

Evidentials and Questions in Cheyenne

Sarah E. Murray

Rutgers University

`rci.rutgers.edu/~semurray`

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Assertion: two views

- Assertion updates the common ground
 - Stalnaker 1978, Karttunen 1974

- Assertion is a proposal to update the common ground
 - Groenendijk 2009, Mascarenhas 2009
 - Gunlogson 2001
 - Ginzburg 1996, Roberts 1996

A distinction in assertion

- Not at-issue
 - added to the common ground directly
 - not negotiable

- At-issue
 - a proposal to update the common ground
 - up for negotiation

Sentences with evidentials: two contributions

- diagnostics in Faller 2002, Matthewson et al. 2008, a.o.
- ‘propositional’ contribution ($p = \text{Floyd sang}$)
 - challengeable/deniable, up for negotiation
 - at-issue content
 - the ‘main point’ (Papafragou 2006, Simons 2007)
- evidential contribution (speaker heard that p)
 - not challengeable/deniable, not up for negotiation
 - not at-issue content

- (1) A: *É-nemene-sístse Floyd* B: ✓ No he didn't.
 3-sing-RPT.3SG Floyd # No you didn't.
 ‘Floyd sang, I hear.’

Overview of Talk

- Cheyenne evidentials
 - parenthetical-like (mostly), as in Quechua (Faller 2002)

- evidentials in declaratives
 - evidentials as NOT-AT-ISSUE ASSERTION (new information, not presupposed, contra Matthewson et al. 2008)
 - no appeal to separate level of illocutionary meaning (contra Faller 2002)

- evidentials in questions, two types
 - Y/N mood, in alternation with evidentials
 - variable over evidential relations
 - y/n clitic, compatible with evidentials
 - evidential restricts possible answers

Outline

- 1 Introduction
- 2 Cheyenne Evidentials
- 3 Evidentials in Declaratives
- 4 Evidentials in Questions
- 5 Summary and Prospects

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Language Overview

- A Plains Algonquian language (Montana, Oklahoma)
- Data primarily from fieldwork, paradigms from Cheyenne Grammar (Leman 1980)
- A four-way evidential distinction in Cheyenne
 - Direct (unmarked)
 - Inferential
 - Reportative
 - Specialized reportative
- Evidentials are part of illocutionary mood paradigm
- This talk: the direct evidential and the (plain) reportative

Illocutionary mood paradigm

Direct evidential

É-néméne-∅

3-sing-DIR

‘He sang, I’m sure’

Mo=é-néméne-∅

y/n=3-sing-DIR

‘Given what you know, did he sing?’

Reportative evidential

É-nemene-séstse

3-sing-RPT.3SG

‘He sang, I hear’

Mo=é-nemene-séstse

y/n=3-sing-RPT.3SG

‘Given what you hear, did he sing?’

Interrogative

É-nemene-he

3-sing-Y/N

‘[Given your evidence,]
did he sing?’

Imperative

Néméné-stse

sing-IMP.2SG

‘[You (sg.)] sing!’

Optative

Némene-ha

sing-OPT.3SG

‘Let him sing!’

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Evidentials in declaratives

- Direct evidential in declarative

- (2) *É-néméne-∅ Floyd*
 3-sing-DIR Floyd
 ‘Floyd sang, I’m sure.’

- Reportative evidential in declarative

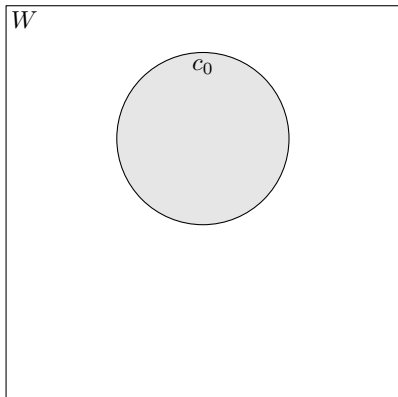
- (3) *É-nemene-séstse Floyd*
 3-sing-RPT.3SG Floyd
 ‘Floyd sang, I hear.’

