

Building a semantic reference grammar (for Kiowa)

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Kiowa Camp outside Fort Sill, OK, in the Museum of the Great Plains Collection

1 Introduction

- In this talk I introduce a semantic reference grammar for Kiowa
- Motivations
- Methods
- Content
- Filling in gaps
- Focus on one bit: Modality
- What I hope for language documentation

2 A semantic reference grammar?

A reference grammar : generalized description of the systematic components of (one version of) a language

- Ideally comprehensive, and accompanied by texts and a dictionary
- Maybe even cultural discussion
- Flourishing of modern reference grammars
- But they actually are NOT comprehensive
- A massive glaring gap : the semantics
- Even when they cover semantic topics, it's missing key parts

Aikhenvald 2014

Lang Sci Press, U of Nebraska, De
Gruyter Mouton

This semantic reference grammar fills in the big gap concerning meaning in Kiowa
By making a document that is of the semantics, by the semantics, for the semantics

3 ...of the semantics

organized along the lines of semantic inquiry

- chapters:
1. Anaphora and reference
 2. Number, animacy, and noun class
 3. Quantification
 4. Mood & Modality
 5. Negation
 6. Attitudes & intensions
 7. Aspect & event structure (no tense)
 8. Location in space & time
 9. Argument structure & thematic roles
 10. Incorporation & compounding
 11. Gradability & degrees
 12. Modification
 13. Discourse grammar
 14. Lexical semantics

4 ...by the semantics

Investigation driven by the concepts important to (formal) semantics

- truth-conditions
- compositionality
- formal background
- pragmatics

Using methodologies from semantics

- context-based elicitation
- follow up with entailed or contradictory phrases
- detangle pragmatic meaning
- profit from voluminous texts & recordings

It helps us find cases where meaning is not reflected by the morphology

5 ...for the semantics

Promote semantic documentation

- especially by non-semanticists
- grounds for a new level of semantic typology
- possible universals

Not too much has been done for semantic typology, except on particular topics, like modality

Nauze 2018, van der Auwera & Ammann 2013, Matthewson 2016

quantification

Bach et al. 1995

Or the focus was on grammaticalization van der Auwera & Plungian 1998

Or the goal was to dig below the meaning bohnemeyer, haspelmath

And even then, most of the data came about from languages those linguists happened to be exploring theoretically.

6 A gap in presupposition

A change of state verb like *stop* triggers a presupposition.

The meaning of the proposition it's in depends on this presupposition being true.

So we can test: Making the proposition true and the presupposition false should be rejected.

And it is.

- (1) $j\acute{a}=$ $s\acute{o}:t\acute{e}+p^h\grave{a}k\grave{a}$. $\#n\acute{e}$ $h\acute{o}n$ $g\grave{a}t=$ $s\acute{o}:t\acute{e}+p'\grave{a}jg\grave{o}$:
 $j\acute{a}=$ $s\acute{o}:t\acute{e}_*+p^h\acute{a}tk\grave{a}$. $n\acute{e}$ $h\acute{o}n$ $g\grave{a}t=$ $s\acute{o}:t\acute{e}_*+p'\acute{a}jg\acute{o}$:
ISGD:3PLS= work+stop.PFV but not ISGA:3PLO= work+fight.NEG
'I stopped working. #But I wasn't working.'

But does a verb like *stop* trigger this presupposition in every language? We have no idea.

What about other presuppositions?

Matthewson 2009

Differences could lead to typology, or tell us about indigenous logics

Similarities could tell us about human cognition in general ...if we knew.

7 A gap in degree

Gradable predicates can be analyzed with degrees on a scale Kennedy 1999, Kennedy & McNally 2005

- (2) What is 'tall'?
 - a. Marta is tall = the degree of Marta's height exceeds some standard
 - b. Marta is very tall = the degree of Marta's height exceeds some standard within a standard
 - c. Marta is five feet tall = the degree of Marta's height exceeds 5 ft
 - d. Marta is taller than Bill = The degree of Marta's height exceeds the degree of Bill's height
 - e. #Marta is completely tall = The degree of Marta's height is the maximal possible

This approach explains why (2d) \nRightarrow (2a), etc.

But! Some languages don't work this way, and don't require degrees Bochnak 2015, Hohaus & Bochnak 2020

What about Kiowa?

8 A gap in degree

Kiowa has some features found in degree languages but lacks others

- (3) What is 'tall'?
- a. Marta is tall = Marta Ø=ét
 - b. Marta is very tall = Marta Ø=kò:dó+èt
 - c. Marta is too tall = Marta Ø=dôj+èt
 - d. Marta is five feet tall = ungrammatical
(Marta is 5 feet)
 - e. Marta is taller than Bill = ungrammatical
(Marta is tall, Bill is not / Bill is tall, Marta is very tall)

But it does require degrees for the semantics (even if (3e) ⇒ (3a)!)

- (4) Tom sâ_n+èl Ø=dó:, né hỏn Ø=ét-gô:
Tom sâ_{n*}+êl Ø=dó: né hỏn Ø=ét-gô:
Tom child+big.NPL_C 3SGS=be but NEG 3SGS=big.NPL-NEG
'Tom is a tall child, but he is not tall.'

NPL: nonplural, C: combining form

9 Why is there this gap?

Generally just a matter of time and focus

Structuralists started from observable morphemes

Americanists' positivism precluded looking too deep at meaning

In order to give a scientifically accurate definition of meaning for every form of a language, we should have to have a scientifically accurate knowledge of everything in the speaker's world.

—Leonard Bloomfield (1933:140)

... but they needed to figure out the new morphemes they discovered

Early generativists hoped to separate grammar from meaning

and in any case there was little to include

In the domain of semantics there are, needless to say, problems of fact and principle that have barely been approached, and there is no reasonably concrete or well-defined "theory of semantic representation" to which one can refer.

—Noam Chomsky (1972:62)

... but Functionalists and observations kept pulling them back ...and they eschewed documentation anyways

10 Formal semantics is new-ish

- Philosophers (of language) looked at semantics to understand logic + knowledge
- Focus on a model that captures the truth-conditions, rather than worry about psychological states

In order to say what a meaning is, we may first ask what a meaning does, and then find something that does that. A meaning for a sentence is something that determines the conditions under which the sentence is true or false.

