

Evidentials, Embedding and the Acquisition of Theory of Mind

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FIRST: a word about grants

- NSF has "dissertation improvement grants" for students. Apply by 1/8.
- If you apply to NSF and they say "revise and resubmit", they mean it, so do it.
- For mostly theoretical proposals, the most important thing is to make it clear exactly what you plan to do when.

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Map of this talk

Overview of grant-related projects

- What is an evidential, anyway?
- Relevance of evidentials to acquisition of "Theory of Mind"

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Our research includes

- Acquisition studies of Tibetan and English
- Syntax and semantics studies of Tibetan, English and Navajo
- Development of teaching materials for Navajo

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Acquisition:

- Acquisition of evidentials in Tibetan
- Acquisition of modals in English (Anna, Tania)
- Acquisition of embedding and deixis in English (Helen, Jill's students)

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Syntax and Semantics

- Navajo indirect discourse and deixis
- Interaction of tense, aspect and modality with evidentials in Tibetan (Leah)
- Semantics of "think" and "believe" (Keir)
- Evidentials and the left periphery
- Sentence particles in Japanese (Chris D.)

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Navajo teaching materials

- Using experiment materials for field work and teaching of complex constructions
- Teaching hard-to-define particles
- Minimal Grammar textbook

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What are evidentials?

In many languages, all statements must include a morpheme specifying *source of information*

Makah:

- wiki-caxa-w 'It's bad weather (directly experienced)'
- wiki-caxa-k-qad'i 'It's bad weather (I can see or hear it)'
- wiki-caxa-k-pid 'It must be bad weather (inference)'
- wiki-caxa-k-wa.d 'I'm told/they say there's bad weather'

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EVIDENTIALS: indicate the speaker's source of information

EPISTEMIC MODALS: indicate the speaker's judgment based on the available information

reliable information  more certain judgment

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DeHaan (1998) points out that:

- ❖ Evidentials can co-occur with overt modals in a sentence
- ❖ Evidentials have higher scope than normal epistemic modals (eg., they always take higher scope than negation)
- ❖ Evidentials rarely develop historically from modals. More often, they develop from reduced verbs or from tense/aspect.

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info source ≠ epistemic judgment

Rumor has it that Bush must be planning to fire Rove.
Rumor has it that Rove might retire.

I feel like I must be getting a cold.
I feel like tuna might be nice for dinner.

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Tucano (Aikhenvald 2004:52-53)
(warning - missing diacritics)

1. diayi wa'i-re yaha-**ami** **VISUAL**
'The dog stole the fish'(I saw it)
2. diayi wa'i-re yaha-**asi** **NONVIS.**
'The dog stole the fish'(I heard it)
3. diayi wa'i-re yaha-**api** **INFERENCE**
'The dog stole the fish'(I infer)
4. diayi wa'i-re yaha-**api** **HEARSAY**
'The dog stole the fish' (I was told)

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Eastern Pomo (Also from Aikhenvald)

1. mi-p-al P^habek-a **DIRECT**
'He got burned'(I saw it/know directly)
2. biYa P^habek^h-ink'e **SENSORY**
'I burned my hand'(I felt it)
3. bek-al P^habek-ine **INFERENCE**
'They must have gotten burned'
4. bek-al P^habek-le **HEARSAY**
'They got burned'(I was told)

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Tucano

INFERENCE
HEARSAY
VISUAL
Speaker saw the event
NONVISUAL
Speaker heard/
smelled/felt event

E.Pomo

INFERENCE
HEARSAY
DIRECT
Speaker has direct evidence
SENSORY
Speaker personally experienced

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1. Tibetan (3-way system (???))
 - a. nga 'bras za-gi-yod 'I eat rice' (I just know from personal experience)
 - b. kho 'bras za-gi-'dug 'He's eating rice' (I see/saw him)
 - c. kho 'bras za-gi-yod.red 'He (must be) eating rice' (I infer)
2. Turkish (2-way system)(examples from Sener 2006- Sener's diacritics missing)
 - a. Bengu resim yap-mis
Bengu picture draw-[episodic/indirect.ev]3rdsg
'Bengu apparently drew a picture'
 - b. Bengu resim yap-ti
Bengu picture draw-[episodic/direct.ev]3rdsg
'Bengu drew a picture'

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Languages with grammatical marking of evidence

- always seem to mark the same basic categories
- almost never distinguish more than 4 evidence types:
 - personal experience
 - direct/sensory
 - inferential
 - hearsay

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Note the increasing amounts of syntax:

- I left early.
- I saw [Mary leave early.]
- I saw[that [Mary left early.]]
- Someone [told me[that [Mary left early]].]

