A Reference Grammar of Psittacine

Russell Emerine

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1 Background

Psittacine is a conlang set in the near future of the real world. As they have done for millenia, humans continue to devastate the environment. The rainforests continue shrinking and many animals are losing their habitat. Under the threat of extinction, parrots put their intelligence to use and create their own language, and are using it to plot the downfall of humanity.

Parrots are known to be some of the smartest non-human animals, alongside great apes, dolphins, octopuses, elephants, and crows. The possibility of parrots developing their own human-like language is not completely unreasonable. Famously, many of them can imitate human language, and a few have claims to using and understanding human language. Alex (`https://en.wikipedia.org/wiki/Alex_(parrot)`) was able to perform remarkably complex tasks, such as counting the number of objects with combinations of properties. Alex also has been reported to be the only non-human animal to ever ask a question.

Figure 1: Alex performing a counting task.

Parrots have very different physiology from humans, but the sounds they will have in their language will be human-producible sounds. Parrots can easily produce stops, fricatives, nasals, and a full range of vowels in a full range of phonations, as well as many sounds humans cannot produce, such as chirps, beeps, and rapidly alternating tones. I will only use sounds parrots and humans can both produce easily. Since parrots don't have lips, their language will not have labial consonants or lip rounding. (Alex reportedly had difficulty pronouncing "paper".) The beak doesn't have teeth or an alveolar ridge, but placing the tongue in approximately similar locations can make similar formant profiles. The part of a parrot's brain responsible for cognition is the HVC, originally purposed for processing and producing birdsong. Since parrot language will have influence from birdsong, it will be more reliant on tones than most human languages.

In the world of human expansion, there are a number of different groups of parrots that have unique interactions with humans and each other. There are wild parrots from the rainforests who want to preserve their habitat, and most of them want to destroy the humans. There are feral urban parrots, some who want to stop the humans and some who don't particularly care. There are also domesticated parrots, who mostly like humans (since those who don't run away). The language has dialects that vary over the above groups, and by location. Parrots and humans may learn each others' languages, but have trouble producing certain sounds.

Parrots will also have their own writing system (not detailed in this book). Some parrots may learn to use pens, but the most natural way for parrots to write is to make scratches in bark using their beaks. Parrots beaks have more strength and fine control than claws. The writing system will consist mostly of short, straight strokes to reflect the medium of writing.

Parrots live all over the world, mostly in tropical areas. Typical intelligent parrots live

in natural hollows in tree canopies, eat seeds, nuts, fruits, and occasionally bugs, and are generally monogamous and nonterritorial. Like humans, they are very social, and their society could reasonably be organized similarly to that of humans. In the story, they will develop government as they need high-level cooperation to work against the humans. They will also learn to use some technology. Vocabulary and metaphors, including ones for the new technology, will show influence from their social and dietary habits.

2 Phonology

2.1 Consonants

Parrots do not have the same mouths as humans. Also, parrots do not have a voice-producing larynx like humans do. They instead produce sound at the syrinx, an organ at the fork of the trachea found in birds. While syrinxes are more powerful and flexible than larynxes, the sounds they make are similar to human speech sounds for the purposes of notation. So, sounds will be written as if they used standard human place and manner of articulation.

The biggest articulatory difference between humans and parrots is that parrots don't have lips, so they are not able to produce labials. In videos I found, experienced parrots can make labial-sounding sounds, but they aren't created using the edge of the beak, but by some other mechanism, perhaps the tongue. Psittacine will not have labials at all.

Some other notable features I noticed in videos are that parrots have very pronounced [ɻ] and [l] sounds, and don't make human-like trills. I chose to expand on the sound of strong approximants by including more approximants. I chose for there to only be voiceless plosives and fricatives, to produce a more "chitter-chatter" kind of sound.

	Alveolar	Retroflex	Velar	Glottal
Plosive	/t/ t		/k/ k	
Nasal	/n/ n		/ŋ/ g	
Fricative	/s/ s	/ʂ/ x		/h/ h
Affricate	/t͡s/ z	/t͡ʂ/ c		
Approximant		/ɻ/ r	/w/ w	
Lateral Approximant	/l/ l		/ʟ/ ł	

2.2 Vowels

Parrots have a complete range of vowel qualities, with no significant difference from humans. While they don't have lips, they can make rounded vowels with no problems, possibly using their tongue. I chose the following inventory because just because it contains both /æ/ and /ɑ/, which I plan to use in specific vocabulary items, and it isn't too imbalanced.

	Front	Mid	Back
High	/i/ i	/ɨ/ y	/u/ u
Mid	/e/ e		
Low	/æ/ a		/ɑ/ o

There are no diphthongs. There are some instances of adjacent vowels, all pronounced in hiatus.

2.3 Tones and Phonation

Since parrot speech is similar to birdsong, Psittacine will have a relatively high number of tones. Parrots also have atypical phonation. Creaky voice seems to be especially common in

the videos I saw. (Interestly, the combination of tone contours and phonation is also present in Vietnamese.)

Tones will only be applied to approximately one syllable per content morpheme, in a manner similar to the toned pitch accent system in Norwegian and Swedish. The tones on the accented syllables may allophonically affect tone in surrounding syllables, i.e. a low tone start on an accented syllable may make the syllable before also low.

