



Teaching a Story with an Analyzer

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Sweyaajmodaa Project - Ojibwe Cultural Foundation
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Gchi-Miigwech

Huge thanks to Mary Ann Corbiere and Rand Valentine for letting us piggy-back on their dictionary work.

See the [Gchi-Miigwech](#) page for the many other people and institutions that have been involved at various other points.



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ENDOWMENT
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HUMANITIES

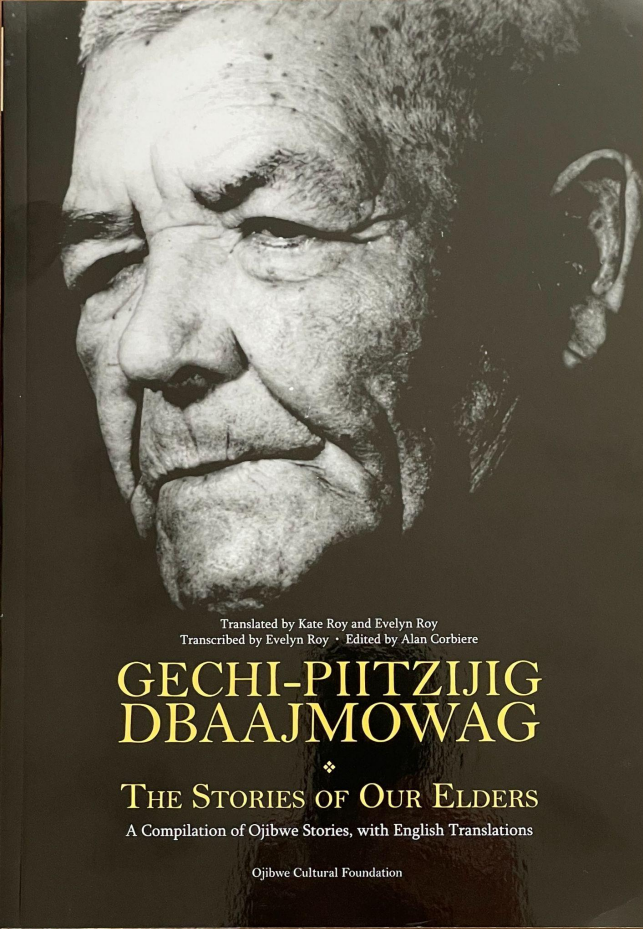
Goal



Show how you can use the Nishnaabemwin Analyzer tool in your teaching

Authentic Anishinaabemowin stories are challenging

Analysis tools let you scaffold grammar and vocabulary for stories



Translated by Kate Roy and Evelyn Roy
Transcribed by Evelyn Roy • Edited by Alan Corbiere

GECHI-PIITZIJIG DBAAJMOWAG

THE STORIES OF OUR ELDERS

A Compilation of Ojibwe Stories, with English Translations

Ojibwe Cultural Foundation

[Gechi-piitzijig dbaajmowag = the stories of our elders : a compilation of Ojibwe stories, with English translations.](#) Kate Roy(translator), Evelyn Roy (translator and transcriber), Alan Corbiere (editor). Ojibwe Cultural Foundation, 2011.

1

Gaa-zhi-naajtood Mshkiigwaatig Wgi-zhaabnigan



How the Tamarack Tree Lost Its Needles



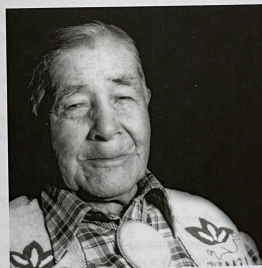
Debaajmod / Storyteller: Katherine Joe
Sagamok Anishnawbek

4

Mnidoo Mnis Aansookaanan



Stories of Manitoulin Island



Debaajmod / Storyteller: Phillip Pitawanakwat
Wikwemikong Unceded First Nation

2

Kanaak Gaa-nji-bepeshshaakzid



Why the Turtle Has Stripes on Its Back



Debaajmod / Storyteller: Dominic Eshkakogan
Sagamok Anishnawbek, Feb 7, 1991

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Zhiishiigwaaning Nango Enji-zhinkaadeg



How Sheshegwaning Got Its Name



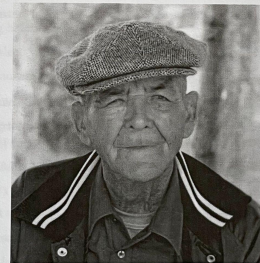
Debaajmod / Storyteller: Mary Grace Peltier
Wikwemikong Unceded First Nation, Oct 11, 1975

3.

