

Bayesian Dynamic Pragmatics:



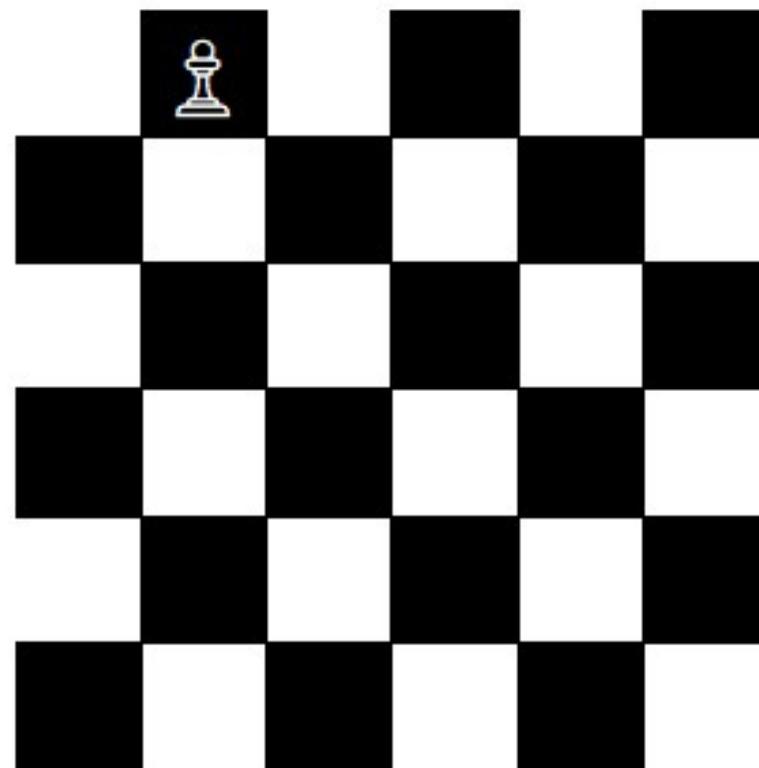
Pragmatics and semantics
of Japanese politeness
encodings

Akitaka Yamada

Workshop on modality and related matters

Date: 2019/9/19

Location: Second Floor, NINJAL



0. Introduction of myself

- Univ. of Tokyo 2008-2014
- Georgetown Univ. 2014-2019

Research interests:

- Theoretical Linguistics:
 - ✓ 1. Semantics/pragmatics: Primary domain
 - 2. Morphology: Sometimes
 - 3. Syntax: Sometimes
- Usage-based studies
 - 1. Corpus-linguistics: Almost always
 - 2. Experimental studies: I'd love to but not yet.
 - ✓ 3. Statistics: Yes, I do!

Dissertation:

- Thesis advisor: Paul H. Portner
- Committee members: Satoshi Tomioka
Ruth Kramer
Amir Zeldes
- Topic: Japanese addressee-honorifics

Today's topic:

- **Bayesian dynamic pragmatics**



1 DYNAMIC PRAGMATICS

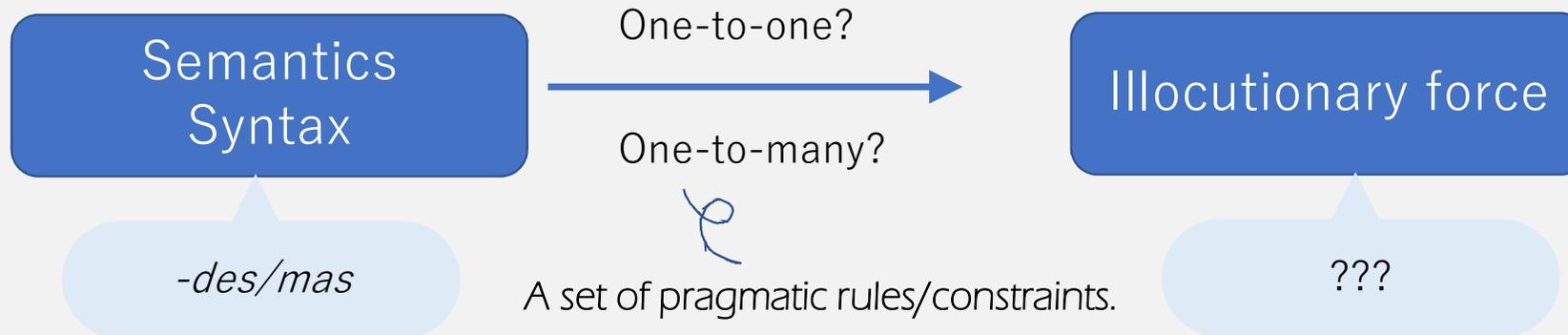


1. Dynamic pragmatics

Content and force

Content	Force	
	Sentential force meanings associated with sentence types (e.g., declaratives and interrogatives)	Illocutionary (utterance) force meanings associated with social acts (e.g., promise, wish, entreaty)