— David Lewis (1970:22)

- Late 60's/Early 70's, linguists & philosophers started to bring this together with generative syntax
- By using logic and syntax as means rather than ends, these linguists developed formal semantics into the 80s
- By about 2000 it was cemented in linguistic study and began to be applied beyond the 'easy' languages

All together: Not a lot of attention to semantics in the documentation

11 Is there anything?

There have been a few documentations along the lines of what I mean

- In other areas of the grammar of course
- Semantics of Time in Koyukon
- Handbook of Japanese Semantics and Pragmatics
- Semantics for Latin
 - closest to this model
 - but written for Classicists
 - laden with formal analysis
- ...so what about Kiowa?

McDonough 2003, Round 2013, Torrence 2013

Axelrod 1993

Jacobsen & Takubo 2020

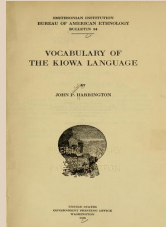
Devine & Stephens 2013

12 The Kiowa language

Kiowa [k^haɪ.o.wə] ([kóʝ.tòː.gjà] | kio | Kiowa-Tanoan | Oklahoma)

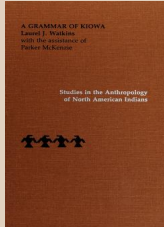
Actually well documented by linguists and community members alike

DICTIONARY



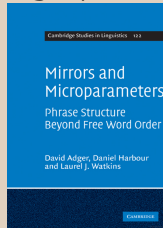
Mooney 1896
Harrington 1928

GRAMMAR



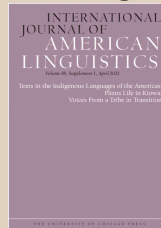
P. McKenzie & Harrington
1948
Watkins 1984

SYNTAX



Harbour 2008
Adger *et al.* 2009

TEXTS



A. McKenzie *et al.* 2022

Gatschet 1882, Wonderly *et al.* 1954

Crowell 1960, Harrington 1910, Hale 1967

Watkins 1990, 1993

Neely & Palmer, Jr. 2009, Neely 2012, 2015, Miller 2018

Harbour 2003, Harbour & McKenzie 2022

McKenzie 2012, 2015, 2018, McKenzie 2022

13 Community documentation

- D. Poolaw 2022 : ongoing dictionary
- L. Toyebo et al. (1962): Kiowa hymns and stories
- P. McKenzie (1940s - 1999) : lexical/grammatical files, letters, and writing
- Kiowa Culture Program (1970s) : historical, cultural, linguistic discussions, in Kiowa
- A. Gonzales : pedagogical materials
- G. Palmer, Jr. : storytelling 2003, 2013
- Kiowa Language and Culture Revitalization Program



P. McKenzie with the author (1988)

14 Brief bit about structure

It is roughly an (SO)V language, with polysynthesis and tone

Every free verb is finite and bears an agreement proclitic, up to three arguments.

- (5) hàgjà sâ:-dò è=jáj+ỳ:m-ỳ
hàgà sâ:*(-dó) è=jáj*+ô:m-ỳ
maybe child_{INV-INV} 3_{INVS}=play+do_{IPFV-IPFV_{VT}}
'Perhaps the children are playing.'

- (6) sần kút é̀nî:= kò̀n
sân kút é̀nî:*= kôn
child book 3_{DUA}:1_{SGD}:3_{PLO}= bring:PFV
'The (two) kids brought me the book.' 'book' is lexically PL

INV = inverse number (plural animates, singular inanimates)

HSY = hearsay evidential

* = tones are set to low for rest of word

X_Y = X's form is morphologically conditioned by Y

15 Focus on modality

Modality is one of the key components of natural language

It has been discussed, notably in Watkins's grammar

Modal suffix

Modal particles whose meanings can be difficult to determine

The modal particles constitute a large group of words whose exact meanings and distributions are sometimes difficult to determine. ... The meanings of several of these modal particles cluster around the notion of probability.

Watkins (1984: 219-220)

But ! Modality is all over the place

We'll find that a lot of classic modal categories are not really expressed directly

16 Even now it's the same

A Grammar of Malanang

Visser 2020

Morpheme-based discussion

- mood-marking affixes/clitics
- free modal markers

good at telling us force, but only hints at bases: “general possibility; possibility or ability”

(74) *jadi ter nan-ere bisa kai nan-ere bisa*
so tea consume-COND can medicine drink-COND can
'So if [you] drink it as tea that's possible or if [you] drink it as medicine
that's possible.' [narr34_0:32]

(75) *an mat gerket ka bisa nan ye ge*
1SG 3SG.OBJ ask 2SG can consume or not
'I asked him: "Can you eat or not?'" [stim6_14:29]

17 Organizing modal meaning

Background: Possible world semantics

Kratzer 2012

Modal meaning split : Force + flavor

Modals are quantifiers over possible worlds: force reflects the quantifier

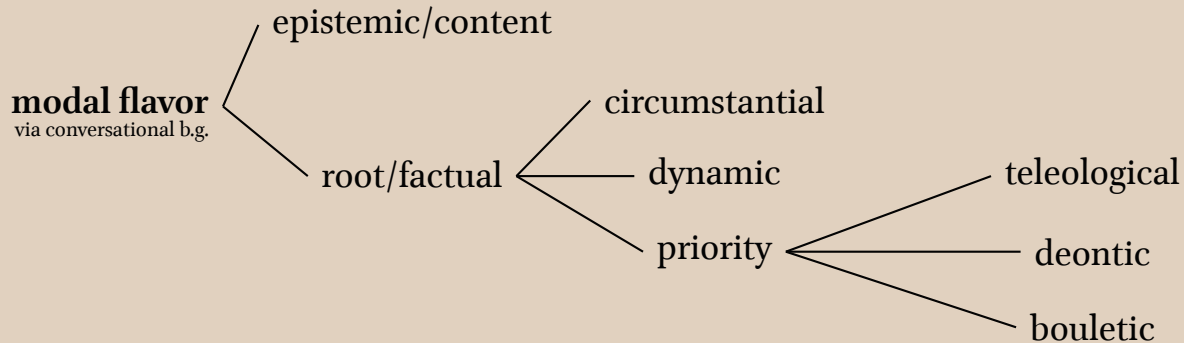
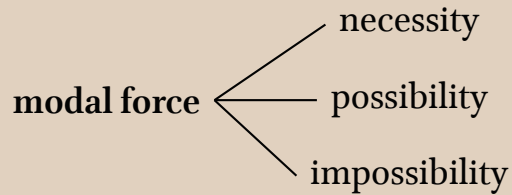
Force is easy to see in English, as it's lexically marked.