The following tones and phonations will be available on all vowels. They are demonstrated on /ɑ/.

Description	Transcription
Mid tone	/ɑ˧/ o
High tone	/ɑ˥/ ō
Rising tone	/ɑ˧˥/ ó
Falling tone	/ɑ˩˧/ ò
Peaking tone	/ɑ˧˥˧/ ô
Creaky low	/ɑ̰˩/ õ
Creaky rising	/ɑ̰˧˥/ ǒ

2.4 Phonotactics

The syllable structure of the language is (C)(R)V(C), where C is a consonant, R is a (possibly lateral) approximant, and V is a vowel, with some tone if it is accented. When there is a syllable-initial consonant cluster, only the following CR groups are possible, chosen based on ease of pronunciation:

	t	k	n	g	s	x	h	z	c
r		✓		✓		✓	✓		✓
w	✓	✓	✓	✓	✓	✓	✓	✓	✓
l		✓			✓	✓	✓		
ł		✓			✓	✓	✓		

Otherwise, any consonant can start a syllable.

Any consonant other than h can end a syllable.

The central vowel is intended to be just one vowel, not a diphthong.

2.5 Example Phonotactically Sound Words

- wùg /wuŋ˩/ “me”
- słygiz /sɬiŋi͡ts˧/ “vine”
- hengó /henŋɑ˧˥/ “forest”
- rõk /ɻɑ̰k˩/ “mountain”
- kłas /kɬæ̰s˧˥/ “glass”

3 Pronouns

3.1 Pronouns

Pronouns pluralize by reduplication, and have an animacy distinction in 3rd person pronouns. Mass nouns are considered singular. First person plural can be inclusive or exclusive. Animals are animate, and everything else is inanimate. The decision to have pluralization for pronouns but not for nouns is taken from Chinese.

There is a 4th person "generic" pronoun, with singular used for generic "you" or generic "one" and plural used for generic "they". There is a single reflexive pronoun that applies for any person. It is pluralized to match its antecedent.

There are proximal and distal demonstratives in animate and inanimate forms. These are listed as pronouns. The adjective forms, e.g. "this book", are just normal adjectives, which will be derived from the pronoun forms with -hły attached. The adjective forms do not have plurals.

Person	Singular	Plural
1st	wùg	wùgwùg
2nd	à	àà
3rd animate	gó	gógó
3rd inanimate	zine	zinezine
4th	kȳt	kȳtkȳt
Reflexive (self)	xeł	xełxeł
Proximal demonstrative animate (this)	nôr	nôrnôr
Proximal demonstrative inanimate (this)	slôr	slôrslôr
Distal demonstrative animate (that)	kũx	kũxkũx
Distal demonstrative inanimate (that)	krũx	krũxkrũx

3.2 Examples

The following are a few examples of pronoun usage that are less obvious.

(1) kȳt xwéty gòni

kȳt xwé=ty gòn=i
4SG knowledge=POSS faith=ILL3
one knowledge=POSS faith=into

faith in one's knowledge

An instance of a 4th person singular pronoun in use.

(2) xrôł kȳtkȳt kazcǒ gó gón

xrôł kȳtkȳt kazcǒ gó gón
say 4PL want 3SG.ANIM food
say them want him food

They say he wants food.

An instance of a 4th person plural pronoun in use. The English phrase "They say …" is the most typical kind of usage for 4th person plural.

(3) xeł krârwik=ty
REFL.SG idea=POSS
self idea=POSS
one's own idea

An example of a reflexive pronoun in use. Without an antecedent, this could mean "my own idea", "your own idea", "its own idea", or "one's own idea". Reflexive possessives don't translate into English perfectly, so as an example, it would be used in "He disliked his idea", where "his" refers to the subject rather than someone else.

4 Nouns and Stance Forms

Inflectional morphology in nouns is very simple. Definiteness, gender, number, and case are not marked.

Stance forms are the main form of inflectional morphology for nouns. They are used instead of adpositions, and have a unique mechanism that I am not aware of in any natural language.

4.1 Inspiration for Stance Forms

While browsing Wikipedia at one point, I learned that some languages, most notably in the Semitic branch, have a "construct state" which involves modifying a noun to indicate that it is possessed by another noun. In Arabic, this process is called *iḍāfah*. One example Wikipedia gives in Egyptian Arabic is

malika	a queen
il-malika	the queen
malik(i)t	a/the queen of …

((i) is present or absent according to sandhi.)

I found this translation with "of …" unusual and decided it would be interesting to generalize this to positional as well as possessive relationships. When relating some noun (or noun phrase) to some location (or possessor), rather than keeping the noun the same and attaching an adposition to the location, I will modify the noun and keep the location the same. As far as I'm aware, no natural language does this, so I get to invent terminology! I call the modification of the noun a "stance form", since it indicates how the noun is positioned, which is a "stance" in a sense.