(2) a. Soldiers, **march!** [COMMAND] b. **Have** some beer! [OFFER] c. **Help** me! [ENTREATY]



1. Dynamic pragmatics

Expressiveness

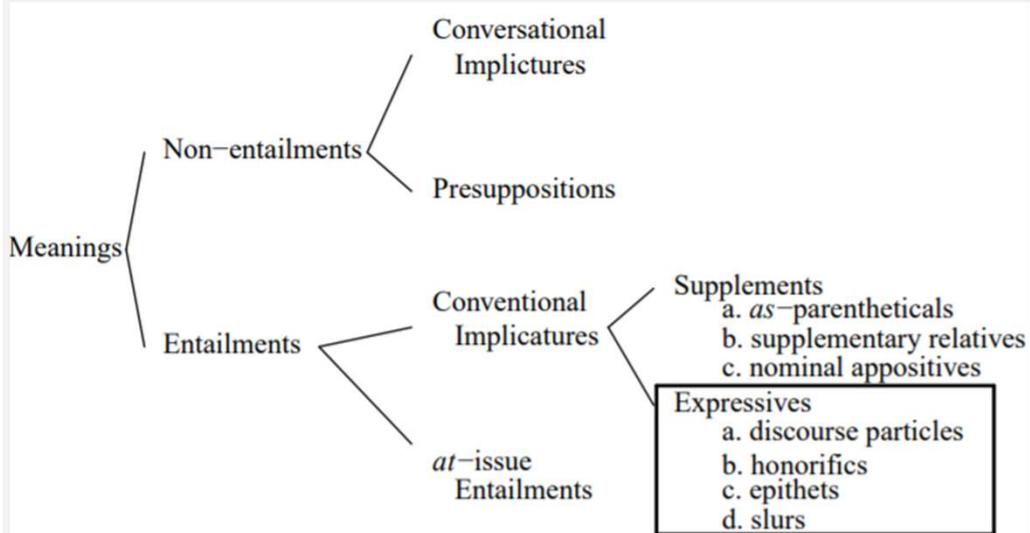


Figure 4.1: Classification of meanings proposed by Potts (2003)

a. Referent honorifics (Japanese)

Tomioka-sensei-ga irassyar-u.

Tomioka-teacher-NOM come.HONS-PRS

‘(i) Prof. Tomioka will come;

(ii) The speaker respects Prof. Tomioka.’

b. Expressive attributive adjectives (Cruse 1986:272; Potts 2003: 205)

Shut that **blasted** window!

c. Particles (German; Krazter 2004)

Du hast ja 'n Loch im Armel.

You have PRT a hole in.DET sleeve

‘(i) There is a hole in your sleeve;

(ii) The proposition in (i) is well-known.’

d. Epithets (Lebanese Arabic; Aoun et al. 2001:385; Potts 2003: 3)

saami ha-l-maʒduub næse l-mawʕad

Sami 3-the-idiot.SM forgot.3.SM the-appointment

‘Sami, this idiot, forgot the appointment.’

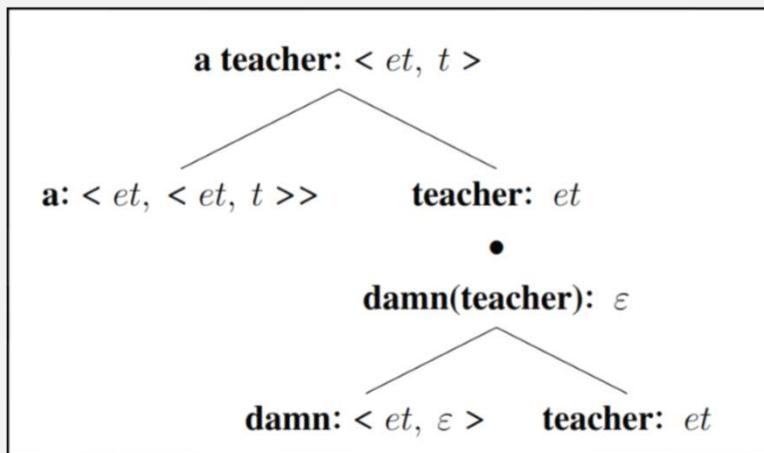
e. Slurs (Cepollaro 2015: 36)

Bianca is a **wop**.