- (7) *Carrie can go home.* : possibility
in some relevant possible worlds, Carrie goes home
- (8) *Carrie must go home.* : necessity
in all relevant possible worlds, Carrie goes home
- (9) weaker or stronger (should, ought to, might) : reduce to the best possible worlds

but on what grounds? ability, laws, rules, circumstance, her wants, goals, mine...

These come from conversational backgrounds, often unspoken

18 Categorizing modals



19 Not by form alone

Kiowa modals come in plenty of shapes and sizes

- (10) **hàgjà** â:=bòn-mò
hàgà â:*=bón-mó
maybe 3EMPA:1SGO=see_{IPFV}-IPFV_{VT}

'Maybe they can see me.'

EMP: empathetic plural

- (11) k^háhí:gó: Ø=jí:-jà=dè+pè:-gù
k^háhí:gó: Ø=jí:-jà*=dé+pé:-gú
tomorrow 3SGS=disappear_{IPFV}-IPFV_{VI}=NOM+direction-to
ét=âj-tò:
ét=âj*-tó:
1EXCLA:3PLO=start off.PFV-MOD_{VT}

'Tomorrow we (will) head west.'

- (12) kút bàt= ŝj+kòn
kút bàt= ŝj*+kôn
book 2SGA:3PLO= **in case**+bring.PFV.IMP

'Bring a book just in case.'

20 Epistemic modals

The truth of an epistemic modal depends on the knowledge content of the speaker.

Its use signals an inference by the speaker based on the things they know about the world, to describe the things they do not know.

- (13) p'í:tè àn é=hê: +tè?-tò hétó à=sjón=è: mǝn pãnsé-òtè
 p'í:tè àn é=hê: +tèt-tò hétó à=sjón=è: mǝn pãnsé-òtè
 sister.NAME HAB IsgD:3SGS=story+tell_{IPFV-IPFV_{VT}} still IsgS=small=when.DF **INFER** seven-as many as
 ó-j-hjò: é=sá: +dó:
 ó-j-hò: é=sá: +dó:
 DIST-VAGUE-DEF IsgD:3SGS=pass winter+be

'Great-Grandmother used to tell me this story when I was still little. I **must** have been no more than seven years old about then' (McKenzie et al. 2022: S26)

- (14) pólá:tè tsê: á=p'ój-hjèl=dè mǝn ógò t'ók^hój+k'í: Ø=hól=dè mǝn
 pólá:tè tsê: á=p'ój*-hèl=dé mǝn ógò t'ók^hój+k'í: Ø=hól*=dé mǝn
 Poolant horse 3SGD:3SGS=lose.PFV-HSY=BAS **INFER** SBRD White+male 3SGA:3SGO=kill.PFV=BAS **INFER**
 á=pò: +dô:
 á=pò: +dô:
 3SGA:3SGD:3SGO=bring_c+hold

'Poolant had lost one of his horses and the White man was **probably** keeping it for him.' (McKenzie et al. 2022: S131)

21 Confirming the epistemic meaning

Speakers clearly hold /món/ as epistemic, but how do we tell? Contexts

It is inappropriate to use epistemic modals when the speaker does know the truth.

So given a context where they do know, /món/ should fail, and it does.

Context:

John is a child, and is required to be home at this time of evening, because his parents said he had to be. However, you and I just saw him at Braum's eating an ice cream.

I tell you:

- (15) # John mɔ̃n tɔ̃j Ø=dɔ̃:
 John mɔ̃n tɔ̃j Ø=dɔ̃:
 John INFER house.in 3SGS=be
 'John must be home.'

The context also set up that English *must* might work on a different modal base. However, rejection also rules that out, confirming that /món/ is only epistemic.

22 Epistemics and scope

Epistemic modals are also characterized by wide scope over other operators, like negation

von Fintel & Iatridou 2003

No matter what the word order is, /món/ takes scope above negation

must > not

- (16) hún **mún** ám à=dó:–mô:
hón **món** ám à=dó:–mô:
NEG **INFER** you 1SGS=be–NEG

‘I’m not you, I guess.’ (McKenzie et al. 2022: S143)

- (17) **mún** hún gò=bó:–mô:
món hón gò=bó:–mô:
INFER NEG 3SGA:2SGO=see–NEG

‘I don’t think he saw you.’

23 The force of /món/

It has an epistemic base, but what of its force?

Its force is necessity... but not always the strongest.

- (18) Al **món** tøj Ø=dój, né hàgjà hétó gjà=sój:tè+tò:
Al **món** tøj Ø=dój: né hàgà hétó gà=sój:tè*+tó:
Al INFER house.in 3SGS=be but maybe still 3SGA:3PLO=work+act(IPFV)
'Al {must be/is probably} at home, but maybe he's still at work.'

- (19) tsê: pàhí: Ø=ál+dój, **món** há:têl Ø=á:l-é:
tsê: pàhí: Ø=ál+dój: **món** há:têl Ø=ál-é:
horse clearly 3SGS=move+be **INFER** person:INDEF 3SGA:3SGO=move-PFV
'Clearly the horse has moved; maybe somebody chased it.'

24 Correcting the literature

The incorporated stem /hén/ is ‘dubitative’ in Watkins 1984

However, it actually indicates that the speaker believes the proposition (epistemic or doxastic base)

- (20) hún gǎ=hén+sò:tè+p’áj-gò:
hón gá=hén_{*}+só:té+p’áj-gô:
NEG 3SGA:3PLO=**possibly**+work+fight(PFV)-NEG
‘I don’t think he has a job.’ / ‘I doubt he’s working.’