4.2 Inspirational for Dimensional Distinction

I also decided that since birds can fly, they live more three-dimensional lives than humans. Then, it is plausible that they would have more nuanced positional relations than humans, including a distinction between three-dimensional "in" and "on" and two-dimensional "in" and "on". For example, there may be walnuts three-dimensionally in a loaf of banana bread, while Rome is two-dimensionally in Italy (as on a map).

One source of inspiration for this is that in middle school, I got a 3D chess variant called YAVOCH. The lore in YAVOCH is that aliens are confronting humans and have given humans spaceships to allow a fair fight. Humans were unable to pilot the spaceships until they connected animal brain patterns to the systems. In particular, the animal brains (including birds) were better with 3D spatial movement than human logic was.

There was also a time in a math class long ago when the teacher referenced a point "on" a circle, meaning on the outline, but many students assumed it was an interior point. I thought it would be interesting to have a distinction.

4.3 Usage of Stance Forms

Stance forms will cover the following semantic roles, with corresponding English forms:

- Location of being
  - 2D in, 2D on, 3D in, 3D on
  - over, under, near, far from
- Location of motion, as origin, destination, or path
  - 2D into, onto, out of, off of, through, across, and 3D …
  - towards, away from
- Possession

Stance forms can also be used with partial nouns, like "top" or "side", which each are connected to their own nouns as possessed forms. The same partial noun can take on different meanings according to 2D or 3D interpretation. This can lead to very detailed descriptions of position or movement, such as going up a mountain to reach its top face (2D "top"), vs. going up a mountain to fly in the space at its peak (3D "top").

Using a stance form without a verb will translate to locational "be", "go", or possession, according to the meaning of the stance form. This can be thought of as a form of null copula.

The specific morphology of stance forms will be a simple suffix clitic. The syntax is that the location (or possessor) will come first, and the noun with the stance form will come second.

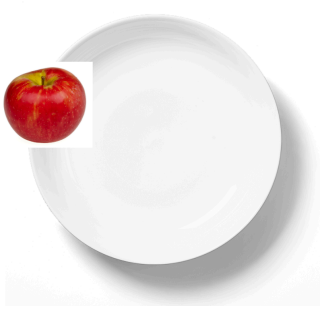
4.4 Examples

(4) hlātu gòna

hlātu gò=na
plate fruit=ADESS2
plate fruit=on

The fruit is on (2D) the plate.

(4) Considering the plate as a two-dimensional region, the fruit is on the edge.

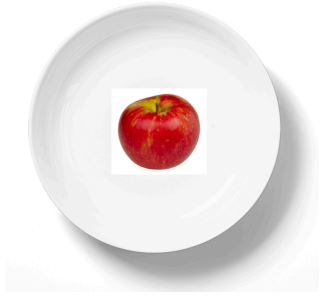


(5) hlātu gòni

hlātu gò=ni
plate fruit=INESS2
plate fruit=in

The fruit is in (2D) the plate.

(5) Considering the plate as a two-dimensional region, the fruit is in the interior.

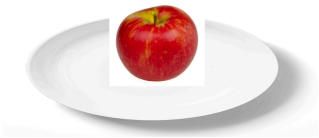


(6) hlātu gòla

hlātu gò=la
plate fruit=ADESS3
plate fruit=on

The fruit is on (3D) the plate.

(6) Considering the plate as a three-dimensional object, the fruit is at the exterior.



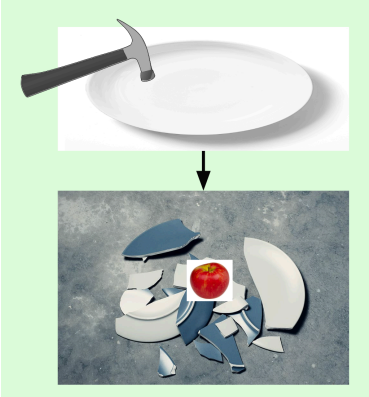
(6) Again considering the plate as a three-dimensional object, the fruit is painted onto the exterior.

(7) hlātu gòli

hlātu gò=li
plate fruit=INESS3
plate fruit=in

The fruit is in (3D) the plate.

(7) Considering the plate as a three-dimensional object, the fruit in the interior, surrounded by ceramic.



(8) hengó wùg=ni
forest 1SG=INESS2
forest I=in
I am in the forest.

Large areas like forests and countries are considered two-dimensional since they cover a flat area of the earth.

(9) rõk kwałŷx=la wùg lelō=ty=li
mountain tree=ADESS3 1SG nest=POSS=INESS3
mountain tree=on I nest=POSS=in
My nest is in the tree on the mountain.

Trees and mountains are considered three-dimensional. Nestled stance phrases behave as expected. Here, "nest" is part of two stance phrases, one of possession and one of location. The stance suffixes are placed one after the other, and the corresponding nouns are determined by order and context.

(10) kwałŷx xâr=ty słygiz=la
tree top=POSS vine=ADESS3
tree top=POSS vine=towards
The vine goes up the tree.

(11) crizĭ xâr=ty słygiz=na
house top=POSS vine=ADESS2
house top=POSS vine=towards
The vine goes up the house.

When a vine goes up a tree, it grows outwards in the space near the top of the tree, spreading in all directions. When a vine goes up a house, it lays flat on the roof, restricted to the plane the roof is in. So, "top" is used as 3D for the example with the tree, and as 2D for the example with the house.

