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
I 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

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
...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

6. Attitudes & intentions
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

quantification

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.

\[(1) \quad \text{żý} = \text{só:té} + \text{pʰàʔkʲà}. \quad \#\text{né} \quad \text{hón gài} = \text{só:té} + \text{p’ájgô}: \\
\text{żý} = \text{só:té} + \text{pʰátkʲà}. \quad \text{né} \quad \text{hón gài} = \text{só:té} + \text{p’ájgô}: \\
\text{1SGD:3PLS} = \text{work+stop.PFV} \quad \text{but not 1SGA:3PLO} = \text{work+fight.NEG} \]

‘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?
Differences could lead to typology, or tell us about indigenous logics
Similarities could tell us about human cognition in general ...if we knew.

Matthewson 2009
Gradable predicates can be analyzed with degrees on a scale. Gradable predicates can be analyzed with degrees on a scale

Kennedy 1999, Kennedy & McNally 2005

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) $\not\equiv (2a)$, 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 ∅=ét
   b. Marta is very tall = Marta ∅=kòːdó+èt
   c. Marta is too tall = Marta ∅=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 sán+èl ∅=dó:, né hón ∅=ét–gô:
    Tom sân.+èl ∅=dó: né hón ∅=ét–gô:
    Tom child+big,NPLc 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 then 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
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?
12 The Kiowa language

Kiowa [kʰai.o.wə] ( [kó:j.tɔ:.ɡjà] | 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
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
- 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) hàgià sâ:-dô  è=jáj+ɔːm–ɔ
hàgâ sâ:.–dô  è=jáj+.ɔm–ɔ
maybe child_{INV–INV} 3_{INV}s=play+do_{IPFV–IPFVVT}
‘Perhaps the children are playing.’

(6) sâń kút ěnîː=  kɔn
sâń kút ěnûː=  kɔn
child book 3_{DU}:3_{SG}: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.*


But! Modality is all over the place
We’ll find that a lot of classic modal categories are not really expressed directly
Even now it’s the same

A Grammar of Malanang

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.’

(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?”’
Organizing modal meaning

Background: Possible world semantics

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
Categorizing modals

modal force
  - necessity
  - possibility
  - impossibility

modal flavor
  via conversational b.g.
  - epistemic/content
    - circumstantial
    - root/factual
      - dynamic
      - priority
        - teleological
        - deontic
        - bouletic
19 Not by form alone

Kiowa modals come in plenty of shapes and sizes

(10) hàgjà  âː=bòn–mò
hàgà  âː*=bón–mó
maybe 3EMPA:1SGO=seeIPFV–IPFVVT
‘Maybe they can see me.’

(11) kʰjáhįːgό:  ∅=jíː–jà=dé+pèː–gù
kʰáhįːgό:  ∅=jíː–jà*=dé+péː–gú
tomorrow 3SGS=disappearIPFV–IPFVVI=NOM+direction–to
ét=âj–tò:
et=âj*–tò:
1EXCLA:3PLO=start off.PFV–MODVT
‘Tomorrow we (will) head west.’

(12) kút  bât=  sɔ̨̂j+kɔ̨̀n
kút  bât=  sɔ̨̂j*+kɔ̂n
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’íːtè ãn ĝ=héː+tèʔ–tò hétò â=sjôn=èː món pânsé–ôtè

sister.NAME HAB 1SGD:3SGS=story+tellIPFV–IPFVVT still 1SGS=small=when.DF INFER seven–as many as

‘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) póląːtè tsę̂ː á=p’ɔ́j–hjèl=dè món ţ’õkʰɔ́j+k’íː 0=hôl=dè món

Poolant horse 3SGD:3SGS=lose.PFV–HSY=BAS INFER SBRD White+male 3SGA:3SGO=kill.PFV=BAS INFER
á=pɔ̀ː+dôː á=pɔ̀ː+dôː 3SGA:3SGD:3SGO=bringC+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 mɔ́n tôj ∅=dɔ́: Σ
    John mɔ́n tôj ∅=dɔ́:
    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, as shown in (16) and (17). With /món/ taking scope above negation, we have:

\[
\begin{array}{ll}
\text{must} & > \text{not} \\
\end{array}
\]