Outline

3 Evidentials in Declaratives

- Direct evidential
- Reportative evidential

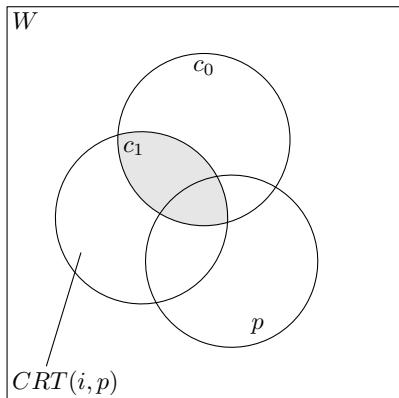
(2) 3-sing-DIR Floyd



Initial common ground

set of candidate speech worlds

(2) 3-sing-DIR Floyd



Evidential restriction:

$$CRT(i, p) =$$

$\{w \mid \text{in } w, \text{ speaker is certain that } p\}$

not at-issue

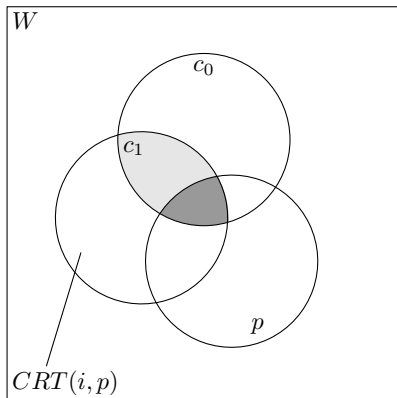
non-negotiable (not deniable)

(e.g. update a la Stalnaker 1978)

A: 3-sing-DIR ('He sang, I'm sure')

B: # 'No you're not'

(2) 3-sing-DIR Floyd



At issue: $p =$ Floyd sang
negotiable (deniable)

Declarative evidential relation:

add p to common ground c_1
 $\langle c_1, \leq_p \rangle$ (p -worlds preferred)

A: 3-sing-DIR ('He sang, I'm sure')

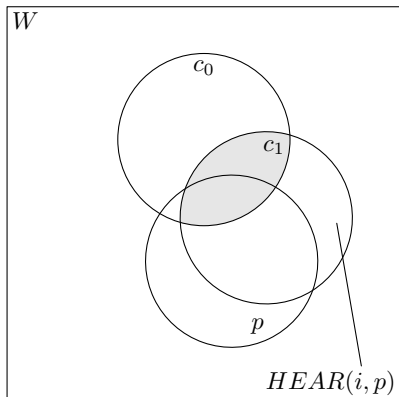
B: ✓ 'No he didn't'

Outline

3 Evidentials in Declaratives

- Direct evidential
- Reportative evidential

(3) 3-sing-RPT.3SG Floyd



Evidential restriction:

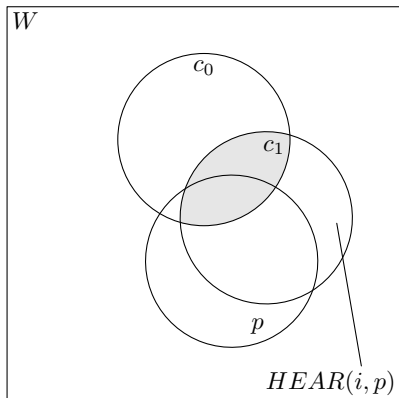
$$HRD(i, p) = \{w \mid \text{in } w, \text{ speaker heard that } p\}$$

not at-issue

non-negotiable (not deniable)

(e.g. update a la Stalnaker 1978)

(3) 3-sing-RPT.3SG Floyd



At issue: $p =$ Floyd sang
negotiable (deniable)

Declarative evidential relation:
no change to common ground c_1
 $\langle c_1, \leq_{c_1} \rangle$ (c_1 -worlds preferred,
i.e. no further restriction)

c.f. Faller (2002): different speech
act for the reportative

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Evidentials and questions

- Reportative evidential in question

- (4) *mo=é-nemene-séstse Floyd*
y/n=3-sing-RPT.3SG Floyd
 ‘Given what you heard, did Floyd sing?’

A: yes...
 ...✓ 3-sing-RPT
 ...# 3-sing-DIR

- Yes/no mood (alternates with evidentials)

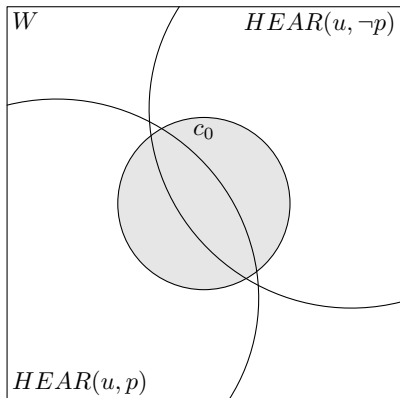
- (5) *É-nemene-he Floyd*
3-sing-Y/N Floyd
 ‘Given your evidence, did Floyd sing?’