- (21) Ø=p^hǎ:-hèl gò Ø=tò:n-ê, “pê: mǎ:
Ø=p^hǎ:_{*}-hèl gò Ø=tón-ê, “pê: mǎ:
3SGS=stop.PFV-HSY and.SA 3SGS=say.IPFV-HSY turkey somewhat
Ø=hén+dò:!”
Ø=hén_{*}+dó:!”
3SGS=**possibly**+be
‘He stopped and said, “I think that was a turkey!”

(Toyobo 1962: 10)

25 Correcting the literature

It turns out, /hén/ usually accompanied in naturalistic examples by /mó:/ ‘somewhat’, which weakens the certainty being expressed.

- (22) tsô: mǝ: àn bá=**hén**+tǝ:-gǝ:
tsô: mó: àn bá=**hén**_{*}+tǝ:-gǝ:
thusly somewhat HAB 3NSGS=**possibly**+speak-IPFV_{VI}
‘I believe that is the way it is rendered’

Letter to L. Watkins, 3-17-79

I somewhat believe that p → dubitative

The observations were all correct; the characterization was not

26 Rounding out the list

force	Kiowa	English	note
necessity	/pàhí:/	'clearly, definitely'	incompatible with MOD
	/bártsòl/	'clearly, definitely'	incompatible with MOD
	/món/	'INFER'	incompatible with HSY
possibility	/kòttè/	'likely, liable to'	incompatible with MOD
	/hájàttò/	'maybe, perhaps'	requires MOD
	/hàgà/	'maybe'	also means 'or'
impossibility	/hén/+	'possibly'	must be incorporated
	/bèthêndè/	'unlikely, doubtful'	requires MOD, incompatible with NEG
	/ádàttè/	'unlikely, doubtful'	only found in word-lists

necessity weak necessity weak possibility possibility impossibility

← *stronger* ————— *weaker* →

all all the best some of the best some none

27 Epistemic unlikelyhood or impossibility

The adverb /bèthêndè/ ‘unlikely, doubtful’ indicates epistemic unlikelyhood or impossibility that things will turn out a certain way.

Harrington (1928) mistakenly translates this as ‘never’.

- (23) tó: **bè:t^hêndè** Ø=ǰm-dé-t’ò:
tó: **bèthêndè** Ø=ǰm-dé_{*}-t’ó:
house **unlikely** 3SGS=make_{DETR}-DETR.PFV-MOD_{vi}

‘The house will never be finished.’

‘I doubt the house will be finished.’

(Harrington 1928: 42)

- (24) **bè:t^hêndè** kú:tò+hjòj bét=bó:-tó:
bèthêndè kú:tò_{*}+hjòj bét=bó:-tó:
unlikely bird+genuine.INV IINCLÁ:3INVO=see.PFV-MOD_{VT}

‘I doubt we’ll see any eagles.’ / ‘It was unlikely we would see any eagles.’

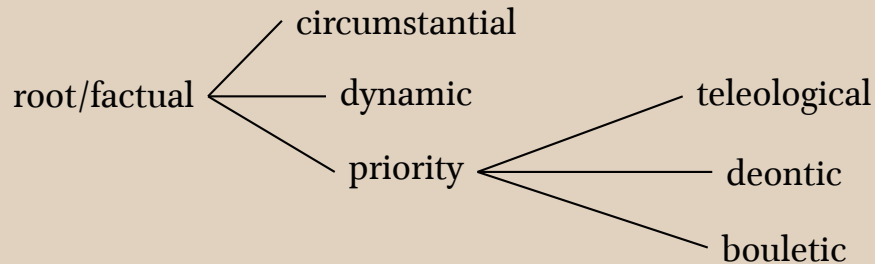
/bèthêndè/ is limited to looking forward. For the past you have to negate /món/, which always takes scope above negation (16)

28 Root modality

Root modality: alternate results of how an event might turn out given facts that constrain or permit what happens.

Tom has to go home indicates a strong necessity or obligation that Tom should go

Tom can go home simply indicates a possibility available to him



29 Inferring root modality

Kiowa root modals are generally indirect.

No 'have to' or 'should' : Usually either the imperative is used or the MODal inflection

MOD varies for transitivity

(25) Context: We are in the Elders Center and they are about to close it.

a. Prompt: 'We have to leave now.'

é:–h̀̀:–g̀̀: (dá) bà=kó+k^hì:
é:–h̀̀:–g̀̀́: (dá) bà=kó_{*}+k^hí:
PROX–DEF–during (ABS.NEC) IINCLS=right now+exit.PFV.IMP

'Let's leave right now.'

b. Prompt: 'We should leave now.'

é:–h̀̀:–g̀̀: bà=kó+k^hì:–t'̀̀:
é:–h̀̀:–g̀̀́: bà=kó_{*}+k^hí:–t'̀̀́:
PROX–DEF–during IINCLS=right now+exit.PFV–MOD_{VT}

'We should leave right now.'

30 Capability

No 'can' either, at least not in the English sense of dynamic ability

(26) Prompt: Elena can dance well.

Habitual (entailing she can)

- a. Elena àn t'á:gjà-j èm= gún-mò
Elena àn t'á:gà-j èm= gún-mò
Elena HAB good-ADV 3SGA:REFLO= dance-IPFV_{VT}
'Elena dances well.'

Knowing (a form of ability)

- b. Elena án= kún+hàj-gjà+dò:
Elena án= kún_{*}+háj-gá+dó:
Elena 3SGD:3PLS= dance_C+inform-DETR_C+be
'Elena knows how to dance.'

31 Capability

Being skilled (better than mere ability)

- (27) Elena àn=kún+mò:gò
Elena án=kún.*+mó:gó
Elena 3SGD:3PLS=dance_C+be skilled
'Elena is a good dancer.'

Detransitive ('manage to' reading, implicates ability)

- (28) Prompt: 'Elena was able to clean the floor.'
Elena tò:+dòm àn á=p^hí:lǐ-à
Elena tò:+dòm àn á=p^híl-à
Elena house_C+bottom:VAGUE HAB 3SGD:3SGS=wipe.DETR-IPFV_{VI}
'Elena managed to clean the floor/got the floor cleaned.'

32 Untested ability

In many languages, ability modals can be true even if the event has never happened.

(Unboxing a juicer) *This machine can press a grapefruit!*

Kiowa ability expressions only apply if the event has taken place at least once.

If it hasn't, you must predict with modal inflection.

