ò* also has many uses with nominals. Its most frequently occurring usage is in attributive or possessive constructions. Note that in this usage word order only distinguishes which nominal acts as an attributive in cases when context cannot be used to distinguish meaning. Therefore, the meanings of (9a) and (9b) are the same.

(9) a. pào ò // kkőbbìkì
osprey:CLF LNK // *nest:DEF*
'The osprey's nest' (OD)

b. kkőbbìkì // ò pào
nest:DEF // *LNK osprey:CLF*
'The osprey's nest' (OD)

The use of the linker with a nominal may also resemble that of a copula. In this usage the nominal frequently also carries a deverbal (DV) marker.

2.5 | Negation

Verbal negation is carried out through the construction of a serial verb phrase using the root *pp-p*, which patterns with verbals but has no semantic meaning besides its use as a negation marker.

(10) ddìppu̍p è dȍtt gòùkk ppòp kèò míu
cow-parsnip DV say:AGR burn:LNK:AGR NEG:LNK CLF:DV:LNK HSY
'There is the one that does not burn, the cow-parsnip.' (5MOYD 1620)

2.6 | Coordination

Coordination is frequently defined as the combination of two clauses of equal grammatical status. Although RSC uses the linker (LNK, see 2.4) for verbal coordination it uses the free nucleus *é* in proximity to nominals to achieve nominal coordination.

3 | Nominals

Nominals in RSC cover a range of forms that cannot take agreement marking but obligatorily take classifiers in their template to distinguish different voice/classifier combinations (see section 3.2). Nominals also are marked for definiteness (DEF) and can be referenced anaphorically by classifiers in their free forms.

3.1 | Definiteness

Nominals in RSC may be marked for definiteness by the marker *-ő-*. There is no marker for the indefinite, but an absence of the definite marker signifies indefiniteness in most cases. The definite marker may attach to the nominal that it refers to or to a discourse particle (DP). The latter construction marks the absolutive argument of a verb as definite.

3.2 | Classifiers

Classifiers in RSC refer to a diverse category of morphemes that appear in bound and free forms. Classifiers, as the name suggests, classify nominals based on perceived characteristics of the nominal. However, which classifier associates with which nominal is somewhat arbitrary, and depending on the semantic role the nominal is assigned and where focus falls in the sentence

different classifiers are assigned. For example, in example (11a) the free classifier *g̣-p* has the same referent as the free classifier in example (11b) but are assigned different forms based on the semantic role of the form, noted in the gloss.

(11) a. gék **gàp** bbáuékkì
V LOC A
near:AGR CLF:LOC mouse:OBL:CLF
'The mouse neared **us**.' (OD)

b. míe // **tì** gò ttót
P V
DP // CLF kill:LNK break:AGR
'And then **we** were torn to shreds.' (OD)

By this alone the system would be more accurately described under the label of case. However, there are some classifiers that never appear with certain lexical items, implying markers that select for semantic characteristics, which more closely resembles a system of classifiers. In this analysis these markers are therefore described as classifiers, however this topic warrants research into the typology of these markers and future descriptions may vary in terminology.

(12) ?? d‹à›
tree‹CLF›

-à- is a bound classifier that is only used in contexts where the attached noun is highly agentive and is a non-water dwelling animal. In example (12), *à* is used as a bound classifier used for the stem *d-* 'tree,' which is typically rejected as highly strange. With this information it could be argued that this merely happens to be a combination that does not make semantic sense because *d-* is rarely if ever assigned an agent role, but this is not the case.

(13) ? bb‹íu›kì
mouse‹CLF›STEM

In example (13), although *-íu-* is a bound classifier that is used for highly agentive nouns this combination is still ungrammatical. I propose that this is because *-íu-* is associated exclusively with water-dwelling animals, where in (13) the stem is a land-dwelling animal. So although stem *bb-k-* can frequently be found in highly agentive positions it cannot take the classifier *-íu-*, suggesting that classifiers do in fact select for semantic meaning of nouns.

3.2.1 | Bound Classifiers

Bound classifiers are classifiers that can only appear inside the template of a nominal and must agree with the agentivity and semantic meaning of a noun. They may not be used independently of a nominal or with a verbal that does not have a deverbal (DV) marker. All bound classifiers take the form of a single nucleus.

Bound Classifier	Associated Semantic Roles	Use Case
-á-	P, LOC, OBL	Abstract concepts related to plants
-à-	A	Land-dwelling animals
-àu-	S	Plants
-ű́u-	P	Plants the size of cordgrass and larger
-íu-	A	Water-dwelling animals
-i̋e-	S	Expectations, thoughts, or large animals (such as humans)
-ő-	A	Unknown or unintroduced plants
-ű-	A	All plants

Figure 11: Sampling of Bound Classifiers in RSC

3.2.2 | Free Classifiers

Free classifiers are separate forms from bound classifiers and are used anaphorically to refer to known referents by their semantic meaning[6]. Unlike bound classifiers, however, they do

[6]Note that sometimes things that do not fit the class given are included in this categories. For example, natural phenomena such as snow, heat, and fallen wood can all be used with the classifier *k-*, although in general only

not agree with the agentivity of the referent but take their agentivity from the anaphor's (free classifier's) position in the discourse. Psithurismusly these forms are always templates and thus are composed solely of stop patterns. They are the only class of nominals that never take bound classifiers, although they may take other forms of grammatical marking.