Anishinaabe Miikan



The Anishinaabe Road



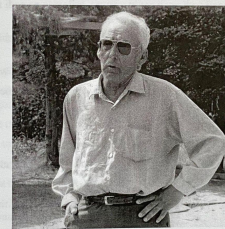
Debaajmod / Storyteller: Dan Pine
Garden River First Nation, 198u

6

Pahiinsag miinwaa Nimkiig Aansookaan



Legend of the Little People and the
Thunderers



Debaajmod / Storyteller: William Trudeau
Wikwemikong Unceded First Nation

Story overview



-Take a moment to read the story we sent to you-

Is it similar to what you use in the classroom?

How much of it would your students understand without your help?

What would make it easier for you to teach it to your students?

The big challenges are:

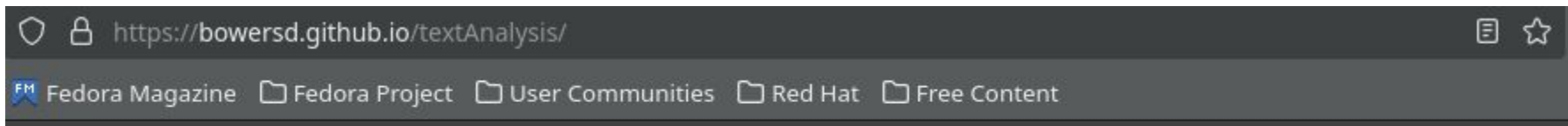
knowing what words mean (vocabulary)

knowing how words work in the sentence (grammar)

Getting the Vocabulary

We made some tools to help

<https://bowersd.github.io/textAnalysis/>



Anishinaabemowin Analysis

[Gchi-Miigwech](#) [Background](#) [Contact](#) [Codes Explainer](#) [Analysis](#) [Privacy](#) [Sentences](#)

Tool Overview

The website can build **vocabulary** and **grammar** teaching tools

1. **Glossary** (word sorting)
2. **Crib sheet** (words as written in story)
3. **Frequency count** (# of occurrence sorting)
4. **Sentence sort** (complexity sorting)
5. **Sentence sort** (group sentences with similar verbs)
6. **Verb collation** (group verbs with similar grammar)
7. **Base analysis** (show everything for each sentence)

Ignore the “unanalyzed words” option, they were originally made to help with debugging

1. Select an analysis option below...

I want to get:

- base analysis (interlinear)
- base analysis (interlinear)
- glossary
- crib sheet
- frequency count
- sentence sort (by complexity)
- sentence sort (by verb type)
- verb collation
- unanalyzed words (alphabetical)
- unanalyzed words (alphabetical from end)

2. Type or paste

... is available here):

Starting with glossaries



Vocabulary seems like a good place to start

I'd introduce vocabulary via the glossary option

The glossary option alphabetizes all the dictionary entries used in the story

NB: First 3 columns can be used like “flip charts”

NOD/OPD Entry	Part of Speech	Terse Translation	Count	Show/Hide Examples
aanind	Adv	'some'	1	(click for examples)
aanmizi	VAI	'distressed'	1	(click for examples)
aapji	Adv	'very'	1	(click for examples)

Getting the glossary



Step 1: Copy-paste or type in the story

I recommend making a file on your own computer so you have a safe copy

Putting each sentence on its own line makes life easier down the road

I have a searchable pdf, copy-paste and double-checking tool **~30 minutes**

Step 2: Go through the steps on the website

I set *Nishnaabemod* to “1” and *Nishnaabemat* to “2”

Ok! 69% of the words in the story got analyzed and put into the glossary:

Overall word count: 126

Analyzed word count: 87 (56 without repetitions/variants)

Unanalyzed word count: 39

Adding value to the glossary



You could just tell students to study the glossary as is

To get more out of it, will talk about

- Downloading and re-formatting glossary

- Adding in unanalyzed words

- Sifting glossary for specific lessons

Prepping the Glossary

Download the glossary



You get more control if you download as a spreadsheet

Download buttons are at bottom of screen

“xlsx” = Microsoft Excel format, a widely used standard

Enables fancier formatting: links preserved

“csv” = comma separated values, a common bare-bones format

No need to use unless you really want to

For now, “Table 1” = analysis table, “Table 2” = unanalyzed words table

Example sentences are incomplete in downloads (fixing!)

Example sentences are complete in the web version.

Check the translations

Double-check the 'terse translation' with:

click (website)

ctrl-click (spreadsheet, pictured)

If you find one that seems off, please let me know so I can update it!