(29) Prompt: (Elena just grabbed a broom) 'Elena can clean the floor.'

Elena tò:+dòm á=p^híʔtè-t'ò:

Elena tò:+dòm á=p^hítte*_{*}-t'ó:

Elena house_C+bottom:VAGUE 3SGD:3SGS=wipe.DETR.PFV-MOD_{VI}

'Elena will get the floor cleaned.'

33 Eliciting the untranslated

Speakers can get flustered if they can't provide 'simple' translations like these

Can be thorny in a context of an endangered language

Recordings, texts, and linguists' notebooks show that there never were such morphemes

Even when translated by L1 Kiowa speakers into English

- (30) nḡ: hóldé **bá=mḡ:** gò k'óp+pé:-gù
n'ó: hóldé **bá*=m'ó:** gò k'óp+pé:*-gú
1 soon **IINCLA:3SGO=move camp.PFV.IMP** and.SA mountain+direction-to
bà=hó:+bà: bôt mậ:jjí: mḡ:
bà=hó:.*+bá: bôt mậ:jjí: m'ó:
IINCLS=vehicle+go.PFV.IMP because woman somewhat
é=mḡ'jbe
é=m'ó'jbe
1sGD:3sGS=be in difficulty

'We need to decamp right away and head to the mountains, because my wife is having some difficulties [soon to give birth].'

McKenzie et al. (2022: S42-43)

34 Root possibility

Some kinds of root possibility are lexically expressed.

The bound stem /t^hénts'ò/ 'permitted' expresses deontic or bouletic possibility:

(31)

Context:

You have family over, but don't want the grandkids running around over by the windows. You show their parents where you are letting them play.

Prompt: 'The children can play over there.'

ʒ:–gò: sâ:–dò gǎ=jáj+tènts'ò+dò:
ʒ:–gò: sâ:–dó gá=jáj*+tènts'ò+dó:
there–PRS child_{INV}–INV 3EMPD:3PLS=play+allow+be

Lit: 'it is play+permitted to the children'

PRS=presenting

35 Showing root, not epistemic

Showing /t^hénts'ò/ is not epistemic: In a context where

- the subject is known not to be doing an action
- yet is permitted to do so
- prediction:
 - a deontic possibility meaning will be accepted
 - an epistemic one will not be accepted.

With /t^hénts'ò/ such contexts are accepted.

- (32) ḥṇ èm=gú:n-̂: n̄é ́n̄=t^hénts'ò+dò:
hón èm=gún-̂: né án=t^hénts'ò_*+dó:
NEG 3SGA:REFLO=dance-NEG but 3SGD:3PLS=**permit+be**
'He is not dancing, but he is allowed to.'
(cp. epistemic #*He isn't dancing, but he might be.*)

36 Showing root, not epistemic

Another piece of evidence that /t^hénts'ò/ is not epistemic: it takes narrow scope.

Here it scopes below negation, and cannot scope above it.

not > be allowed

- (33) h_çn y_ç=k_çn+t^hénts'ò+d_ç:–m_ç:
h_çn y_ç=k_çn_{*}+t^hénts'ò+d_ç:–m_ç:
NEG 1SGD:3PLS=dance_C+permit+be–NEG

'I am not allowed to dance.'

#'I am allowed not to dance./I don't have to dance but I can'

37 Caused possibility

A number of lexical items in languages indicate an event that makes some other possibility true. Combining /t^hénts'ò/ with the causative /óm/ 'make' gives this sense with permission or allowance.

- (34) ðnk'î: há-bé gjà=dó:=è: kój-gú gò kjàj-gù gò
 ðnk'î: há-bé gà=dó:=è: kój-gú gò kâj*-gú gò
 in past INDEF-SPRD 3PLS=be=when:DF Kiowa-INV and Comanche-INV and
 t^hògûj gjà= k'ù:+t^hénts'ò+ò:m-è: t'ók^hôj
 t^hògûj gâ*= k'ú:+t^hénts'ò+óm*-é: t'ók^hôj
 Plains.Apache\INV 3EMPA:3EMPD:3PLO= camp+permit+make-PFV White\INV
 "It was during a former time when Kiowas and Comanches and Apaches (3EMP)
 permitted the White people (3EMP) to settle here (3PL)." McKenzie et al. (2022: S165)

.: non-linear morpheme
 df: different subject
 sprd: spread about

38 Caused possibility

/dó:pé:/ ‘ask, order’ is sometimes used to indicate granting permission.

- (35) Ø=tò:n-ê: t^hó:+ólk^hóy g^yà=dó:=dè kól
 Ø=tò:n-ê: t^hó:+ólk^hóy g^aà=dó:*=dé kól
 3SGS=say.IPFV-HSY_{IPFV} water+wicked 1SGA:3SGO=have=BAS some.IRR
 à=t^hó: n~ ègó hèg~
 à=t^hó: nò hègó hègó
 2SGA:3SGO=drink.PFV.IMP and.DF then then
 êm=t^hép+dò:pè-tò:
 èm=t^hép_{*}+dó:pé-tó:
 1SGA:2SO=exit_C+**permit.PFV**-MOD_{VT}

‘He said, “Drink some of this alcohol I’ve got, and then I’ll let you out.” (McKenzie et al. 2022: S226–227)

Consultants affirm the ‘let’ meaning, and in elicitation, they say that this sense is fine out of the blue for a meaning of /dó:pé:/.

39 Permissive

Kiowa has a bound stem /kón/ that Watkins labels as ‘permissive’.

- (36) tségù:-dò è=**kón**+hè:bà
tségù:.*-dó è=**kón**.*+hé:bà
dog_{INV}-INV 3INVS=**let**+enter.PFV
‘Let the dogs in.’

It does not affect the arg. struc.

- (37) è=**kón**+kì:+pì+hè:bà
è=**kón**.*+kí:+pí:+hé:bà
3INVS=**let**+meat+eat+enter.PFV
‘Let them come in to eat meat.’

We can re-categorize this: /kón/+ indicates a caused bouletic possibility on the part of the *addressee* rather than the speaker. The addressee is bid to allow the event to happen, or at least should not stand in the way when they could.

40 Adding an implicature

This marker's usage can also be translated with a simple possibility modal, but that's via implicature.