A: yes...
 ...✓ 3-sing-RPT
 ...✓ 3-sing-DIR

Outline

- 4 Evidentials in Questions
 - Reportative Evidential in Questions
 - Interrogative Yes/No mood

(4) $y/n=3$ -sing-RPT.3SG Floyd



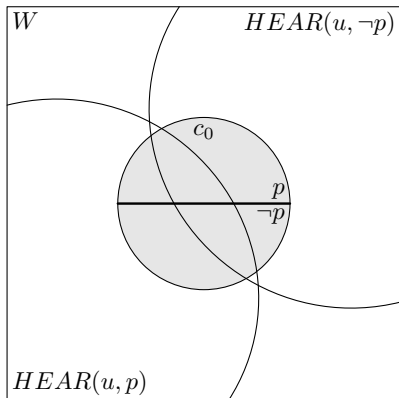
Presupposes that the addressee heard p or $\neg p$ (a la Stalnaker 1973)

Evidential restriction:

$HRD(u, p) \cup HRD(u, \neg p) =$
 $\{w \mid \text{in } w, \text{ addressee } u \text{ heard that } p$
 or addressee heard that } $\neg p\}$

‘Given what you heard, ...’

(4) $y/n=3$ -sing-RPT.3SG Floyd



At issue: $p =$ Floyd sang

Interrogative relation:

‘... did he sing?’

$\langle c_0, \equiv_p \rangle$ (equivalence relation)

(Groenendijk & Stokhof 1984)

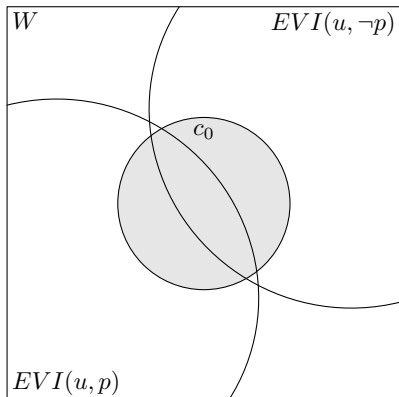
✓ A: 3-sing-RPT ‘He did, I hear’

A: 3-sing-DIR ‘He did, I’m sure’

Outline

- 4 Evidentials in Questions
 - Reportative Evidential in Questions
 - Interrogative Yes/No mood

(5) 3-sing-Y/N Floyd



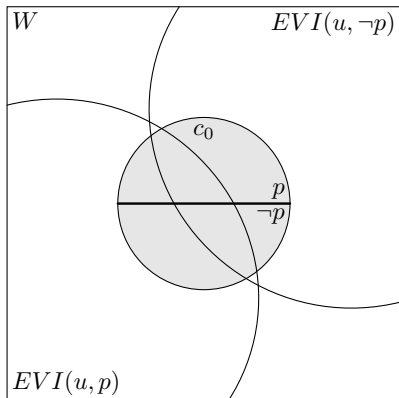
Evidential restriction:

$$EVI(u, p) =$$

$\{w \mid \text{addressee } u \text{ has evidence that } p \text{ in } w\}$

‘Given your evidence ...’

(5) 3-sing-Y/N Floyd



At issue: $p = \text{Floyd sang}$

Interrogative relation:

‘...did he sing?’

$\langle c_0, \equiv_p \rangle$ (equivalence relation)

(Groenendijk & Stokhof 1984)

✓A: 3-sing-RPT ‘He did, I hear’

✓A: 3-sing-DIR ‘He did, I’m sure’

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Proposal summary

- evidentials in general: two contributions
- in declaratives
 - evidential restriction (assertion)
 - illocutionary relation (ordering), proposal to add top ranked worlds (may be restrictive or not)
- in *y/n* questions
 - evidential restriction (presupposition)
 - illocutionary relation (equivalence, request for answer)
- interrogative Y/N mood
 - variable over evidential relations (CRT, HEAR, ...)
 - illocutionary relation (equivalence)

Overview of implementation

Building on Hamblin 1973's work on Questions and Assertion

- Hamblin-style representations enriched with evidential restrictions and relations (details in appendix)

- Direct evidential declarative

$$(2') \frac{\lambda p. (p = \lambda w. \text{sing}(w, \text{floyd})) \wedge \text{certain}(v_0, i, p)}{\text{(at-issue proposition)} \quad \text{(ev. restriction)} \quad \text{(ev. relation)}} \leq p(v_1)$$