Free Classifier	Associated Semantic Roles	Use Case
g-p	LOC, OBL	Plants and discourse-central entities
t-	P	Plants
tt-	OBL	Plants the size of cordgrass and larger
k-	A, P, LOC, OBL	Abstract concepts and nonliving nonnatural items

Figure 12: Sampling of Free Classifiers in RSC

(14) qqòq báukkì dëppì // mé // gòppì ò qqùq qòdì kè
weight:LNK sharp:OBL snow:CLF // DP // field:LNK DEF weight:AGR path:LNK CLF:DV
é ggìddì dìtt'ttì
and hill valley
'The fields, ways and roads, valleys and hills are covered with a blanket of white and thick snow.' (5MOYD 1626)

4 | Verbals and Verb Operations

Verbals in RSC are frequently composed of solely the bare stem without other marking. Occasionally these forms are identical to nominal forms, like the word *kk-gg-* which can mean both 'fish' and 'jump, hop.'

nonnatural phenomena are included in this class.

4.1 | Agreement Marking

Verbs agree with the classifier of the nominal in the absolutive (see 3.2 for classifiers and 2.2 for morphosyntactic alignment). They do not simply take the same bound classifier as nominals do, but rather take an associated marker solely used for agreement on verbals.

Classifier	Agreement Marking
-á-	-ó-
-ő́u-	-àu-
-ő́e-	ì
-ő-	-ő-
ẹ-p	-é-, ì
k-	-ù-

Figure 13: Sampling of Bound Classifiers and their Verbal Agreements in RSC

Agreement marking can agree with an argument not present in the phrase. This is common in RSC due to its tendency to drop arguments.

4.2 | Deverbalization

Deverbalization is the process of converting a verb into a more noun-like form. In RCS the main method through which this process occurs is through the deverbal (DV) marker *è*.

(15) gà ttèòd míuő // qá ttí à gó
haste:LOC flow:DV:LNK HSY:DEF // life:CLF CLF LOC die:AGR
'(They say,) time (passes) quickly, and with it beings pass away.' (5MOYD 1632)

5 | Wind-Terminal 'Discourse' Particles

At the beginning of a new utterance or at breaks in utterance generated from the need to wait for the right wind pattern certain resistance patterns crop up in discourse that can't be explained as having any semantic meaning. Not only do such particles only contain stopping and starting motions (see **??**) but they play two important roles in discourse: as evidentiality markers and as discourse particles that tell the listener the context of an utterance. Psithurismusly these particles stand out as the only category of resistance patterns in RSC that do not implement root template morphology.

5.1 | Evidentiality

Evidentiality is the grammatical encoding of the source of information in a sentence. Although not present in every phrase these markers are nonetheless prevalent in natural conversation. In stories and oral tradition especially these markers can be used in dialogue to convey to the audience how characters know certain information and greatly helps the continuity of such stories. There are three categories of evidentiality in RSC: sensory evidentials, hearsay evidentials, and interpersonal evidentials.

Sensory evidentials (SNS) are evidentials that convey that the truth of the utterance came from direct experience. For cordgrass this typically means feeling actions happen either directly or through wind currents, because of limited other sensory options. This evidential is conveyed wind-initially as *mə̀o* and wind-terminally as *ə̀on*.

Hearsay evidentials (HSY) are used when the information expressed in an utterance came from someone else who relayed information but didn't experience the event itself, a typical

'friend-of-a-friend' situation. This marker can also be used to increase politeness and distance from a discourse partner. The marker for hearsay evidentials wind-initially is *múu* and wind-finally *úun*.

Interpersonal evidentials (ITPR) are evidentials in which the information in an utterance is known to be true through being heard from an entity known to both speaker and listener. This evidential type is more common to be used in oral stories, but considering their prevalence in cordgrass culture it sees substantial use. The marker for interpersonal evidentials wind-initially is *mí* and wind-finally *ín*.

> *This fulfills the requirement that the speedlang have grammaticalized evidentiality by having a separate class of particles in part dedicated to evidentiality marking.*

5.2 | Mirativity and Other Discourse Markers

Discourse markers in RSC can mark other things besides evidentiality (5.1). They also mark the context in which an utterance is said. There is extreme diversity in the morphology of these markers throughout the language; even within the one dialect this paper focuses on usage of these markers varies from region to region. Sometimes discourse markers common on one side of an inlet become rarely used as close as the other side. However, I was able to deduce certain very common markers that seem to be in common use across a fairly wide range of land, detailed in figure 14[7].

> *This fulfills the requirement of having discourse markers that don't change the meaning of a sentence but show its context.*

[7] Usage of each marker is limited to either wind-initially or wind-finally based on movement psithurism.

mé	*'really,' used for emphasis on a statement, typically an observation*
àn (in some dialects as a̰n)	*displays firmness of opinion or command*
mó	*expresses amazement or wonder*
máo	*'don't you know...?' ~ conveys information that the listener might not know*
ùn	*expresses the speaker's surprise, perhaps mirative* (*MIR*)*?*

Figure 14: Sampling of Common Discourse Markers Cross-Dialectally

These discourse particles are not mandatorily included in sentences but may be for effect, as in example (16).

(16) bb̰ippg̣ò máo // t̰iegèò kè
go:AGR:LNK DP // *reason:CLF:DV:LNK CLF:LNK*
'There's a reason I came.' (5MOYD 1607)