- (38) á=**kón**+k'òmbàà?kʔà gò
á=**kón***+k'òmbáátkà gò
3EMPS=**let**+imitate:PFV and:SA
gʔà=**kón**+kòj+kùt+hàj-gjà
gà=**kón***+kój+kút+háj-gá
3EMPD:3PLS=**let**+Kiowa+write+inform-DETR.PFV
'so they might be motivated to do likewise and learn Kiowa writing'
Lit. 'and let them do the same and learn to write Kiowa.' McKenzie et al. (2022: S181)

Also: /kón/ only takes scope over its verb's event, not both conjuncts

41 Root impossibility

Eliciting ‘can’ is indirect, but ‘cannot’ is no problem! Negating possibility modals is one route, but there are lexical expressions of impossibility that vary based on flavor.

/mòó:/ ‘be unable (due to circumstance)’

(39) *Circumstantial inability*

tsê: dôj+tón=k’òt

án=kól+mòó:d-èp

tsê: dôj_{*}+tón=k’òt

án=kól_{*}+mòó:d-èp

horse too much+fat=as.UNEXP.SA 3SGD:3PLS=turn around+**be unable-IPFV**

‘The horse is too fat and it can’t turn around’

UNEXP: unexpected due to world context

42 Discerning distinct flavors

Context:

I know how to cook bót, but I don't have the ingredients.

- (40) bót já= pí:+mòó:dèp
bót já= pí:+mòó:dèp
bót lSGD:3PLS= cook+be unable.IPFV
'I can't make bót.'

Context:

I was asked to make bót, but I never learned how.

- (41) a. #bót já=pí:+mòó:dèp
b. hún bót já= pí+háj-g-ô:
hón bót já= pí+háj-g-ô:
NEG bót lSGD:3PLS= cook+inform-DETR-NEG
'I can't make bót.' (lit. 'I didn't learn how to make bót')

43 Discerning distinct flavors

Context:

I wanted to make bót, but I was told not to.

- (42) a. #bót já=pí:+mòó:dèp
b. bót yá=pí:+îl+dò:
bót yá=pí:+îl_{*}+dó:
bót lSGD:3PLS=cook+forbid+be
'I can't make bót.' (Lit. 'cooking bot is forbidden to me')

Context:

I tried to make bót, but I didn't succeed.

- (43) a. #bót já=pí:+mòó:
b. bót yá=pí:+jóʔk'àj
bót yá=pí:+jótkàj
bót lSGD:3PLS=cook+blunder.PFV
'I couldn't make bót/I failed to make bót.'

44 Priority modals

Priority modals involve some ordered set of someone's priorities

bouletic	speaker's desires (listener's in questions)
deontic	general mores, rules, and regulations
teleological	goals, usually stated in context

They can vary in force (necessity, possibility)

In Kiowa, most of them are indirect

45 Explicit Necessity Modal

The only observed deontic expression is /mâ:sòt/ 'supposed to', which is rare. This adverb is used without modal inflection.

It indicates moderate deontic necessity:

In all the best worlds where the rules/mores are respected, the event happens.

- (44) **mâ:sòt** óy-gú é:-hò-dè àn
mâ:sòt óy-gú é:-hò*-dé àn
supposed to be many-INV PROX-DEF-BAS HAB
g^yá=k'í:kò:m-è:
gá_{*}=k'í:kò:m-è:
3EMPA:3PLO=decide.IPFV-HSY_{IPFV}

'The majority is supposed to make these decisions' (McKenzie et al. 2022: S189)

46 Imperative ‘necessity’ modals

Most priority necessity is expressed by command.

In English, necessity modals are often used to indirectly give commands.

In Kiowa it's the converse: commands are used to indirectly express necessity.

- (45) kój+tò:-g^yà é=tsá:lĵ-î:-tò:=dè
kój_{*}+tò:-gá é=tsál-î_{*}-tò:=dé
Kiowa+*speak*-BAS 2SGA:1SGO=*ask*_{IPFV}-IPFV-MOD_{VT}=BAS

bà? = mò:kĵá+gùl

bàt = mò:ká_{*}+gùl

2SGA:3PLO=*in preparation*+**write.PFV.IMP**

‘You, 2s, must write up beforehand Kiowa words that you will be asking me about.’

(P. McKenzie Box 21 Folder 1 Pg 81)

47 Blast through

Habituals are often used for indirect necessities (e.g. 'Men take care of their loved ones')

The verb /óndó:/ 'want' is sometimes used to express needs

Modal inflection can be used to indicate necessity

Bouletic necessity (i.e. optative) particle /jàl/ 'hopefully'

Caused obligation can be expressed with –/hóp/ 'tell to'

(46) Ø=kún+à:-**hòp**
Ø=kún_{*}+à:-**hóp**

3SGS=dance_C+come.PFV–tell to

'Tell him/her to come dance.' / 'He/she should come dance'

48 Prediction: Future ‘tense’ or WOLL

Predictions generally involve the modal inflection

- (47) dó:+k^hi: à=ôj+pò:+tsàn-**t’ò:**
dó:.*+k^hi: à=ôj.*+pó:+tsán-**t’ó:**
holy+day 1SGS=again+see_C+arrive.PFV–MOD_{VT}
‘I will/should/might come see you again on Sunday.’

However, like English *will*, the modal inflection is not a tense marker, but instead the root necessity WOLL:

In all the relevant possible outcomes given how things are going, the proposition will become true.

49 Variable force

Unlike *will*, MOD varies in force.

- (48) hájáj?tò dó:+k^hi: à=ôj+pò:+tsán-**t'ò:**
hájáttò dó:.*+k^hi: à=ôj*+pò:+tsán-**t'ó:**
maybe holy+day 1SGS=again+see_C+arrive.PFV-MOD_{VT}
'I might come see you again on Sunday.'