1	NOD/OPD	Part of Sp	Solution	Count	Example Sentence
2	aanind	Adv	'some'	1	maanda aapi ka-bnaa
Ctrl-click to open hyperlink: https://dictionary.nishnaabemwin.n72973362458n					
3	bbbn	vii	winter	1	ngooding gchi-zhaazhi

aanind *av* also **aanin**

some, a few

EXAMPLES

Aabdaagmadaan niibiishaaboo; jaagsenik, mii go miinwaa aanin zhitoot.

He drinks tea continually; when it's gone, he makes some more right away. - MC2005.cs

Miijin aanind; niibna गयाabi temgat.

Eat some; there's lots more [of it]. - MC2005.cs

Mshiimnak aanind ngii-biinaak.

I brought some apples. - MC2005.cs

Add in unanalyzed words

39 words were not analyzed -> detective work!

1. Make columns like in analysis_table_1 (NOD Entry, Part of Speech, Translation, etc)
2. Fill in these columns as much as possible
3. Copy example cells onto main line, delete example rows
4. (**Bold** the NOD entries if you really want them to stand out)
5. Select the new columns, copy them into your main spreadsheet
6. Sort relevant column

Word	Broad Analysis	NOD/OPD Entry	Part of Speech	Terse Translation	Count	Example sentence
gesna	Adv	gesnaa	Adv	ever	1	gesna ka-gwetaani
giiyenh	Adv	giiyenh	Adv	reportedly	2	megwaa nen mij d

The toil of unanalyzed words



When I reviewed these:

About $\frac{1}{2}$ were simple “mistakes” (sh -> zh, k -> gg/gk, unexpected vowels, hyphens)

About $\frac{1}{4}$ were tricky (word not in the dictionary, suffix-word mismatch)

All told, ~4 hours of work ... that’s a lot

-> all 126 words without the tool could take ~13 hours

Monks used to spend their whole lives doing this for one book

Sifting the Glossary

Group by vocabulary type

A big alphabetical list is nice, but no focus

NOD/OPD Ent#	Part of Speech	Terse Translation
aanind	Adv	'some'
aanmizi	VAI	'distressed'
aapji	Adv	'very'
bboon	VII	'winter'
biijbiza	VAI	'present'
dash	Adv	'next'

Sort by “Part of Speech” column -> better grouping

aanmizi	VAI	'distressed'
biijbiza	VAI	'present'
biingeji	VAI	be cold
bnaakwii	VAI	lose leaves
boonii	VAI	land, alight
dbinooshin	VAI	take shelter

aanind	Adv	'some'
aapji	Adv	'very'
dash	Adv	'next'
dbishkoo	Adv	'similar'
gaawiin	Adv	'no/no'
gchi-zhaa	Adv	'ancient'

bboon	VII	'winter'
dgwaagi	VII	'autumnal'
dgwaagi	VII	autumn
gsinaa	VII	'chilly'
gwiishkst	VII	whistle
maadse	VII	'commence'

Teach by vocabulary type (Pronouns)

Lots of wholesome nouns in noun section

Except *gaa*, which is not “pickerel” here...

Familiar topics to teach:

meanings

-n vs -g/k plurals

But some don't really fit

These are pronouns ... an opportunity!

bnesi	NA	bird
gaa(alt 1)	NA	'no/pickerel'
gaagaagwans	NA	black spruce
gaawaandak	NA	'spruce'
gegiin	NA	you too
giizhkaandag	NA	'cedar'
giwi	NA	'they'
gonda	NA	'these'
maaba	NA	'this'
mshkiigwaatik	NA	'tamarack'
mtik(alt 1)	NA	'tree/wood'
Nenbosh	NA	Nenabozhoo
niin	NA	'I'
wa	NA	'it'
gegoo	NI	'any'
gzhaabnigaar	NI	needle
ki	NI	Earth
maanda	NI	'this'
niibiish	NI	'leaf'
noodin(alt 1)	NI	'wind/blustery'
wi	NI	'that'

Straightforward lessons with pronouns

Relabel and re-sort to see pronouns in one spot

Simple, expandable lessons (w/ examples!):

The -g/k plurals go with *maaba*, *giwi*, *gonda*, *wa*

gii-noondoong gii-konaashkawdwaa giwi bneshiinsag bebaa-ndadbinooshnijig

ngoding gchi-zhaazhi maaba mshkiigwaatig gii-aabji-gnaajwi niibing miinwaa go bboong

(... And the -n plurals go with *maanda*, *wi*)