\[
\begin{align*}
(16) & \quad \text{hオン mォン ぁん ぁて-dょー-mォ：} \\
    & \quad \text{NEG INFER you 1SGS=be–NEG} \\
& \quad \text{‘I’m not you, I guess.’ (McKenzie et al. 2022: S143)} \\
(17) & \quad \text{mォン ほん ぐー-bょー-mォ：} \\
    & \quad \text{INFER NEG 3SGA:2SGO=see–NEG} \\
& \quad \text{‘I don’t think he saw you.’}
\end{align*}
\]
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 m̃n tôj ə=dó; né hàgà hétó gà=só:tè+tò:
       Al mɔn tôj ə=dó: né hàgà hétó gà=só:tè+tò:
       Al infer house.in 3SG=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: pàhį ə=ál+dó; m̃n há:têl ə=á:l–é:
       tsê: pàhį ə=ál+dó: m̃n há:têl ə=á:l–é:
       horse clearly 3SGS=move+be infer person:INDEF 3SGA:3SGO=move–PFV
       ‘Clearly the horse has moved; maybe somebody chased it.’
The incorporated stem /hén/ is ‘dubitative’ in Watkins 1984
However, it actually indicates that the speaker believes the proposition (epistemic or doxastic base)

\[(20)\] hɔ́n gjà=hén+sɔːːtè+pˈaj–gò:
 hɔ́n gá=hén.∗+sɔːːtè+pˈaj–gò:
neg 3SGA:3PLO=possibly+work+fight(PFV)–neg
 ‘I don’t think he has a job.’ / ‘I doubt he’s working.’

\[(21)\] ∅=pʰɔ́ː–hèl 
gò ∅=tóː:n–ê, “pɛː: mɔː:
∅=pʰɔ́ː–hèl 
gò ∅=tóːn–ê, “pɛː: mɔː:
3SGS=stop.PFV–HSY and.SA 3SGS=say.IPV–HSY turkey somewhat
∅=hén+dò!:”
∅=hɛ̃.∗+dó!:”
3SGS=possibly+be
 ‘He stopped and said, “I think that was a turkey!”’

(Toyebo 1962: 10)
25 Correcting the literature

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

(22) tsɔ̂ː mó: ən bá=hén+tǫː–gà:
tsɔ̂ː mó: ən bá=hén+.tǫː–gà:  
thusly somewhat HAB 3NSGS=possibly+speak–IPFVvi  
‘I believe that is the way it is rendered’

I somewhat believe that p → dubitative

The observations were all correct; the characterization was not
### 26 Rounding out the list

<table>
<thead>
<tr>
<th>force</th>
<th>Kiowa</th>
<th>English</th>
<th>note</th>
</tr>
</thead>
<tbody>
<tr>
<td>necessity</td>
<td>/pàhịː/</td>
<td>‘clearly, definitely’</td>
<td>incompatible with MOD</td>
</tr>
<tr>
<td></td>
<td>/báːtsòl/</td>
<td>‘clearly, definitely’</td>
<td>incompatible with MOD</td>
</tr>
<tr>
<td></td>
<td>/món/</td>
<td>‘INFER’</td>
<td>incompatible with HSY</td>
</tr>
<tr>
<td></td>
<td>/kòttè/</td>
<td>‘likely, liable to’</td>
<td>incompatible with MOD</td>
</tr>
<tr>
<td>possibility</td>
<td>/hájáttò/</td>
<td>‘maybe, perhaps’</td>
<td>requires MOD</td>
</tr>
<tr>
<td></td>
<td>/hàgà/</td>
<td>‘maybe’</td>
<td>also means ‘or’</td>
</tr>
<tr>
<td></td>
<td>/hèn/+</td>
<td>‘possibly’</td>
<td>must be incorporated</td>
</tr>
<tr>
<td>impossibility</td>
<td>/bèthêndè/</td>
<td>‘unlikely, doubtful’</td>
<td>requires MOD, incompatible with NEG</td>
</tr>
<tr>
<td></td>
<td>/ádàltè/</td>
<td>‘unlikely, doubtful’</td>
<td>only found in word-lists</td>
</tr>
</tbody>
</table>

necessity  weak necessity  weak possibility  possibility  impossibility

stronger  weaker

all  all the best  some of the best  some  none
27 Epistemic unlikelihood or impossibility

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

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

(23) tó: bè:tʰêndèmes ə=ɔ̨́m–dé–t’ò:
tó: bèthêndë ə=ɔ́m–dé.–t’ò:
house unlikely 3SGS=makeDET–DET.PFV–MOD_vi

‘The house will never be finished.’
‘I doubt the house will be finished.’