5 Adjectives

Adjectives are very simple. They are simply placed before the noun.

5.1 Adjectivization

The -hły suffix marks adjectivization. The most important use of -hły is be turning material nouns into adjectives. As shown in the section about pronouns, -hły is also used to turn demonstrative pronouns into demonstrative determiners, which also act as normal adjectives.

(12) xrõk gón slôrhły hlātula

xrõk	gón	slôr-hły	hlātu=la
amazing	food	DEM.PROX-ADJ	plate=ADESS3
amazing	food	this	plate=on

the amazing food on this plate

This example is ambiguous; the above phrase also could mean "the amazing food on the plate made of this [material]".

(13) twazwahły wihŭ

twazwa-hły	wihŭ
metal-ADJ	bird
metal	bird

airplane

(14) kłăshły nūr

kłăs-hły	nūr
glass-ADJ	light
glass	light

lightbulb

A number of terms that may be simple or compound words in English are referred to with adjective-noun phrases in Psittacine. Material adjectives are common for this.

5.2 Adverbs

Adverbs are just adjectives placed before verbs rather than before nouns.

(15) cỳłty kwŏn wùg.

cỳłty	kwŏn	wùg
happy	sleep	1SG
happy	sleep	me

I sleep happily.

6 Verbs

Verbs in Psittacine are rather simple morphologically. They have some inflectional morphology but do not change for agreement in person or number with the subject or object. However, they do have more complicated syntactic mechanisms.

6.1 Word Order

The typical word order is

Verb Subject [Direct Object [Indirect Object]]

where each verb takes a specific number of arguments. The language is strictly nominative-accusative. Word order is the only indication of which noun is the subject, direct object, or indirect object.

(16) kwŏn wihŭ.

kwŏn wihŭ
sleep bird
sleep bird

The bird sleeps.

(17) krân wùg wug.

krân wùg wug
see 1SG dog
see me dog

I see the dog.

(18) krân wug wùg.

krân wug wùg
see dog 1SG
see dog me

The dog sees me.

(19) gāw gó hlātu wùg.

gāw gó hlātu wùg
give 3SG.ANIM plate 1SG
give him plate me

He gives me a plate.

6.2 Auxiliary Verbs

Verbs have an intrinsic valency. Some are intransitive, some are transitive, and a few are ditransitive. The language uses auxiliary verbs with gerunds to change transitivity.

Gerunds are formed by adding the suffix *-ga* to a verb.

The auxiliary verb *zà* "do" can take a transitive or ditransitive gerund as an object and produce an intransitive form. *zà* is used exclusively for changing valency and cannot be used for sentences like "I do the homework".

(20) zà wihŭ kōgga.

zà wihŭ kōg-ga
do bird eat-GER
do bird eating

The bird eats.

(21) zà kwałŷx gāwga.

zà kwałŷx gāw-ga
do tree give-GER
do tree giving

The tree gives. / The tree provides.

The auxiliary verb *hłĩ̂k* "make, cause" can take a gerund as an object. If the gerund is possessed by a noun, the noun is the patient of the sentence. The causative formed is the most general type of causative, where the patient is not necessarily forced.

In the following two examples, *xrîz* is naturally intransitive.

(22) hłĩ̂k howeg kwałŷx xrîzgaty.

hłĩ̂k howeg kwałŷx xrîz-ga=ty
make wind tree shake-GER=POSS
make wind tree shaking=POSS

The wind makes the tree shake. / The wind shakes the tree.

(23) hłĩ̂k howeg xrîzga.

hłĩ̂k howeg xrîz-ga
make wind shake-GER
make wind shaking

The wind shakes [things].

(24) hłîk wihŭ xăw wihŭ kōggaty.

hłîk wihŭ xăw wihŭ kōg-ga=ty
make bird small bird eat-GER=POSS
make bird small bird eating=POSS

The bird makes the chick eat. / The bird feeds the chick.

The auxiliary verb *xal* "make, cause", similarly to *hłĩk*, takes a gerund as an object. However, *xal* also takes in indirect object, which acts as the direct object of the original transitive verb.

(25) xal wihŭ xăw wihŭ kōggaty gò.

xal wihŭ xăw wihŭ kōg-ga=ty gò
make bird small bird eat-GER=POSS fruit
make bird small bird eating=POSS fruit

The bird makes the chick eat fruit. / The bird feeds the chick fruit.

6.3 Replacements for be, have, and go

The language uses the zero copula. This may be used to relate two nouns or state a noun in a stance form. Because of the language's complex directional system, this takes the place of "to be", "to go", and "to have".

(26) wùg hełă.

wùg hełă
1SG human
me human

I am a human.

(27) zine wùg zyla nũrty.

zine wùg zyla nũr=ty
3SG.INANIM 1SG blue feather=POSS
it me blue feather=POSS

It's my blue feather.

(28) wùg zyla nũrty.

wùg zyla nũr=ty
1SG blue feather=POSS
me blue feather=POSS

The blue feather is mine. / I have a blue feather.