- Reportative evidential declarative

$$(3') \lambda p. (p = \lambda w. \text{sing}(w, \text{floyd})) \wedge \text{hear}(v_0, i, p) \wedge v_0 = v_1$$

Overview of implementation

Building on Hamblin 1973's work on Questions and Assertion

- Reportative evidential in *y/n* question

$$(4') \quad \lambda p. (p = \lambda w. \text{sing}(w, \text{floyd}) \vee p = \lambda w. \neg \text{sing}(w, \text{floyd})) \\ \wedge \text{heard}(v_0, u, p) \wedge p(v_0) = p(v_1)$$

- Interrogative Y/N mood

$$(5') \quad \lambda p. (p = \lambda w. \text{sing}(w, \text{floyd}) \vee p = \lambda w. \neg \text{sing}(w, \text{floyd})) \\ \wedge \text{EVI}(v_0, u, p) \wedge p(v_0) = p(v_1)$$

- Interpreting the representations: definitions of evidential restriction (bind v_0 and update common ground) and illocutionary relation (relation induced by binding v_0 and v_1)

Prospects for future work

- Other mood markers (e.g. imperatives) may also introduce illocutionary relations
- WH-questions and illocutionary variability

(6) *Tósa'e é-vo'èstanéheve-**séstse***

where 3-live-RPT.3SG

(i) 'Given what you heard, where does he live?'

(ii) 'He lives somewhere, I wonder where'

(7) *nevá'e-**séstse***

who-RPT.3SG

'Someone, I wonder who'

*hénová'é-**nèse***

who-RPT.3SG-INAN

'Something, I wonder what'

Thanks!

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Outline

6 Appendix: Formal Implementation

Building on Hamblin 1973

sentences as sets of propositions

- category to type correspondence
- questions as plural sets of propositions, see (8)
- declaratives as singleton sets of propositions, see (9)

(8) Who sang?

(8') $\lambda p. \exists x(\text{person}(x) \wedge (p = \lambda w.\text{sing}(w, x)))$

(9) Floyd sang.

(9') $\lambda p. (p = \lambda w.\text{sing}(w, \text{floyd}))$

Proposal: extend to sentences with evidentials

- scope of evidential – the ‘main point’ – is the member of set
- evidential is ‘grounds for making speech act’ (Faller 2002)

(2) *É-néméne-∅ Floyd*
 3-sing-DIR Floyd
 ‘Floyd sang, I’m sure.’

(2′) Hamblin-style representation of (evidential) declarative, enriched with evidential restriction and illocutionary relation:

$$\frac{\lambda p. (p = \lambda w. \text{sing}(w, \text{floyd})) \wedge \text{certain}(v_0, i, p) \wedge p(v_0) \leq p(v_1)}{(\text{at-issue proposition}) \quad (\text{ev. restriction}) \quad (\text{ev. relation})}$$

Representation of (evidential) declarative

$$(2') \quad \lambda p. (p = \lambda w. \text{sing}(w, \text{floyd})) \wedge \text{certain}(v_0, i, p) \wedge p(v_0) \leq p(v_1)$$

- free variables: v_0 speech world, v_1 topic world
- (the characteristic function of) a set of propositions
- the singleton of the scopal proposition if each condition is met, the empty set if not

- Define evidential restriction (update): bind v_0
- Extract evidential relation, modeled as a relation on the common ground: bind both v_0 and v_1

Evidential restriction

$$(2') \quad \lambda p. (p = \lambda w. \text{sing}(w, \text{floyd})) \wedge \text{certain}(v_0, i, p) \wedge p(v_0) \leq p(v_1)$$

- Can define update on (2') if speech world variable v_0 is bound

evidential restriction

For a common ground c , a model \mathcal{M} , and an $(st)t$ term P , c updated with P is defined as:

$$c[P] = \{w \in c \mid \exists g (\exists p \in D_{st}(\llbracket \lambda v_0. P \rrbracket^{\mathcal{M}, g}(w) = \{p\}))\}$$

- takes an input common ground and returns the subset where the evidential restriction is true
- “illocutionary restriction”

Illocutionary relation

(2') $\lambda p. (p = \lambda w. \text{sing}(w, \text{floyd})) \wedge \text{certain}(v_0, i, p) \wedge p(v_0) \leq p(v_1)$

- Define relation on c induced by (2'): bind v_0 and v_1

Illocutionary relation

For a common ground c , worlds w, w' in c , a model \mathcal{M} , and an $(st)t$ term P , w' P -outranks w in c , written $w \leq_{c,P} w'$, iff:

$$w, w' \in c \ \& \ \llbracket \lambda v_0. \lambda v_1. P \rrbracket^{\mathcal{M}}(w)(w') \neq \emptyset$$