Personal pronouns are *niin* (and *giin*, *wiin*)

There are “you too” pronouns: *gegiin*, (*geniin*, *gewiin*) (+ “you first” *giintam*, *niintam*, *wiintam*)

gegiin	Pron NA	you too
giwi	Pron NA	'they'
gonda	Pron NA	'these'
maaba	Pron NA	'this'
niin	Pron NA	'I'
wa	Pron NA	'it'
gegoo	Pron NI	'any'
maanda	Pron NI	'this'
wi	Pron NI	'that'

Examples inspire further lessons

The story doesn't show *maanda* and *wi* combining directly with *-n* plurals

Still teachable though ... we see *maanda* stand in for implied concepts:

[*maanda* *apii*] *ka-bnaakwii* ...

[this when] you.will.shed.leaves ...

'[Around this (time)] you will shed leaves

And *wi* refers to an action (relative clause):

Wi *dash gaa-zhichgeyin*

That <result> what.you.did

Because of that thing you did

Word order for pronouns

Examples show that **pronouns** precede the **noun**

mii gii-noondaagzid **wa** mshkiigwaatig.

But **other** material can slip in (and not only modifiers of the noun)

(1) **Wi** **dash** **gaa-zhichgeyin** ...

That <result> **what.you.did**

'Because of **that** thing you did'

(2) **aapji** **dash** **maaba** **iidig** **gwetaanzid** **mshkiigwaatig** ...

Very <result> **this** **reportedly** **that.is.selfish** **tamarack**

'And so **this** tamarack (that?) is said to be very selfish'

Practicing Patterns

Practice with verbs

Dictionary entries are nice, but need to practice suffixes/prefixes

Select “verb collation” and re-run the analysis

-add unanalyzed verbs back in-

Everything grouped -> minimal teaching units

-g (-k): ‘it’ for B series/conjunct

<nothing>: ‘it’ for A series/independent

-noon: ‘those’ for A series/independent

Also the different “preverbs” (ji-, endso-, bi-, ni-, wii-)

Found these verbs of category VII:

enso-dgwaagig	'VII S:0 Cnj PV/CCNJ PV/dso'
ji-maadseg	'VII S:0 Cnj PV/da'
niibing	'VII S:0 Cnj'
bboong	'VII S:0 Cnj'
nizhshisnoo	'VII S:0 Neg'
bi-gsinaa	'VII S:0 PV/bi'
ni-dgwaagi	'VII S:0 PV/ni'
wii-bi-nchiwad	'VII S:0 PV/wii PV/bi'
mbaasin	'VII S:0'
gwiishkshwewe'aanmad	'VII S:0'
ni-titenoona	'VII S:0PI PV/ni Redup'

Practice with VAI

Verbs where someone is acting have more information

-yan (yin): 'you' (=S:2) for B series/conjunct

g- (gg->k): 'you' for A series/independent

-g: 'you guys' (=S:2PI) for commands

-jig: 'they who' (=S:3PI) for relative clauses

-d (-g after n): 's/he' (=S:3) for B series/conjunct

<nothing>: 's/he' for A series/independent

-waad (yaad): 'they' (=S:3PI) for B series/conjunct

-wag: 'they' for A series/independent

Found these verbs of category VAI:

gaa-zhichgeyin	'VAI S:2 Cnj PV/CCNJ PV/gii'
ji-maaijibiingeiyin	'VAI S:2 Cnj PV/ij PV/maajii'
ka-bnaakwii	'VAI S:2 PV/ga'
ka-gwetaanis	'VAI S:2 PV/ga'
ni-zhaag	'VAI S:2PI Imp PV/ni'
bebaa-ndadbinooshnijig	'VAI S:3 Cnj Pcp (Focus: 3PI) PV/CCNJ'
e-nendang	'VAI S:3 Cnj PV/e'
gii-noondaagzid	'VAI S:3 Cnj PV/gii'
gii-kwetaanzid	'VAI S:3 Cnj PV/gii'
gwetaanzid	'VAI S:3 Cnj'
gii-aabji-gnaaiwi	'VAI S:3 PV/gii PV/aabii'
gii-bi-nshkaadendam	'VAI S:3 PV/gii PV/bi'
bijibiznid	'VAI S:3Obv Cnj'
waa-ni-negoodeyaad	'VAI S:3PI Cnj PV/CCNJ PV/wii PV/ni'
gaa-ni-pizwaad	'VAI S:3PI Cnj PV/gaa PV/ni'
gii-ni-booniyaad	'VAI S:3PI Cnj PV/gii PV/ni'
wii-nda-dbinooshnowaad	'VAI S:3PI Cnj PV/wii PV/nda'
wii-dbinooshnowaad	'VAI S:3PI Cnj PV/wii'
aanmizwag	'VAI S:3PI'