(29) crizĭ xârty słygizna.

crizĭ xâr=ty słygiz=na
house top=POSS vine=ADESS2
house top=POSS vine=towards

The vine goes up the house.

Statement of existence equivalent to "there is" does not have a unique construction. Rather, it is treated as a place having things. If the statement of existence is too general to be tied to a particular place, "here" is used by default, or if that is ambiguous, "the world" is used.

(30) kwałŷx gòty.

kwałŷx gò=ty
tree fruit=POSS
tree fruit=POSS

The tree has fruit. / There is fruit in the tree.

(31) kûk crizĭty.

kûk crizĭ=ty
here house=POSS
here house=POSS

There are houses here. / There are houses [in general].

Adjectives act like intransitive verbs.

(32) zyla nũr.

zyla nũr
blue feather
blue feather

The feather is blue.

6.4 Negation

A verb is negated by adding the suffix *-hy*.

(33) lȳthy èt húgni.

lȳt-hy èt húg=ni
fly-NEG night bees=INESS2
fly-not night bees=at

The bees do not fly at night.

(34) kōghy wùg rãw.

kōg-hy wùg rãw
eat-NEG 1SG meat
eat-not me meat

I do not eat meat.

Since adjectives are like verbs, the suffix can be added directly to an adjective.

(35) zine twazwahłyhy.

zine	twazwa-hły-hy
3SG.INANIM	metal-ADJ-NEG
it	metal-not

It's not made of metal.

This also applies to adjectives that are not directly acting as verbs. The most obvious application of this is in disambiguation, but it can also just be a simple description (not quite an antonym, just a lack of a trait).

(36) kōghy wihŭ zighy gò.

kōg-hy	wihŭ	zig-hy	gò
eat-NEG	bird	fresh-NEG	fruit
eat-not	bird	fresh-not	fruit

The birds do not eat unfresh fruit.

Since there is no verb when relating two nouns or stating a noun in a stance form, a special verb must be used for negating such a statement. *ì* "be / go" is used with the negation suffix attached. *ì* is special in that it is neither transitive nor intransitive, and accepts either two nouns or one noun in a stance form.

(37) ìhy wùg wihŭ.

ì-hy	wùg	wihŭ
be-NEG	1SG	bird
be-not	me	bird

I am not a bird.

(38) ìhy èt kûkni twazwahły hūtna.

ì-hy	èt	kûk=ni	twazwa-hły	hūt=na
be-NEG	night	here=INESS2	metal-ADJ	caterpillar=ADESS2
be-not	night	here=at	metal	caterpillar=towards

The trains do not go here at night.

6.5 Tense

There are four tenses, present, past, future, and remote past, used for example when telling stories. The present is unmarked. The other tenses are indicated by verbal suffixes.

(39) kwŏnce wùg.

kwŏn-ce wùg
sleep-PST 1SG
slept me

I slept.

(40) zàcat takís gréga.

zà-cat takís gré-ga
do-HST country farm-GER
did country farming

The country farmed [once upon a time].

The tense suffixes occur before *-hy*.

(41) xwèwykhy wùg agìty zine.

xwè-wyk-hy wùg agì=ty zine
know-FUT-NEG 1SG friend=POSS 3SG.INANIM
know-will-not me friend=POSS it

My friend will not know it.

"be", "have", and "go" are usually expressed without a verb in the present tense. In the other tenses, they must have a verb. Forms which take one noun in a stance form use the same *ì* that negation uses. However, forms which relate two nouns use the suppletive verb *sèt*, which is not used in present tense.

(42) sètwyk hełă wùg agìty.

sèt-wyk hełă wùg agì=ty
be-FUT human 1SG friend=POSS
be-will human me friend=POSS

The human will be my friend.

(43) ìce lutlùt wùgna.

ì-ce lutlùt wùg=na
be-PST river 1SG=ADESS2
was river me=at

I was at the river.

(44) ìce lutlùt wùgza.

ì-ce lutlùt wùg=za
be-PST river 1SG=ALL2
went river me=to

I went to the river.

(45) ìcat à gónty.

ì-cat à gón=ty
be-FUT 2SG food=POSS
have-will you food=POSS

The food will be yours. / You will have food.

Adjectives simply take tense suffixes like normal verbs.

(46) xăwcat wùgwùg.

xăw-cat wùgwùg
young-HST 1PL
young-were we

We were young [long ago, or in a story].

6.6 Aspect and Mood

Semantic aspect and mood are not indicated grammatically. Rather, if they have reason to be expressed, they are just adverbs (or sometimes complex constructions if more detail is required).

Example for progressive aspect.

(47) taktak lȳtce wihŭ.

taktak lȳt-ce wihŭ
for.some.time fly-PST bird
for.some.time flew bird

The bird flew for some time. / The bird was flying.

Example for iterative aspect.

(48) ò xenãtce wùg sōkrohły lâl.

ò xenãt-ce wùg sōkro-hły lâl
again read-PST 1SG leaf-ADJ song
again read me leafy song

I read the book again. / I reread the book.

Example for potential mood. Most adverbs don't apply to the copula in a natural way, but this is an instance where it can happen. Adverbs applied to the null copula just end up at the start of the sentence.