- (49) èm=tsán-t'ò:=nò **dáàl** èm=t^háj+hì:-tò:
è m=tsán* -t'ó:=nò **dáàl** è m=t^háj*+hí:-tó:
2SGS=arrive.PFV-MOD_{VT}=if.DF **WK.NEC** 1SGA:2SGO=accompany+take.PFV-MOD_{VT}
'If you come then I WILL go with you'

50 The futurate

Using imperfective for fairly certain future events

Copley 2008

- (50) dɔː+kʰiː à=ɔ̂j+pòː+**tsàŋ-mà**
dɔː_{*}+kʰiː à=ɔ̂j_{*}+póː+**tsán-mà**
holy+day 1SGS=again+see_C+**arrive**_{IPFV-IPFV_{VI}}
'I'm coming to see you again on Sunday.'

If an event is not planned or expected to come about, the imperfective is not allowed.

Context:

Melody has come by to visit you sometimes on Sundays, and she might this weekend, but you have yet to make any plans.

- (51) #Melody dɔː+kʰiː à=ɔ̂j+pòː+**tsàŋ-mà**
Melody dɔː_{*}+kʰiː à=ɔ̂j_{*}+póː+**tsán-mà**
Melody holy+day 1SGS=again+see_C+**arrive**_{IPFV-IPFV_{VI}}
'Melody is coming to see me again on Sunday.'

51 Domain sizing

Modals being quantifiers, they become weaker or stronger based on the size of their quantifier domain.

With root modals, Kiowa employs particles that indicate the size.

particle	force	gloss	to-do	circumstances
/dá/	absolute necessity	ABS.NEC	obligation, must	under all
/dáàl/	strong necessity	STR.NEC	advice, should	under the best
/hét/	weak necessity	WK.NEC	suggestion, invitation	if you like
/pòj/	negative necessity	NEG.NEC	prohibition	under none

- (52) k^{hy}áhí:gó: **dá** èm=tsán
k^háhí:gó: **dá** èm=tsán
tomorrow **ABS.NEC** 2SGS=arrive.PFV.IMP
'You have to come tomorrow.'

(PM Archives, Box 21 Fol 1 Pg 17)

52 Domain sizers

These are often used with imperatives, but easily also with MOD (the prohibitive must be).

- (53) **dá/dáàl/hét** kí: bàʔ=kòṅ
dá/dáàl/hét kí: bàt=kòṅ
ABS/STR/WK.NEC meat 2SGA:3PLO=bring.PFV.IMP
- a. /dá/ : you have to bring meat
 - b. /dáàl/ : you should bring meat
 - c. /hét/ : why don't you bring meat
- (54) t'ólò:+t^hò: g^yà=kòṅ-tò: nḡ **dá/dáàl/hét/pòj** kí:
t'ólò:~+t^hò: g^a=kòṅ~*~tò: nḡ **dá/dáàl/hét/pòj** kí:
sweet+drink 1SGA:3SGO=bring.PFV-MOD_{VT} and.DF **ABS/STR/WK/NEG.NEC** meat
bàʔ=kòṅ-tò:
bàt=kòṅ~*~tò:
2SGA:3PLO=bring.PFV-MOD_{VT}
'I will bring the soda, and...
- a. /dá/ : you certainly *will* bring the meat
 - b. /dáàl/ : you *will* bring the meat
 - c. /hét/ : why don't you bring the meat
 - d. /pòj/ : you, don't bring the meat / you will *not* bring the meat

53 Summary

A very detailed documentation of the modal meanings of Kiowa

Organized around the meaning

Still room for unheralded, never-before-seen types of meaning

Theory-driven, not theory-bound

New ways of expressing the parts of modals

54 Other aspects of modality

- Conditionals (MOD + conjunctive clitic)
- Counterfactuals (add /ʒgəl/)
- Biscuit conditionals (because clause)

Attitude predicates (for another chapter)

Intensional noun interpretations (for another chapter)

55 Sum up

The rest of the grammar works like that

Fills in a huge amount of gap that even 'comprehensive' grammars miss

So far only semanticists have really looked

Suggests: Non-semanticists could use a guide

I hope this reference grammar will serve as one

Reference grammars will have a beautiful 'semantics' chapter

Semanticists can do one better than me

References

- Adger, David, Daniel Harbour & Laurel Watkins. 2009. Mirrors and Microparameters: Phrase structure beyond free word order. Cambridge Univ. Press.
- Aikhenvald, Alexandra. 2014. The art of grammar: A practical guide. Oxford: Oxford University Press.
- van der Auwera, Johan & Andreas Ammann. 2013. Overlap between situational and epistemic modal marking. In Matthew S. Dryer & Martin Haspelmath (eds.), The world atlas of language structures online, Leipzig: Max Planck Institute for Evolutionary Anthropology. <https://wals.info/chapter/76>.
- van der Auwera, Johan & Vladimir Plungian. 1998. Modality's semantic map. Linguistic Typology 2. 79–124.
- Axelrod, Melissa. 1993. The semantics of time: Aspectual categorization in Koyukon Athabaskan. Lincoln, NE: U of Nebraska Press.
- Bach, Emmon, Eloise Jelinek, Angelika Kratzer & Barbara H. Partee (eds.). 1995. Quantification in natural languages. Dordrecht, The Netherlands: Kluwer.
- Bloomfield, Leonard. 1933. Language. Chicago, IL: University of Chicago Press.
- Bochnak, M. Ryan. 2015. The degree semantics parameter and cross-linguistic variation. Semantics and Pragmatics 8(6). 1–48. doi:10.3765/sp.8.6.
- Chomsky, Noam. 1972. Studies on semantics in generative grammar. The Hague, The Netherlands: Mouton.
- Copley, Bridget. 2008. The plan's the thing: Deconstructing futurate meanings. Linguistic Inquiry 39(2). 261–274.
- Crowell, Edith. 1960. The Kiowa language: A grammatical study. Philadelphia, PA: University of Pennsylvania dissertation.
- Devine, A. M. & Laurence D. Stephens. 2013. Semantics for Latin: An introduction. Oxford; New York: Oxford University Press.

