

Japanese Modal Auxiliary and Levels of Meaning

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Introduction

- Several means for conveying messages besides a mere assertion have been identified
 - epithets and speaker-oriented adverbs in English (Potts, 2003)
 - German particle *ja* (Kratzer, 1999) etc.
- It has often been discussed whether an element contributes to a propositional (assertive) level or an expressive level.
- Especially, it is still controversial whether epistemic items like modals contribute to the truth condition of the proposition or not (Faller (2002), Papafragou (2000)).

This paper will examine a Japanese modal auxiliary *darou* and argues that its modal meaning contributes not to a propositional (assertive) tier but to an expressive tier.

— slide #2

Darou

- (1) ashita kare-ga kuru **darou**.
tomorrow he-Nom come DAROU
'He will come tomorrow-*darou*.'
 - (2) **tabun** ashita kare-ga kuru.
Probably, tomorrow he-Nom come
'**Probably**, he will come tomorrow.'
 - (3) **tabun** ashita kare-ga kuru **darou**.
Probably, tomorrow he-Nom come DAROU
'**Probably**, he will come tomorrow-*darou*.'
- The Japanese sentence-final modal auxiliary *darou* has been understood as an expression that indicates a 50-80% probability of the proposition (Masuoka, 1991).
 - I re-interpret this generalization as that *p-darou* indicates the speaker's bias for *p*.

— slide #3

My Claims

- (4) a. This bias by *darou* is part of the expressive content, not of the propositional content.
b. The source of the bias is not observable evidence but epistemic reasoning/prediction.
- (5) The Interpretation of p-*darou*

Conventional Implicature (expressive meaning):

the speaker has an epistemic bias for p

($p >_{likelihood} Alt(p)$)

The bias is derived/predicted from reasoning and not from observable (direct or indirect) evidence.

— slide #4

Asymmetry

- As noted in [Sugimura \(2004\)](#), *darou* can co-occur with adverbs that indicate high probability, *tabun* ‘probably’ and *kitto* ‘certainly’
 - but *darou* cannot co-occur with a low-probability adverb, *moshikasuruto* ‘maybe’ ((6-a)).
- (6) a. kare-wa **kitto** kuru darou.
he-Top certainly come DAROU
‘Certainly, he will come-*darou*.’ ([Sugimura, 2004](#))
 - b. *kare-wa **moshikasuruto** kuru darou.
he-Top maybe come DAROU
‘Maybe, he will come-*darou*.’ ([Sugimura, 2004](#))

— slide #5

Conflict in Probability

(6-b) *kare-wa **moshikasuruto** kuru darou.
he-Top maybe come DAROU
'Maybe, he will come-*darou*.'

(Sugimura, 2004)

- *Darou* expresses that the asserted proposition is more likely than alternatives.
- Hence, it is not compatible with a low-probability adverb,
- it conflicts with the bias meaning expressed by *darou*.

— slide #6

Puzzle

'There is a possibility that...'

- However, both the auxiliary *darou* and the adverb *tabun* 'probably' are compatible with a full clausal phrase *kanousei-ga aru* 'there is a possibility that...'

- (7) a. kare-ga kuru **kanousei-ga aru** darou.
he-Nom come possibility-Nom exist DAROU
'There is a possibility that he would come-*darou*.'
- b. tabun kare-ga kuru **kanousei-ga aru**.
probably he-Nom come possibility-Nom exist
'Probably, there is a possibility that he would come.'

— slide #8

Sharper contrast

- The contrast can be made even sharper.

- (8) a. kare-ga kuru kanousei-ga **sukunai** darou.
he-Nom come possibility-Nom little DAROU
'the possibility that he would come is **small-darou.**'
- b. tabun kare-ga kuru kanousei-ga **sukunai.**
probably he-Nom come possibility-Nom little
'Probably, the possibility that he would come is **small.**'

— slide #9

Summary of the puzzle

- *Darou* cannot co-occur with an adverb of low possibility *moshikasuruto* 'maybe'
- The speaker's bias indicated by *darou* conflicts with a mere possibility expressed by *moshikasuruto* 'maybe'
- *Darou* can co-occur with a clausal counterpart, namely *kanousei-ga aru* 'there is a possibility that...'