(49) cēłta zine rõk.

cēłta zine rõk
might 3SG.INANIM mountain
might it mountain

It might be the mountain.

7 Syntax

Basic word order has already been explained. Once again, it is

Verb Subject [Direct Object [Indirect Object]]

There are a number of other syntactic mechanisms for more structurally complex sentences.

7.1 Conjunctions and Conditionals

The basic conjunctions are *tot* "and" and *cec* "or". When joining two items, the conjunction is placed between. When joining three or more items, the conjunction may be placed between each item or may be used just once after all the items. Parallel items all undergo any expected inflection.

(50) cǎwce nī tot wihǔ.

cǎw-ce nī tot wihǔ
loud-PST cat and bird
loud-were cat and bird

The cat and the bird were loud.

(*kȳhi* is an adverb.)

(51) kȳhi à húgty hūtty crákty cec.

kȳhi à húg=ty hūt=ty crák=ty cec
able 2SG bee=POSS caterpillar=POSS ant=POSS or
able you bee=POSS caterpillar=POSS ant=POSS or

You can have the bee, the caterpillar, or the ant.

(52) lȳtce, toktõkce, slêxce tot wùgwùg.

lȳt-ce toktõk-ce slêx-ce tot wùgwùg
fly-PST run-PST swim-PST and 1PL
flew ran swam and us

We flew, ran, and swam.

This is also how clauses are joined by conjunctions.

(53) toktõkce nī, tot gēntyce wug nī.

toktõk-ce nī tot gēnty-ce wug nī
run-PST cat and follow-PST dog cat
ran cat and followed dog cat

The cat ran, and the dog followed the cat.

(54) krânce wihŭ nī, krânce nī wug, krânce wug hełă tot

krân-ce wihŭ nī krân-ce nī wug krân-ce wug hełă tot
see-PST bird cat see-PST cat dog see-PST dog human and
saw bird cat saw cat dog saw dog human and

The bird saw the cat, the cat saw the dog, and the dog saw the human.

The emphasized forms "either …or" and "both …and" can be expressed by placing the conjunction between the words and after the list.

(55) nácce wùg sōkrohły lâl tot zū sōkro tot.

nác-ce wùg sōkro-hły lâl tot zū sōkro tot
take-PST 1SG leaf-ADJ song and thick leaf and
took me leafy song and thick leaf and

I took both the book and the card.

Conditional compound sentences are formed similarly to conjunctive compound sentences, by putting the clauses on either side of a linking word. In English, the words relating the clauses can occur in various places, e.g. "If X, then Y" vs. "When X, Y" vs. "X, yet Y". I instead have just one word that is always between the two sides.

English has special rules for how tenses are expressed under irrealis moods (specifically, "if I were" is the prescribed standard). I choose for tenses to be expressed based only on time.

(56) xal à łỹz tāgagaty, xīg kùwixwyk wùg zinezine.

xal à łỹz tāga-ga=ty xīg kùwix-wyk wùg zinezine
make 2SG flower grow-GER=POSS if.then buy-FUT 1SG 3PL.INANIM
make you flower growing=POSS if.then buy-will me them

If you grow flowers, I will buy them.

(57) nácce gó rõrhły cíntag, wên gŭzce zine lúkty rygi.

nác-ce gó rõr-hły cíntag wên gŭz-ce zine lúk=ty
take-PST 3SG.ANIM gold-ADJ statue when.then put-PST 3SG.INANIM place=POSS
took him golden statue when.then put it place=POSS
ryg=i
sand=ILL3
sand=ILL3

When he took the golden statue, he put sand in its place.

7.2 Subordinate Clauses

A subordinate clause describing a noun (i.e. a relative clause) is formed by using the clause in its standard form, replacing each referent to the noun with the appropriate demonstrative pronoun form of "that", and then following the clause with the determiner form of "that" and the noun. If the demonstrative pronoun comes right before the demonstrative determiner, the pronoun can be dropped.

(58) krân wùg xłŏsce à krũxhły rõk.

krân	wùg	xłŏs-ce	à	krũx-hły	rõk
see	me	draw-PST	2SG	DEM.DIST.INANIM-ADJ	mountain
see	me	drew	you	that	mountain

I see the mountain that you drew.

(59) zine zīghy krũx kȳt krũxhły kiłìl.

zine	zīg-hy	krũx	kȳt	krũx-hły	kiłìl
3SG.INANIM	harm-NEG	DEM.DIST.INANIM.SG	4SG	DEM.DIST.INANIM-ADJ	secret
it	harm-not	that	one	secret	

It is a secret that does not harm one.

(I translate *sît* as "seek" in the gloss since it is transitive, but as "search" in the translation since that is the translation that is more faithful to meaning.)

(60) câwtuce zàce kũx sîtga kũxhły húg łỹz.

câwtu-ce	zà-ce	kũx	sît-ga	kũx-hły	húg	łỹz
find-PST	do-PST	DEM.DIST.ANIM.SG	seek-GER	DEM.DIST.ANIM-ADJ	bee	flower
found	did	that	seeking	that	bee	flower

The bee that searched found the flower.