(Harrington 1928: 42)

(24) bè:tʰêndë kú:tò+hjǫ̀j bét=bóː–tò:
bèthêndë kú:tò.+hjǫ̂j bét=bóː–tò:
unlikely bird+genuine.INV IINCL1:V3INV=see.PFV–MODvt

‘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

```
root/factual  circumstantial
             dynamic
             priority
             teleological
             deontic
             bouletic
```
Inferring root modality

Kiowa root modals are generally indirect.

No ‘have to’ or ‘should’ : Usually either the imperative is used or the MODal inflection 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.’
      ę́ː–hɔ̀ː–gɔ̀ː (dá) bà=kó+khìː
      ę́ː–hɔ̀ː–gɔ̀ː (dá) bà=kó+khíː
      PROX–DEF–during (ABS.NEC) LINCLS=right now+exit.PFV.IMP
      ‘Let’s leave right now.’
   b. Prompt: ‘We should leave now.’
      ę́ː–hɔ̀ː–gɔ̀ː bà=kó+khìː–t’ɔ̀ː
      ę́ː–hɔ̀ː–gɔ̀ː bà=kó+khíː–tʾɔ́ː
      PROX–DEF–during LINCLS=right now+exit.PFV–MODVT
      ‘We should leave right now.’
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 ə̀n t’áːgjà́-j èm= gún–mò
      Elena ə̀n t’áːgà–j èm= gún–mò
      Elena HAB good-ADV 3SGA:REFL O= dance-IPFV
   ‘Elena dances well.’

   Knowing (a form of ability)
   b. Elena ə̀n= kúng hàj–gìà+dò:
      Elena ə̀n= kúng+háj–gá+dó:
      Elena 3SGD:3PLS= dancec+inform–DETRc+be
   ‘Elena knows how to dance.’
31  Capability

Being skilled (better than mere ability)

(27) Elena ȧn=kũn+mɔ́ːgò
Elena ȧn=kũn+mɔ́ːgò
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 tòː+dǫ̂m ȧn á=pʰíːl–à
Elena tòː+dǫ̂m ȧn á=pʰíl–à
Elena house+c+bottom:VAGUE HAB 3SGD:3SGS=wipe.DETR–IPFV\textsubscript{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 tòː+dom á=pʰíʔtè–t’òː:
Elena tòː+dom á=pʰítte–t’òː:
Elena housec+bottom:VAGUE 3SGD:3SGS=wipe.DETR.PFV–MOD

‘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)  nőː hóldé bá=mɔ́ː k’óp+péː–gù
  nőː hóldé bá= mőː gò k’óp+péː–gù
  l soon  1INCLA:3SGO=move camp.PFV.IMP and.SA mountain+direction–to
  bà=hóː+bàː bôt màːjíː mőː
  bà=hóː+ bá: bôt màːjíː mőː
  1INCLS=vehicle+go.PFV.IMP because woman somewhat
  é=mőjjobé
  é=mőjjobé
  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)
Some kinds of root possibility are lexically expressed.

The bound stem /tʰénts’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.’

Lit: ‘it is play+permitted to the children’
35  Showing root, not epistemic

Showing /tʰénts’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 /tʰénts’ò/ such contexts are accepted.

(32)  hon èm=gú:n–ɔ:     né  án=tʰénts’ò+dɔː:
    hon  èm=gún–ɔ:     né  án=tʰénts’ò+do:
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.)
Another piece of evidence that /tʰéntsʼò/ is not epistemic: it takes narrow scope. Here it scopes below negation, and cannot scope above it.

\[
\text{not} > \text{be allowed}
\]

(33)  hôn yá=kûn+tʰéntsʼò+dò:-mò:
              hôn yá=kûn+tʰéntsʼò+dò:-mò:
NEG 1SGD:3PLS=dance+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 /tʰénts’ò/ with the causative /ɔ́m/ ‘make’ gives this sense with permission or allowance.