— slide #10

Assertive/Expressive Tier

Assertive/Expressive

- **Proposal** the bias meaning of *darou* and adverbs like *tabun* ‘probably’, *kitto* ‘certainly’ and *moshikasuruto* ‘maybe’ are expressives (i.e. they express the speaker’s judgment of probability).
- Different degrees of certainty (e.g. 40% and 80%) are compatible as long as one is stacked on top of the other.
- The incompatibility arises only when both the adverb and *darou* contribute different levels of certainty **to the expressive tier**.

— slide #12

Different tiers

- *darou* can co-occur with a pure assertive expression as in (7)
 - the low possibility and the bias are represented in **different** tiers.
 - low possibility: assertive
 - bias: expressive
- (7) a. kare-ga kuru kanousei-ga aru darou.
he-Nom come possibility-Nom exist DAROU
‘There is a possibility that he would come-*darou*.’
- b. tabun kare-ga kuru kanousei-ga aru.
probably he-Nom come possibility-Nom exist
‘Probably, there is a possibility that he would come.’

— slide #13

Different tiers

[There is a possibility that he would come]-*darou*

Darou(There is a possibility that he would come.)

— slide #14

Conflict in the same tier

- On the other hand, *darou* with *moshikasuruto* causes a conflict in meaning.
- each represents a different degree of certainty in the **same expressive** tier.

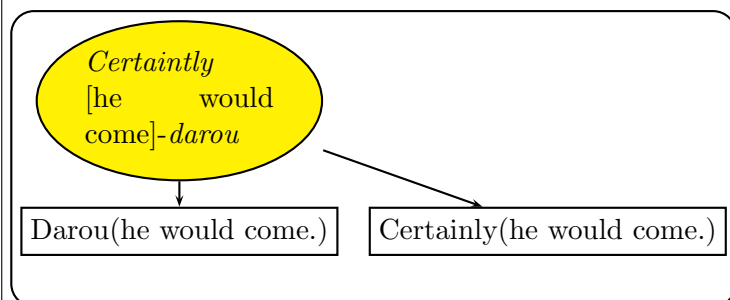
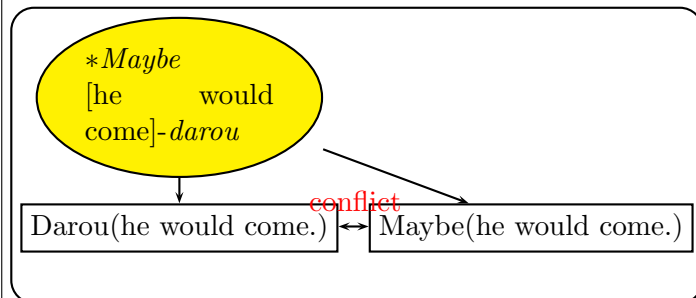
(6-b) *kare-wa moshikasuruto kuru darou.
he-Top maybe come DAROU
'Maybe, he will come-*darou*.'

(Sugimura, 2004)

- This sets up my first claim (4-a): the bias by *darou* is part of the expressive content, not of the propositional content.

— slide #15

Two chunks in the expressive tier



— slide #16

Distributional Difference

- This difference of assertive/expressive meanings is found distributionally in another context.
- *Darou* and expressive adverbs cannot be embedded in a nominal complementizer *koto*

(9) **watashi-wa kare-ga kuru darou koto-o shinji-teiru.*
I-Top he-Nom come DAROU thing-Acc believe-Prog
'I believe that he will probably come-*darou*.'

(10) **watashi-wa kare-ga kitto/tabun/moshikasuruto kuru koto-o shinji-teiru.*
I-Top he-Nom certainly_e/probably/maybe come thing-Acc believe-Prog
'I believe that he will certainly_e/probably/maybe come.'

— slide #17

Distributional Difference

- on the other hand, the propositional adverb *kanarazu* (Sugimura 2004) and *kanousei-ga aru* ‘there is a possibility that...’ can.

- (11) a. watashi-wa kare-ga **kanarazu** kuru koto-o shinji-teiru.
I-Top he-Nom certainly_a come thing-Acc believe-Prog
‘I believe that he will certainly_a come.’
- b. kare-ga kuru **kanousei-ga aru** koto-o shinji-teiru.
he-Nom come possibility-Nom exist thing-Acc believe-Prog
‘I believe that there is a possibility that he would come.’