Instrumentals are expressed using this form. To say "A did B with C", use "A that use[d] C did B" (in the approprate tense).

(61) tèkce krũx kwal õgce krũxhły lutlùt rõk.

tèk-ce	krũx	kwal	õg-ce	krũx-hły	lutlùt
hit-PST	DEM.DIST.INANIM.SG	use-PST	water	DEM.DIST.INANIM-ADJ	river
hit	that	used	water	that	river
rõk					
mountain					
mountain					

The river hit the mountain with water.

A subordinate clause acting as a noun is expressed the same way,but just with the demonstrative pronoun at the end, rather than the demonstrative determiner and a noun.

(62) câwtuce wùg sîtce wùg krũx.

câwtu-ce	wùg	sît-ce	wùg	krũx
find-PST	1SG	seek-PST	1SG	DEM.INANIM.DIST.SG
found	me	sought	me	that

I found what I was searching for.

(63) nôrhły él hēwakce kũx kwal kũx.

nôr-hły	él	hēwak-ce	kũx	kwal
DEM.ANIM.PROX-ADJ	person	drink-PST	DEM.ANIM.DIST.SG	water
this	person	drank	that	water
kũx				
DEM.ANIM.DIST.SG				
that				

This person is who drank the water.

A clause acting as a noun (i.e. a content clause) is expressed by simply placing the subordinate clause directly within the outer clause. This is similar to the English form that elides "that".

(64) xwè wùg krânce gó wùgwùg.

xwè	wùg	krân-ce	gó	wùgwùg
know	1SG	see-PST	3SG.ANIM	1PL
know	me	saw	him	us

I know that he saw us. / I know he saw us.

7.3 Questions

All questions have the question particle *ã̀* at the front.

A polar question is formed by adding the question particle *ã̀* at the front of the sentence, and adding *ha* "yes" or *ỉk* "no" to the end. There is no significant difference between the two options (meaning neither is the expected answer).

(65) ã, câwtuce gógó wug, ha?

ã	câwtu-ce	gógó	wug	ha
Q	find-PST	3PL.ANIM	dog	yes
Q	found	them	dog	yes

Did they find the dog?

(66) ã, kōgce gréryl kŏg?

ã	kōg-ce	gré-ryl	kŏg
Q	eat-PST	farm-AGT.ANIM	grain
Q	ate	farmer	grain

Did the farmer eat the grain?

An open question is formed by adding the question particle *ã* at the front of the sentence, and using the interrogative pronoun *twãx* for inanimate topics and *tãx* for animate topics. Just like other pronouns, these reduplicate for plurals and take the *-hły* adjectival suffix to form determiners. (INT means interrogative pronoun.)

(67) ã, câwtuce twãx gógóni wug?

ã	câwtu-ce	twãx	gógó=ni	wug
Q	find-PST	INT.INANIM.SG	3PL.ANIM=INESS2	dog
Q	found	what	them=at	dog

Where did they find the dog?

(68) ã, hłîkce tãxtãx à krângaty sōkro?

ã	hłîk-ce	tãxtãx	à	krân-ga=ty	sōkro
Q	make-PST	INT.ANIM.PL	2SG	see-GER=POSS	leaf
Q	made	who	you	seeing=POSS	leaf

Who (pl.) showed you the leaf?

(69) ã, kōgce à twãx?

ã	kōg-ce	à	twãx
Q	eat-PST	2SG	INT.INANIM.SG
Q	ate	you	what

What did you eat?

(70) ã, lāl à twãx-hły lâl?

ã	lāl	à	twãx-hły	lâl
Q	sing	2SG	INT.INANIM-ADJ	song
Q	sing	you	what	song

What song are you singing?

For questions with options, simply list the options at the end of the question, joining them with "or".

(71) ã, kazcŏ à twãxhły, hlātu, cycīl, zyla cec?

ã	kazcŏ	à	twãx-hły	hlātu	cycīl	zyla	cec
Q	want	2SG	INT.INANIM-ADJ	plate	red	blue	white or
Q	want	you	what	plate	red	blue	white or

Which plate do you want, red, blue, or white?

8 Derivational Morphology

One instance of derivational morphology has already been explained in a previous section, which is *-hły*, a suffix that forms adjectives out of materials. It is overloaded to create determiner forms of demonstrative pronouns.

(72) ã, kazcǒ à twãxhły, hlātu, cycīl, zyla?

ã	kazcǒ	à	twãx-hły		hlātu	cycīl	zyla	
Q	want	2SG	INT.INANIM-ADJ		plate	red	blue	white
build-HST	bird	grassy	nest,		wooden	nest,	stone	nest and

The birds built a grass nest, a wooden nest, and a stone nest.

-kac takes an adjective and turns it into a verb with "become", like the intransitive forms of the English suffixes "-ify" and "-ize". This is semantically somewhat similar to the auxiliary forms from earlier, but I chose a different mechanism because it only applies to adjectives.

(73) cycīlkacce zān.

cycīl-kac-ce	zān
red-become-PST	sky
became.red	sky

The sky became red. / The sky reddened.