Practice with VTI

Verbs where something is being acted on have a little more information

<i>g-</i> (<i>gg->k</i>): 'you' for A series/independent	Found these verbs of category <u>VTI</u> :	
	ka-naajtoonan	'VTI S:2 O:0PI PV/ga'
<i>-d</i> (<i>-g</i> after <i>n</i>): 'they' for B series/conjunct	enji-naajtood	'VTI S:3 O:0 Cnj PV/CCNJ PV/ij'
<nothing>: 's/he' for A series/independent*	gii-bmosaadang	'VTI S:3 O:0 Cnj PV/gii'
	gii-noondoan	'VTI S:3 O:0 PV/gii'
<i>-n</i> : 'it' (=O:0) for A series/independent*	zaagtoonan	'VTI S:3 O:0PI'
<i>-an</i> : 'those' (=O:0pl) for A series/independent		

*It is a bit more complicated, but good enough for now

Practice with VTA

Verbs where someone is being acted on have a lot more information

-*adwaa*: 'you _ them' (=S:2 O:3PI) for B series*

g_-im: 'you guys _ me' (=S:2PI O:1) for A series*

-*aad*: 's/he _s s.o. else' (=S:3 O:3Obv) for B series*

-*aan*: 's/he' _s s.o. else' for A series*

n_-gosiig: 'they don't _ me' (=S:3PI O:1 Neg) for A series*

-*aawaan*: 'they _ s.o. else' (=S:3PI O:3Obv) for A series*

Found these verbs of category VTA:

<i>gaa-doodwadwaa</i>	'VTA S:2 O:3PI Cnj PV/gaa'
<i>gii-konaashkawdwa</i>	'VTA S:2 O:3PI Cnj PV/gii'
<i>g-bi-kwetaani-wiin'im</i>	'VTA S:2PI O:1 PV/bi PV/gwetaani'
<i>gaa-zhi-noondwaad</i>	'VTA S:3 O:3Obv Cnj PV/gaa PV/zhi'
<i>gii-zhaamaad</i>	'VTA S:3 O:3Obv Cnj PV/gii'
<i>gii-noondwaan</i>	'VTA S:3 O:3Obv'
<i>ndaa-bi-zhaamgosiig</i>	'VTA S:3PI O:1 Neg'
<i>gii-debaabmaawaan</i>	'VTA S:3PI O:3Obv'

*"The truth" is much more complicated, but good enough for now

A Cheat Sheet

Crib Sheet



Once students know enough to get started, a full word list may be helpful

Select “crib sheet” and re-run the analysis

-Still need to add the unanalyzed words back in-

Every variant of every word, in alphabetical order

Word	NOD/OPD Entry	Broad Analysis	Terse Translation	Count	Show/Hide Examples
aanind	aanind	'Adv'	'some'	1	(click for examples)
aanmizwag	aanmizi	'VAI S:3PI'	'distressed'	1	(click for examples)



Wrapping Up

Pause for discussion



These are the main tools I wanted to focus on

There are a couple more tools we can review if nothing to discuss

Also a new conjugator page (showing how the analyzer would spell a word)!

bowersd.github.io/textAnalysis/conjugator.html

What are your thoughts?

Do you see yourself using tools like these?

What changes would make them better?

Do you have more fundamental questions/would you like to go back to something?

Contact



This took a lot of work, and there is so much more to do.

You may find an error, or want a feature, or have something nice to say

Please don't be shy!

My contact information is on the page

Also here: dustin.a.bowers@proton.me

I will also put the slides up on my website: <https://bowersd.github.io>

Final Words



When people say something is a “gold mine”, what they actually have in mind is a treasure trove. A treasure trove is a place where fabulous gems are there for the taking. A gold mine is a dark place where treasure can only be obtained after difficult labor. -James McCawley (paraphrased)

We are not at treasure trove yet

... you probably can't plug in a story right before class and teach it

But hopefully this can be a headlamp and a pick for your time in the mines

Even if you don't need the translations/grammar annotations, exhaustive listing is useful

Miigwech for your time



Would it be useful if?

There were analytical options that targeted nouns?

Verb sort highlighted the verbs?

Spelling suggestions were given?

Sentences were detected automatically?

English translations could be supplied (automatic translations are way in the future)?

Summary statistics were shown (which models analyzed what, how many verbs, how many X, etc)?