

Introduction

- 2 Japanese evidential/modal endings, *youda* and *darou*
- a naturalness rating study

Claim 1 *youda* and *darou* do not form a homogeneous category
youda an evidential morpheme which makes no reference to modality/probability (contra McCready and Ogata, 2007)
darou a modal expression which expresses the speaker's bias/weakened assertion.

Claim 2 The distribution is correctly predicted by optimality theoretic competition (Zeevat, 2004).

Introspection-based Data

- the pragmatic contrast between
 - “bare” declaratives (indicated by \emptyset)
 - declaratives marked with *youda*
 - declaratives marked with *darou*

- (1) Kinou John-wa wain-o takusan nonda \emptyset /darou/youda.
 yesterday John-TOP wine-ACC many drank \emptyset /DAROU/YOUDA
 ‘John drank a lot of wine yesterday.’
- Witness C: The speaker directly witnessed him drinking a lot.
 (\checkmark \emptyset /#youda/#darou)
 - Evidence C: There are a lot of empty wine bottles in John’s room.
 (# \emptyset / \checkmark youda/#darou)
 - General (no evidence) C: John likes wine very much. (# \emptyset /#youda/ \checkmark darou)

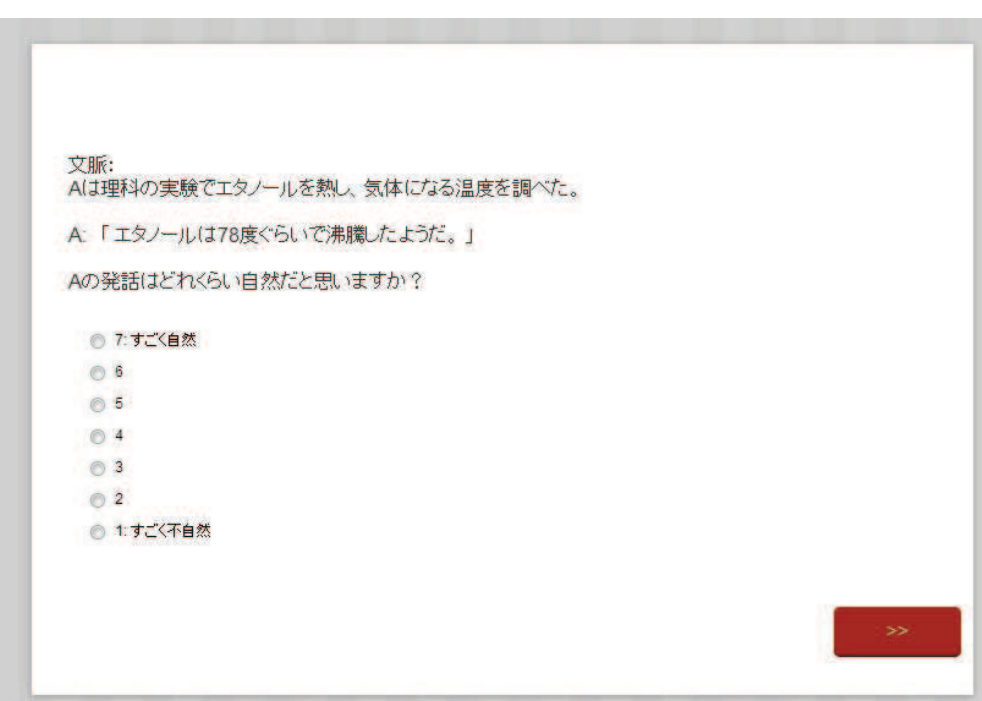
Hypothesis Type of context affects the choice of the sentence-endings.

- Similar observations in Moriyama (1992); Oosika (1995); Takubo (2009)

Experiment setup

Stimuli

- 2 fully-crossed factors
 - Contexts conveyed the types of evidence: *Witness*, *Indirect Evidence*, and *General Knowledge*
 - bare/ \emptyset , *youda*, *darou*, and *ndarou*
- 12 conditions: 12 items; plus 48 fillers.



Procedures

- Naturalness judgement of target sentences with respect to contexts on a 1-7 scale.

The participants

- 14 native Japanese speakers

Analysis

- A general linear mixed model fixed factors Contexts and sentence-endings random factors speakers and items

Hypothesis

- Type of context affects the choice of the sentence-endings.