— slide #18

More on embedding

- (12) a. nankan-no shiken-ni gookaku suru daroo **Tanaka-kun**
competitive exam-Dat pass do DAROU Tanaka-Mr.
‘Mr. Tanaka, who will pass the competitive exam-*darou*’ (Masuoka, 1991)
- b. ?nankan-no shiken-ni gookaku suru daroo **jukensei**
competitive exam-Dat pass do DAROU examinee
‘an examinee who will pass the competitive exam-*darou*’ (Masuoka, 1991)
- c. ?nankan-no shiken-ni gookaku suru daroo **zen’in**
competitive exam-Dat pass do DAROU everyone
‘everyone who will pass the competitive exam-*darou*’

— slide #19

Expressives (Potts 2003)

Potts (2003) proposes that supplements (appositives, non-restrictive relatives etc.) introduce a different dimension of meaning and express the speaker's comment.

(13) Lance Armstrong, who is an Arkansan, won the 2002 Tour de France. (Potts, 2003)

- At-issue entailment: Lance Armstrong won the 2002 Tour de France.
- The speaker's comment by the supplementary relative (Expressive meaning):
Lance Armstrong is an Arkansan.

— slide #20

Supplements: Independent meanings

(14) It is false that Lance Armstrong, who is an Arkansan, won the 2002 Tour de France.

- $\neg(\text{LA won the 2002 Tour de France}) \wedge \text{LA is an Arkansan}$
- it never means:
 - $\neg(\text{LA won the 2002 Tour de France} \wedge \text{LA is an Arkansan})$
 - $\neg(\text{LA won the 2002 Tour de France}) \wedge \neg(\text{LA is an Arkansan})$

— slide #21

Darou and Supplements

?? nankan-no shiken-ni gookaku suru daroo Tanaka-kun
competitive exam-Dat pass do DAROU Tanaka-Mr.

‘Mr. Tanaka, who will pass the competitive exam-*darou*’

(Masuoka, 1991)

- Supplementary relatives can host *darou*.
- since they are not embedded clauses but separate matrix clauses in the expressive tier.

— slide #22

Interim summary

- An epistemic bias indicated by *darou* contributes not to the propositional level of meaning but to the expressive level of meaning.
 - The bias meaning of *darou* shows a conflict in possibility only with an expressive adverb. (it’s compatible with a propositional one)
 - *Darou* cannot be embedded under a nominal complementizer.
 - *Darou* can appear in supplementary relative clauses which also contribute to expressive meanings.

— slide #23

Prediction/Inference from Evidence

Modal meaning

- I have argued that *darou* introduces the speaker's epistemic bias toward the asserted proposition.
- The next question pertains to what is the exact meaning of the modal-flavor contributed by *darou*.
- Especially, how is this bias derived?

- (15) a. ashita kare-ga kuru darou.
tomorrow he-Nom come DAROU
'he will come tomorrow-*darou*.' (1)
- b. ashita kare-ga kuru.
tomorrow he-Nom come.
'He will come tomorrow.'

— slide #25

Kratzer (1991)

- modal: a quantification over epistemic possible worlds.

- (16) a. $\llbracket \text{might} \phi \rrbracket^{c,i} = 1$ iff $\exists w' \in f_c(i) : \llbracket \phi \rrbracket^{c, \langle w', t_i \rangle} = 1$
b. $\llbracket \text{must} \phi \rrbracket^{c,i} = 1$ iff $\forall w' \in f_c(i) : \llbracket \phi \rrbracket^{c, \langle w', t_i \rangle} = 1$
(von Stechow and Gillies' (2005) reformulation of Kratzer (1991))

c the context of utterance

i the index of evaluation (a world-time pair)

$f_c(i)$ the set of worlds compatible with what is known in i

— slide #26

Quantification

(5) The Interpretation of *p-darou*

Conventional Implicature (expressive meaning): the speaker has an epistemic **bias** for p ($p >_{\text{likelihood}} \text{Alt}(p)$)
The bias is derived/predicted from reasoning and not from observable (direct or indirect) evidence.

- The quantificational force of *darou* is 50 % up.
- *Darou* is compatible with its conventional implicature, the speaker believes the proposition is more likely than the alternative.

(6-a) kare-wa kitto kuru darou.
he-Top certainly come DAROU
'Certainly, he will come-*darou*.'