(74) kłàzkacce zine wên gūskacce zine.

kłàz-kac-ce	zine	wên	gūs-kac-ce	zine
dry-become-PST	3SG.INANIM	when.then	small-become-PST	it
dried	it	when.then	shrank	it

When it dried, it shrank.

-ryl takes a verb and makes an animate agentive noun. *-łyr* takes a verb and makes an inanimate agentive noun.

(75) xwè slêxryl kwal.

xwè	slêx-ryl	kwal
know	swim-AGT.ANIM	water
know	swimmer	water

The swimmer knows the water.

(76) sîtce kũx õgce tylĭnłyr kũxhły wùg rõr

sît-ce	kũx	õg-ce	tylĭn-łyr	kũx-hły	wùg	rõr
seek-PST	DEM.ANIM.SG	use-PST	dig-AGT.INANIM	DEM.ANIM-ADJ	1SG	gold
sought	that	used	spade	that	me	gold

I searched for gold with the spade.

-zoc takes a verb or adjective and forms a noun representing the process or result of the action (like "-tion" or the "-th" in "growth" and "theft") or the state of the adjective (like "-ness").

(77) kȳhihy kùwix kȳt cỳltyzoc.

kȳhi-hy kùwix kȳt cỳlty-zoc
able-NEG buy 4SG happy-NMLZ
able-not buy one happiness

One cannot buy happiness.

(78) ã, twãxtwãx à câwtuzocty?

ã twãxtwãx à câwtu-zoc=ty
Q INT.INANIM.PL 2SG find-NMLZ=POSS
Q what you findings=POSS

What are your findings?

-łon takes a noun and forms an adjective of similarity, like "-like" in English.

(79) kiɬìlłon wùgwùg xwẽ crizǐtyty.

kiɬìl-łon wùgwùg xwẽ crizǐ=ty=ty
secret-like 1PL study house=POSS=POSS
secretive us study house=POSS=POSS

Our school is secretive.

(80) sû nīłon à wugty.

sû nīłon à wug=ty
very cat-like you dog=POSS
very catlike you dog=POSS

Your dog is very catlike.

-et takes a verb and forms an adjective that usually means a specialized or generalized version of the past participle. As in English, the participle applies to the object of a transitive verb or the subject of an intransitive verb. (Wikipedia calls this behavior some distinction between active and passive uses.)

(81) ōt tùl tùlkacet sōkro kwalty.

ōt tùl tùl-kac-et sōkro kwal=ty
should sweet sweet-become-PTCP leaf water=POSS
should sweet sweetened leaf water=POSS

The sweetened tea should be sweet.

(82) ã, kōgwyk à gréet gò, ha?

ã	kōg-wyk	à	gré-et	gò	ha
Q	eat-FUT	2SG	farm-PTCP	fruit	yes
Q	eat-will	you	farmed	fruit	yes

Will you eat the farmed fruit?

(83) xrôk tāgaet wihŭ.

xrôk	tāga-et	wihŭ
big	grow-PTCP	bird
big	grown	bird

The grown bird is big.

9 Cognitive Metaphor

Metaphors pervade human speech. Many, many things are referred to by completely different things. Parrots have metaphor too, and notably the most common metaphors differ significantly from common human metaphors.

9.1 Experiences as Flights

Parrots are flying creatures. While they are adept climbers without their wings, they rely on flight for almost all their movement, as much as humans rely on walking. This leads to pervasive metaphor involving flight.

(84) rõk howeg=nosa
mountain wind=ABL3
mountain wind=from
Wind comes from the mountain.

This is like the English metaphor of "the path ahead is long and difficult", but parrots don't use paths, they fly. A headwind will make flight slower and more difficult, while a tailwind will make flight faster and easier.

This particular sentence could be interpreted literally, or idiomatically as "Mountain-climbing is difficult", or perhaps as something else compared to mountain-climbing is difficult.

9.2 Speech as Song

Parrots' logical thinking does not occur in the cerebral cortex, but rather in the HVC (an acronym that no longer has meaning), which is the area of the brain responsible for birdsong. Language will also be processed by the same brain region, so parrots will consider language and song to be almost the same. This results in some interesting lexical terms. For example,

(85) sōkrohły lâl.

sōkro-hły lâl
leaf-ADJ song
leaf song

book

A book is referred to as "a song made of leaves", meaning that speech (song) is written onto pages (leaves).

10 Glossary

All nonstandard Leipzig-style abbreviations used in the examples are listed. There are more unlisted stance forms that were not used, which are for ablative, adessive, allative, elative, illative, and inessive forms. These are *not* noun cases, as they don't attach to locations. I am overloading the notation to express similar spatial relations.

Abbreviations

ABL3	3d ablative
ADESS2	2d adessive
ADESS3	3d adessive
ADJ	adjective
AGT	agentive
ALL2	2d allative
ANIM	animate
DEM	demonstrative
DIST	distal
FUT	future
GER	gerund
HST	historical
ILL3	3d illative
INANIM	inanimate
INESS2	2d inessive
INESS3	3d inessive
INT	interrogative
NEG	negative
NMLZ	nominalizer
PL	plural
POSS	possessive
PROX	proximal
PST	past
PTCP	participle
Q	question particle
REFL	reflexive
SG	singular