(34) ɔ̨̀nk’îː há–bé gjà=dóː=ɛː kój–gú gò kîj–gù gò ɔ̨̀nk’îː há–bé gà=dóː=ɛː kój–gú gò kâj*–gú gò
in past INDEF–SPRD 3PLS=be=when:DF Kiowa–INV and Comanche–INV and
thɔ́gûj giá= k’ù:+tʰénts’ò+:ɔ́m–ɛː t’ókʰ̩j
thɔ́gûj gá*= k’ú:+tʰénts’ò+:ɔ̨̀m.–ɛː t’ókʰ̩j
Plains.Apache\INV 3EMP: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

\[d\ddot{o}\ddot{p}:e/ \text{‘ask, order’ is sometimes used to indicate granting permission.}

(35) \begin{align*}
\emptyset = t\ddot{o}:n-\emptyset: & \quad th\ddot{o}:+\dddot{owl}^h\dddot{oy} \quad g\dddot{a}=d\ddot{o}:=d\ddot{e} \quad k\ddot{o}l \\
\emptyset = t\ddot{o}:n-\ddot{e}: & \quad th\ddot{o}:+\dddot{owl}^h\dddot{oy} \quad g\dddot{a}=d\ddot{o}+:=d\ddot{e} \quad k\ddot{o}l \\
3SGS=say.IP\dddot{v}-HSY_{IP\dddot{v}} & \text{water+wicked} \quad IsGA:3SGO=have=BAS \quad some.IRR \\
\dddot{a}=th\ddot{o}: & \quad n~ \dddot{eg}\ddot{h} \ddot{eg}\ddot{h} \ddot{e} \\
\dddot{a}=th\ddot{o}: & \quad n\ddot{o} \quad \ddot{he} \ddot{g} \ddot{h} \ddot{e} \ddot{g} \ddot{o} \\
2SGA:3SGO=drink.PFV.IMP & \text{and.DF then then} \\
\dddot{e}m=th\ddot{e}p+\dddot{d}\ddot{o}:\ddot{p}\ddot{e} \ddot{t} \ddot{o}: & \\
\dddot{e}m=th\ddot{e}p+\dddot{d}\ddot{o}:\ddot{p} \ddot{e} \ddot{t} \ddot{o}: \\
IsGA:2SO=exit_{C}+\text{permit.PFV-MOD}_{VT} \\
\left(\right. \left. \frac{\text{He said, “Drink some of this alcohol I’ve got, and then I’ll let you out.”}}{\text{McKenzie et al. 2022: S226–227}} \right)
\end{align*}

Consultants affirm the ‘let’ meaning, and in elicitation, they say that this sense is fine out of the blue for a meaning of \[d\ddot{o}\ddot{p}:e/\].
Kiowa has a bound stem /kón/ that Watkins labels as ‘permissive’.

(36)  tségùː−dò  è=kón+hèːbà
tségùː.−dó  è=kón.+hèːbà
dogINV−INV 3INVS=let+enter.PFV
‘Let the dogs in.’

(37)  è=kón+kìː+pịː+hèːbà
è=kón.++kíː+píːː+héːbà
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.

\[
\begin{array}{l}
\text{á=kオン+k’ombokààʔk’à gò} \\
\text{á=kオン.+k’ombokàtkà gò}
\end{array}
\]

\[
\begin{array}{l}
3\text{empS}=\text{let+imitate:pfv and:sa} \\
g’à=kオン+kój+kút+hàj–gjà \\
gà=kオン. +kój+kút+háj–gà
\end{array}
\]

\[
\begin{array}{l}
3\text{empD:3plS}=\text{let+Kiowa+write+inform–detr.pfv}
\end{array}
\]

\[\text{‘so they might be motivated to do likewise and learn Kiowa writing’}\]

\[\text{Lit. ‘and let them do the same and learn to write Kiowa.’} \quad \text{McKenzie et al. (2022: S181)}\]

Also: /kオン/ 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.

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

(39) **Circumstantial inability**

| tsɛː   | dōj+tón=k’ɔ́t  | ǎn=k’ɔ́l+mɔ́ː:d–èp |
| tsɛː   | dōj*+tón=k’ɔ́t | ǎn=k’ɔ́l.+mɔ́ː: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’
Discerning distinct flavors

Context:
I know how to cook bót, but I don’t have the ingredients.

(40)  bót já= pí:+mɔ́ː+dèp
     bót já= pí:+mɔ́ː+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:+mɔ́ː+dèp
     b. hɔ́n bót já= pí+háj−g−ɔː
         hɔ́n bót já= pí+háj−g−ɔː
         NEG bót lSGD:3PLS= cook+inform−DTR−NEG
         ‘I can’t make bót.’ (lit. ‘I didn’t learn how to make bót’)