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Pancheva (1997)

EVIDENTIALS: RESTRICTIONS ON MODAL BASE

Kratzer: 'John must be the culprit'

[based on what is known]	must	culprit(John)
modal base	modal	p

Pancheva:		
[based on evidence]	must	p

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Actual domain of quantification depends on ordering source

Rumor has it that John must be a genius.

modal base= rumors

ordering source: whether speaker thinks rumors are reliable.

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Rumor has it J is a genius

Context where I don't believe rumors:
no preference for worlds where
"John is a genius" is true.

Context where I believe rumors:
prefer worlds where
"John is a genius" is true.

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So, evidentials don't inherently encode anything about degree of certainty.

(And maybe they don't encode anything about value of modal operator either)

personal exp. (p) = based on personal exp, p
direct evid.(p) = based on direct ev, p
indirect ev.(p) = based on indirect ev, p
hearsay, (p) = based on hearsay, p

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Evidentials express a restriction on the modal base
default: "best possible evidence"

Context supplies the ordering source (i.e, reliability)
default: most reasonable worlds are most ideal

Modal expression quantifies over the most "ideal"
default: p is true in all worlds worlds
consistent with the best possible evidence in the most
reasonable worlds.

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Why these 4 types of restriction?

lgs. almost never distinguish more than 4
evidence types: personal experience
direct/sensory
inferential
hearsay

Suggestion (based on Pancheva):
Evidentials encode inclusion/precedence
relations between worlds/events/situations

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Relevance of evidentials to the acquisition of "Theory of Mind"

Young children (under about 4) seem not to understand that others can have beliefs that are false. They are said to "lack Theory of Mind"

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Standard False Belief task (Wellman, Pyers, deVilliers)

- Child and character are given different info about an item; child behaves as if she only understands her own beliefs.

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eg: Mom thinks/says she bought apples, but look, they're really lemons!

- What does Mom think she bought?
Child: "lemons"
- What did Mom say?
Child: "She bought lemons"

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nonverbal eg:

- Child is shown Smarties box, and shown that it really contains erasers, and pencil box that contains Smarties. Acts out character coming in and looking for candy.

Child under 4 has character go straight to pencil box.

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What don't children know?

- de Villiers has found a strong correlation between when children acquire full syntactic embedding and when they pass false belief tests.
 - a. I see Smarties in this box.
 - b. "Smarties box" = evidence that there may be Smarties in that box.
 - c. Other people might make this inference even if I know it to be wrong.
 - d. People might say things that are entirely unrelated to any evidence.

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Must vs. might (Anna)



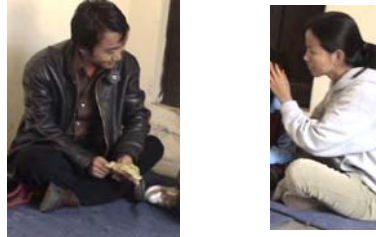
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Oscar thinks that big bird is happy (Helen)



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Our Tibetan colleagues, Tsetop and Namgyal



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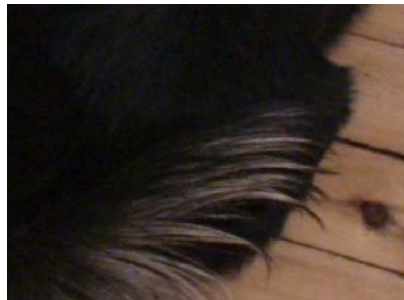
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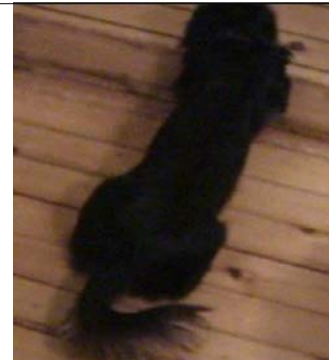
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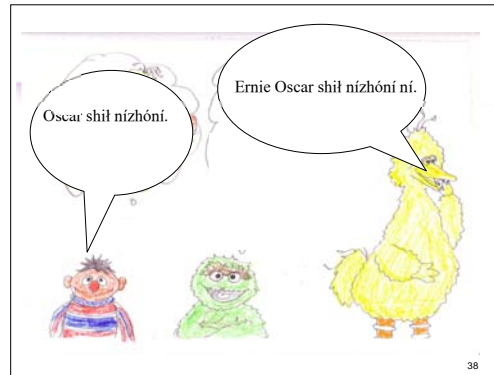


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Navajo Class



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