Naturalness Rating Study: Result

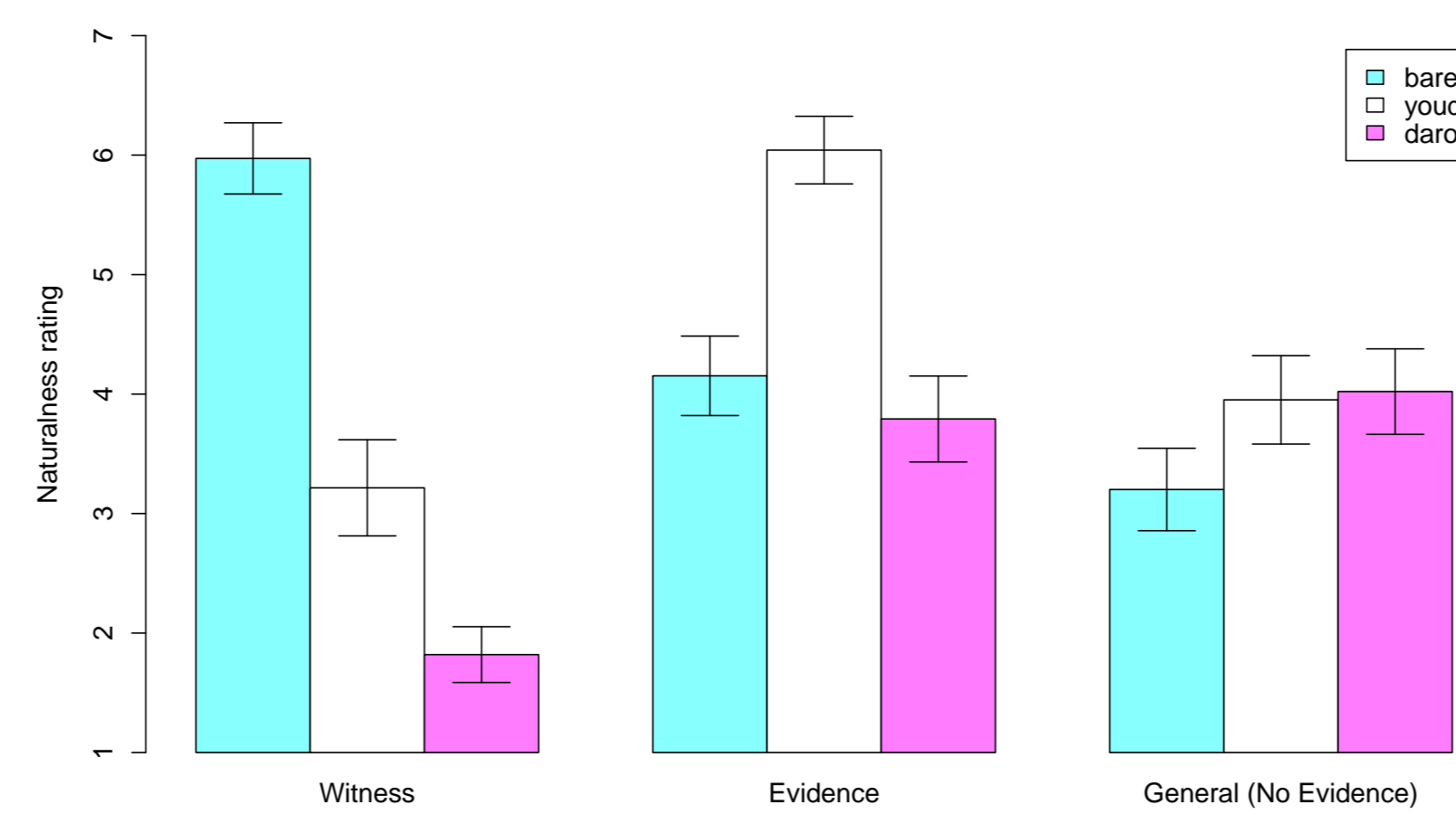


Figure : Average Naturalness Ratings

Bare the most natural in **Witness** contexts: (compared with *youda*: $t = -14.03, p < 0.001$; with *darou*: $t = -21.27, p < 0.001$).
Youda the most natural in **Evidence** contexts: (compared with bare: $t = -9.137, p < 0.001$; with *darou*: $t = -10.952, p < 0.001$).
Darou the most natural in **General** contexts: (compared with bare: $t = -4.028, p < 0.001$; with *youda*: $t = -0.296, p = 0.7672$).