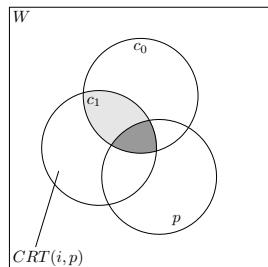
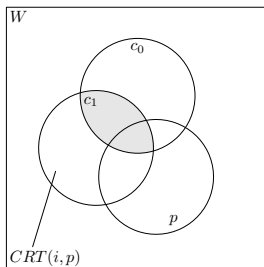
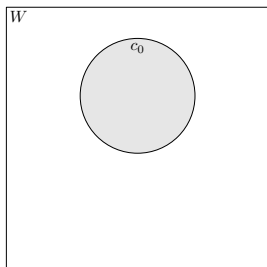
- ranks common ground worlds based on the content of the evidential relation

Direct: restriction and relation

$$(2') \quad \lambda p. (p = \lambda w. \text{sing}(w, \text{floyd})) \wedge \text{certain}(v_0, i, p) \wedge p(v_0) \leq p(v_1)$$

$$c_0[(2')] = \{w \in c_0 \mid \llbracket \text{certain} \rrbracket^{\mathcal{M}}(w)(\llbracket i \rrbracket^{\mathcal{M}})(\llbracket \lambda w. \text{sing}(w, \text{floyd}) \rrbracket^{\mathcal{M}}) = 1\} \\ = c_1$$

$$w \leq_{c_1, (2')} w' \text{ iff } w, w' \in c_1 \ \& \ \llbracket \lambda w. \text{sing}(w, \text{floyd}) \rrbracket^{\mathcal{M}}(w) \leq \llbracket \lambda w. \text{sing}(w, \text{floyd}) \rrbracket^{\mathcal{M}}(w')$$



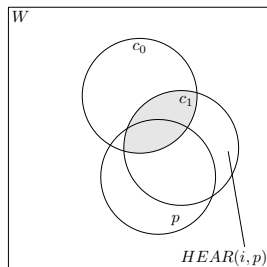
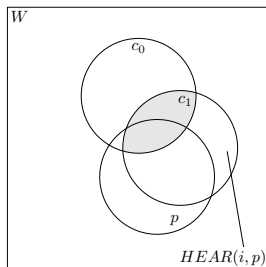
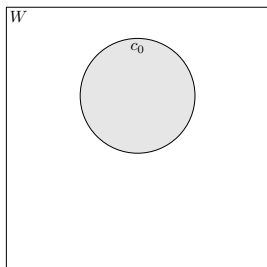
Reportative: restriction and relation

$$(3') \quad \lambda p. (p = \lambda w. \text{sing}(w, \text{floyd})) \wedge \text{hear}(v_0, i, p) \wedge v_0 = v_1$$

$$c_0[(3')] = \{w \in c_0 \mid \llbracket \text{hear} \rrbracket^{\mathcal{M}}(w)(\llbracket i \rrbracket^{\mathcal{M}})(\llbracket \lambda w. \text{sing}(w, \text{floyd}) \rrbracket^{\mathcal{M}}) = 1\}$$

$$= c_1$$

$$w \leq_{c_1, (3')} w' \text{ iff } w, w' \in c_1 \ \& \ w' = w$$



Yes/no questions

(4) *Mó=é-nemene-séstse* Floyd

mó=3-sing-RPT.3SG Floyd

‘Given what you heard, did Floyd sing?’

(4') $\lambda p. (p = \lambda w. \text{sing}(w, \text{floyd}) \vee p = \lambda w. \neg \text{sing}(w, \text{floyd}))$

$\wedge \text{heard}(v_0, u, p) \wedge p(v_0) = p(v_1)$

(5) *É-nemene-he* Floyd

3-sing-Y/N Floyd

‘Given your evidence, did Floyd sing?’

(5') $\lambda p. (p = \lambda w. \text{sing}(w, \text{floyd}) \vee p = \lambda w. \neg \text{sing}(w, \text{floyd}))$

$\wedge \text{EVI}(v_0, u, p) \wedge p(v_0) = p(v_1)$

Contact

Sarah E. Murray
Linguistics Department
Rutgers, The State University of New Jersey
18 Seminary Place
New Brunswick, NJ 08901

`semurray@rutgers.edu`

`http://www.rci.rutgers.edu/~semurray`