Discerning distinct flavors

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

(42)  a. #bót já=pí:+mɔ̨̀ɔ́ːdɛp
    b. bót yá=pí:+îl+dɔ́ː
        bót yá=pí:+îl. +dɔ́ː
        bót 1SGD: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:+mɔ́ː:
    b. bót yá=pí:+jóʔkèj
        bót yá=pí:+jótkèj
        bót 1SGD:3PLS=cook+blunder.PFV
    ‘I couldn’t make bót/I failed to make bót.’
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 /mâːsòt/ ‘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) mâːsòt ɔ́y–gú ěː–hɔ̀–dè ̣àn
mâːsòt ɔ́y–gú ěː–hɔ̀–dé ̣àn
supposed to be many–INV PROX–DEF–BAS HAB

gỳá=k’iːkɔ̨ːm–ę̀ː
gá. =k’iːkɔ̨ːm–èː
3EMP A:3PL O=decide.IP FV–HSY IP FV

‘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+tǫː–gỳà  ě=tsá:lî–îː–tɔː=dè
kój.:+tʊː–gá  ě=tsál–îː–tɔː=dé
Kiowa+speak–BAS 2SGA:1SGO=askIPFV–IPFV–MODVT=BAS
bàʔ=mɔ̨ːkʲą́+gùl
bàʔ=mɔ̀ːká̃+gûl
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)
Habituals are often used for indirect necessities (e.g. ‘Men take care of their loved ones’) 
The verb /ɔ́ndɔ́ː/ ‘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=kǔn+ąː–hòp
Ø=kún.+ąː–hóp
3SGS=dance\textsc{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) dɔ́ː+kʰìː: ̀à=ɔ̂j+pǫ̀ː+tsǎŋ–t’òː:
dòː.+kʰíː: ̀à=ɔ̂j.+pǫː+tsán–t’òː:
holy+day 1SGS=again+see_c+arrive.PFV–MODVT
‘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) hájáʔtò dóː+khìː:  à=ɔj+pòː+tsàn–t’òː:  
  hájáttò dóː+khíː:  à=ɔj+pòː+tsàn–t’óː:  
  maybe  holy+day 1SGS=again+seeC+arrive.PFV–MODVT  
  ‘I might come see you again on Sunday.’

(49) èm=tsàn–t’óːː=ðò  dáːl  èm=tʰáj+hìː–tòː:  
  èm=tsàn–t’óːː=ðò  dáːl  èm=tʰáj+híː–tóː:  
  2SGS=arrive.PFV–MODVT=if.DF WK.NEC 1SGA:2SGO=accompany+take.PFV–MODVT  
  ‘If you come then I WILL go with you’  

P. McKenzie papers b21-f4-p21
The futurate

Using imperfective for fairly certain future events

Using imperfective for fairly certain future events

(50)  dò+:kʰìː  à=ôj+pǒː+:tsàn–mà
dòːp+.kʰìː  à=ôj.+pǒː+:tsàn–mà
holy+day 1SG=again+seeC+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  dò:+kʰìː  à=ôj+pǒː+:tsàn–mà
Melody  dòːp+.kʰìː  à=ôj.+pǒː+:tsàn–mà
Melody  holy+day 1SG=again+seeC+arrive_{IPFV–IPFV}\_vi
‘Melody is coming to see me again on Sunday.’
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.

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

(52) \text{Kʰʸάʰįːgọ́: dá èm=tsán}
\text{Kʰάʰįːgọ́: dá èm=tsán}
tomorrow \text{ABS.NEC} 2SGS=arrive.PFV.IMP
‘You have to come tomorrow.’
Domain sizers

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

(53)  
\[
\begin{align*}
\text{dá/dáàl/hét} & \quad \text{kí:} \quad \text{bàʔ=kôn} \\
\text{dá/dáàl/hét} & \quad \text{kí:} \quad \text{bàt=kôn}
\end{align*}
\]
\text{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)  
\[
\begin{align*}
t'ōlò:+tʰọ: & \quad g'ā=kôn–tóż: \quad \text{nọ} \quad \text{dá/dáàl/hét/pòj} \quad \text{kí:} \\
t'ōlò:++tʰọ: & \quad gā=kôn:–tóż: \quad \text{nọ} \quad \text{dá/dáàl/hét/pòj} \quad \text{kí:}
\end{align*}
\]
sweet+drink 1SGA:3SGO=bring.PFV–MODVT and.DF ABS/STR/WK/NEG.NEC meat 
\[
\begin{align*}
bàʔ=kôn–tóż: \\
bàt=kôn:–tóż:
\end{align*}
\]
2SGA:3PLO=bring.PFV–MODVT
‘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
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 /ɔ̩́gɔ̀l/)
- 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