- von Fintel, Kai & Sabine Iatridou. 2003. Epistemic containment. Linguistic Inquiry 34(2). 173–198.
- Gatschet, Albert A. 1882. Phonetics of the Kayowē Language. In Proceedings of the A.A.A.S., Salem, Mass.
- Hale, Kenneth L. 1967. Toward a reconstruction of Kiowa-Tanoan phonology. IJAL 33(2). 112–120.
- Harbour, Daniel. 2003. The Kiowa case for feature insertion. Natural Language and Linguistic Theory 21. 543–578.
- Harbour, Daniel. 2008. Morphosemantic number: From Kiowa noun classes to UG number features. Dordrecht: Springer.
- Harbour, Daniel & Andrew McKenzie. 2022. Grammatical simplicity: Number in Kiowa. In Paolo Acquaviva & Michael Daniel (eds.), Number in the world's languages, 693–728. Berlin/Boston: De Gruyter Mouton.
- Harrington, John Peabody. 1910. On phonetic and lexical resemblances between Kiowa and Tanoan. American Anthropologist 12. 119–123.
- Harrington, John Peabody. 1928. Vocabulary of the Kiowa Language. Washington, D.C.: Bureau of American Ethnology.
- Hohaus, Vera & M. Ryan Bochnak. 2020. The grammar of degree: Gradability across languages. Annual Review of Linguistics 6. 235–259. doi:10.1146/annurev-linguistics-011718-012009.
- Jacobsen, Wesley M. & Yukinori Takubo (eds.). 2020. Handbook of Japanese semantics and pragmatics, vol. 5 Handbooks of Japanese Language and Linguistics [HJLL]. Berlin/Boston: De Gruyter Mouton.
- Kennedy, Christopher. 1999. Projecting the adjective: The syntax and semantics of gradability and comparison. New York: Garland.
- Kennedy, Christopher & Louise McNally. 2005. Scale structure and the semantic typology of gradable predicates. Language 81(2). 345–381.
- Kratzer, Angelika. 2012. Modals and conditionals. Oxford: Oxford U. Press.

- Lewis, David. 1970. General semantics. Synthese 22(1). 18–67.
- Matthewson, Lisa. 2009. Pronouns, presuppositions, and semantic variation. In Tova Friedman & Satoshi Ito (eds.), Proceedings from SALT 18, 527–550.
- Matthewson, Lisa. 2016. Modality. In Maria Aloni & Paul Dekker (eds.), The Cambridge handbook of formal semantics, 525–559. Cambridge: Cambridge University Press.
- McDonough, Joyce. 2003. The Navajo sound system. Dordrecht, The Netherlands: Kluwer.
- McKenzie, Andrew. 2012. The role of contextual restriction in reference-tracking. Amherst, Mass.: University of Massachusetts Amherst dissertation.
- McKenzie, Andrew. 2015. Deriving topic effects in Kiowa with semantics and pragmatics. In M. Ryan Bochnak & Lisa Matthewson (eds.), Methodologies in Semantic Fieldwork, Oxford U. Press.
- McKenzie, Andrew. 2018. Kiowa verb incorporation and types of mediating relations. In Alex Goebel & Kimberly Johnson (eds.), Proceedings of the 10th conference on the Semantics of Underrepresented Languages of the Americas (SULA 10), Amherst, Mass.: GLSA.
- McKenzie, Andrew. 2022. Mediating functions and the semantics of noun incorporation. Natural Language and Linguistic Theory 40. 505–540. doi:10.1007/s11049-021-09511-4.
- McKenzie, Andrew, Daniel Harbour & Laurel J. Watkins. 2022. Plains life in Kiowa: Stories from a tribe in transition Texts in the Indigenous Languages of the Americas. Chicago, IL: University of Chicago Press. International Journal of American Linguistics 88(S1).
- McKenzie, Parker. n.d. Parker McKenzie collection. Oklahoma Historical Society Research Division.
- McKenzie, Parker & John P. Harrington. 1948. Popular account of the Kiowa Indian language. Santa Fe, New Mexico: School of American Research.

- Miller, Taylor Lampton. 2018. The phonology-syntax interface and polysynthesis: a study of Kiowa and Saulteaux Ojibwe: University of Delaware dissertation.
- Mooney, James. 1896. Calendar History of the Kiowa Indians 17th Annual Report of the Bureau of American Ethnology. Washington, D.C.: Smithsonian Institution.
- Nauze, Nicolas. 2018. Modality in typological perspective. Amsterdam, the Netherlands: University of Amsterdam dissertation.
- Neely, Amber. 2012. Tales of tradition and stories of syncretism in Kiowa language revitalization. In Paul V. Kroskrity (ed.), Telling stories in the face of danger: Language renewal in native american communities, Norman, OK: University of Oklahoma Press.
- Neely, Amber. 2015. Speaking Kiowa today: Continuity and change through the generations. Norman, OK: University of Oklahoma dissertation.
- Neely, Amber & Gus Palmer, Jr. 2009. Which way is the Kiowa way? In Paul V. Kroskrity & Margaret C. Field (eds.), Native American language ideologies: Beliefs, practices, and struggles in Indian country, 271–298. U of Arizona Press.
- Palmer, Jr., Gus. 2003. Telling Stories the Kiowa Way. Tucson, Arizona: U of Arizona Press.
- Palmer, Jr., Gus Pàntháidè. 2013. How Thébòl got his name. In David L. Kozak (ed.), Inside dazzling mountains: Southwest Native verbal arts, 411–417. Lincoln, NE: University of Nebraska Press.
- Poolaw, Dane. 2022. *ḡáuiḡòḡ:ḡyà-t'áukáuiḡòḡ:ḡyá: / Kiowa-English Student Glossary*. University of Oklahoma.
- Round, Erich. 2013. Kayardild morphology and syntax. Oxford: Oxford University Press.
- Torrence, Harold. 2013. The clause structure of Wolof: Insights into the left periphery (Linguistik Aktuell 198). Amsterdam/Philadelphia: John Benjamins.
- Toyebo, Louis. 1962. Kiowa bedtime stories. Dallas, TX: SIL International.
- Visser, Eline. 2020. A Grammar of Malanang. Berlin: Language Science Press.

Watkins, Laurel. 1984. A Grammar of Kiowa. Lincoln, NE: U of Nebraska Press.

Watkins, Laurel. 1993. The Discourse Function of Kiowa Switch-Reference. IJAL 59(2). 137–164.

Watkins, Laurel J. 1990. Noun phrase versus zero in Kiowa discourse. IJAL 56(3). 410–426.

Wonderly, William, Lornia Gibson & Paul Kirk. 1954. Number in Kiowa: Nouns, demonstratives, and adjectives. IJAL 20. 1–7.