(Sugimura, 2004)

— slide #27

Modal Base: evidence-less

- *darou* contributes to the communication background,
- i.e. it restricts its modal base.
- The speaker does not have observable evidence for the propositional content.
- Modal base(Quantificational Domain):
possible worlds which are compatible with the speaker's **generalization** of the world
- i.e. it does NOT include inferences drawn from particular **observable** facts

— slide #28

Examples

(17) Prediction

- a. Context: John likes wine very much.
- b. Kinou John-wa wine-o takusan nonda darou.
yesterday John-Top wine-Acc many drank DAROU
'John drank a lot of wine yesterday-*darou*.' (Translation of Izvorski's (1997) example)

(18) Direct Evidence

- a. Context: The speaker saw John drinking last night.
- b. #Kinou John-wa wine-o takusan nonda darou.
yesterday John-Top wine-Acc many drank DAROU
'John drank a lot of wine yesterday-*darou*.'

(19) Indirect Evidence

- a. Context: There are a lot of empty wine bottles in John's room.
- b. #Kinou John-wa wine-o takusan nonda darou.
yesterday John-Top wine-Acc many drank DAROU
'John drank a lot of wine yesterday-*darou*.'

— slide #29

Prediction/Inference from Evidence

- *darou* can be attached to the prediction derived by epistemic reasoning.
- On the other hand, *darou* cannot be used when evidence is available for the proposition.
 - The distinction I am making here is not between direct and indirect evidence.
 - Rather, it is between prediction from generalization on one hand and observable evidence (including direct and indirect) on the other.

— slide #30

More examples

(20) Prediction

- a. Context: It has been seven years since I broke up with my ex-girlfriend. (Morimoto, 1994)
- b. kanojo-wa mou kekkon-shita darou.
she-Top already marriage-did DAROU
'She is married by now-*darou*.'

(21) Indirect Evidence

- a. Context: My ex-girlfriend's last name on the alumni phonebook has changed. (Morimoto, 1994)
- b. #kanojo-wa mou kekkon-shita darou.
she-Top already marriage-did DAROU
'She is married by now-*darou*.'

— slide #31

First Person

- In many cases *darou* cannot be used with a first person pronoun.
- Since the speaker is asserting his/her decision on their actions, it does not make sense to indicate the speaker's judgement on its probability.

(22) #watashi-wa ashita party-ni iku darou.
I-Top tomorrow party-to go DAROU.
'I will go to the party tomorrow-*darou*.'

- *Darou* with a first person is possible if the speaker does not have a control over his/her action as in (20).

(23) ashita kare-ni at-ta ato, watashi-wa naku darou.
tomorrow he-Dat meet-Past after, I-Top cry DAROU.
'After I meet him tomorrow, I will cry-*darou*.'

— slide #32

Doumo ‘somewhat/somewhat’

- Morimoto (1994) showed that *Doumo* ‘somewhat/somewhat’ presupposes that the speaker actually saw the evidence of the propositional content.

(24) kato-san-no musuko-wa **doumo** chiisai.
Kato-Mr-Gen son-Top somewhat small

(Morimoto, 1994)

‘Mr. Kato’s son is somewhat small.’

Presupposition: The speaker actually saw Mr. Kato’s son (in person or in picture)

- *Doumo* cannot co-occur with *darou*, since its presupposition and the expressive content of *darou* conflict each other.

(25) #**doumo** kouteibuai-ga 1-percent agaru **darou**.
somewhat official-discount-rate-Nom 1-percent rise probably

(Takubo, 2001)

‘The official discount rate will somehow rise by 1 percent-*darou*.’

— slide #33

Summary

(5) The Interpretation of p-*darou*

Conventional Implicature (expressive meaning): the speaker has an epistemic bias for

p ($p > \text{likelihood Alt}(p)$)

The bias is derived/predicted from reasoning and not from observable (direct or indirect) evidence.

- Modal base(Quantificational Domain):
possible worlds which are compatible with the speaker’s generalization of the world
- This sets up my second claim (4-b): the source of the bias is not observable evidence but epistemic prediction.

— slide #34

Concluding Remarks

- The Japanese modal auxiliary *darou* conveys an expressive meaning that the speaker has a bias toward the asserted proposition.
- This bias is based on the speaker's predictions without evidence.
- Further research is needed to identify the exact nature of evidence and the quantificational domain of the modal-flavor that *darou* introduces.

— slide #35

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