Discussion

- The result partly confirms our hypothesis: Type of context affects the choice of the sentence-endings.
- p-darou* in General is not as good as bare *p* in Witness and *p-youda* in Evidence:
 - No sig. diff. for *p-darou* between Evidence and General.
 - No sig. diff. between *p-darou* and *p-youda* in General.
- Limitation of the design of the experiment: It’s hard to set up contexts where *p-darou* is felicitous.
 - The context should indicate that the speaker has a bias toward *p* yet no evidence supporting *p*.

McCready and Ogata

- McCready & Ogata (2007) propose a Bayesian modal semantics for a number of evidentials, including *youda* (but not *darou*)
- two components:

- (2) *p-youda*, relativized to agent *a*, indicates that:
- some information *e* has led *a* to raise the subjective probability of *p*
 - a* takes *p* to be **probably but not certainly true** ($.5 < P_a(p) < 1$) after learning *e*

M&O encodes the **minimal degree of subjective probability** in the semantics.

Contrast in contradiction

- p-youda* & $\neg p$ acceptable
 → no commitment (M&O’s proposal makes a wrong prediction)
- (3) Kinou John-wa wain-o takusan nonda youda kedo, jitsu-wa nondeinai
 ‘John drank a lot of wine yesterday-YOUDA, but in fact he didn’t drink any.’
- p-darou* & $\neg p$ unacceptable
 → weak commitment
- (4) *Kinou John-wa wain-o takusan nonda darou kedo, jitsu-wa nondeinai
 ‘John drank a lot of wine yesterday-DAROU, but in fact he didn’t drink any.’

Proposal: Semantics of *youda* and *darou*:

p-youda an evidential statement that asserts the existence of an event and a causal relation; no semantic commitment to *p*; pragmatic and cancellable (D&H To appear)

$$(5) \llbracket \text{youda} \rrbracket = \lambda p_{(s,t)} \lambda e'_s. \text{PERCEIVE}(a, e') \ \& \ \exists q [q(e') \ \& \ \text{CAUSE}(p, q)]$$

c.f., Conditional dependency in Takubo (2009).

p-darou a high probability modal at the semantic level; weak semantic commitment to *p*.

$$(6) \llbracket \text{darou} \rrbracket = \lambda p_{(s,t)} ..5 < P_a(p) < 1, \quad \text{where } a \text{ is the speaker.}$$

how does the evidence-less restriction of *darou* utterances come about?

- a presupposition (Hara, 2006)
- part of the lexical meaning (M&O, 2007)

Current paper: a pragmatic competition predicts the distribution.

- See also Saito (2006) for the Gricean explanation of *youda*

Pragmatic Competitions:

QUALITY the speaker’s subjective probability for *p* be close to 1. (7)

QUALITY > QUANTITY > RELEVANCE

QUANTITY militates against any weakened assertions. (8)

RELEVANCE penalizes assertion of propositions that do not address the Question under Discussion (QUD, Roberts 1996).

QUD = { <i>p</i> , $\neg p$ }	QUAL	QUANT	REL
a. \emptyset <i>p</i>			
b. <i>p-darou</i>		*!	
c. <i>p-youda</i>			*!

Any utterance of *p-darou* violates QUANTITY.

p-youda does not directly address the issue of whether *p* or $\neg p$

(9)

QUD = { <i>p</i> , $\neg p$ }	QUAL	QUANT	REL
a. <i>p</i>	*!		
b. <i>p-darou</i>		*!	
c. \emptyset <i>p-youda</i>			*

⇒ always violates RELEVANCE.

p-darou does address the issue

⇒ relevant (See also Franke & Jager, 2007). (10)

QUANTITY > RELEVANCE
 Levinson (2000): Q(uality)-principle precedes I(nformativness)- and M(anner)-principles .

QUD = { <i>p</i> , $\neg p$ }	QUAL	QUANT	REL
a. <i>p</i>	*!		
b. \emptyset <i>p-darou</i>		*	
c. <i>p-youda</i>	*!		*

Conclusion

- The Japanese evidentials do not form a homogeneous category.
- youda* expresses existence of evidence and causal relation without commitment to *p*
- darou* modalizes and weakens the assertion of *p*.
- The evidence-less condition of *darou* is not semantically encoded.
- OT competition makes the correct prediction for the distribution empirically justified by the naturalness rating study.

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