1. Dynamic pragmatics

Meaning (1) Interval-based approach

[A **damn** teacher] came in.



Context

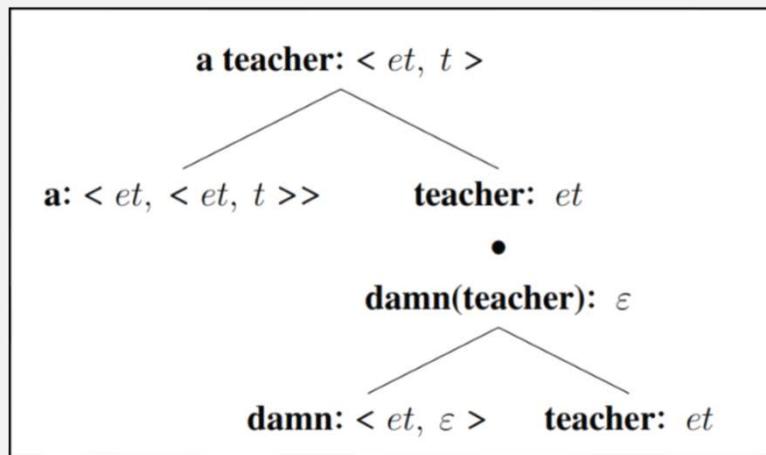
$c^{old} = \langle dc_a, dc_b, tdl, qs, \dots, \mathbf{expr} \rangle$

$c^{new} = \langle dc_a, dc_b, tdl, qs, \dots, \mathbf{expr}^* \rangle$

1. Dynamic pragmatics

Meaning (1) Interval-based approach

[A **damn** teacher] came in.



Context

$$c^{old} = \langle dc_a, dc_b, tdl, qs, \dots, \mathbf{expr} \rangle$$

$$\left\{ \begin{array}{l} \langle a, [0.3, 0.9], b \rangle, \\ \langle a, [0.4, 0.9], c \rangle, \\ \vdots \end{array} \right\}$$

$$\langle a, [0.5, 0.6], c \rangle$$

Context update

$$C + Hon(S) = C'$$

$$\text{where } C' = \begin{cases} C, & \text{if } C \sqsubseteq Hon(S) \\ \left[\frac{3 \times \mathcal{R}_{lower} + Hon(S)}{4}, \frac{3 \times \mathcal{R}_{upper} + Hon(S)}{4} \right], & \text{otherwise} \end{cases}$$

$$c^{new} = \langle dc_a, dc_b, tdl, qs, \dots, \mathbf{expr}^* \rangle$$

$$\left\{ \begin{array}{l} \langle a, [0.3, 0.9], b \rangle, \\ \langle a, [0.5, 0.6], c \rangle, \\ \vdots \end{array} \right\}$$

1. Dynamic pragmatics

Meaning (1) Interval-based approach

Example: McCready (2014, 2019)

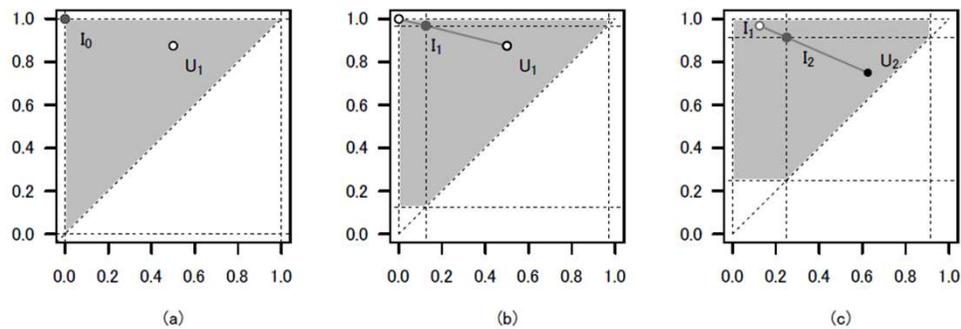


Figure 3 Context updates in McCready (2014): the appropriateness condition.

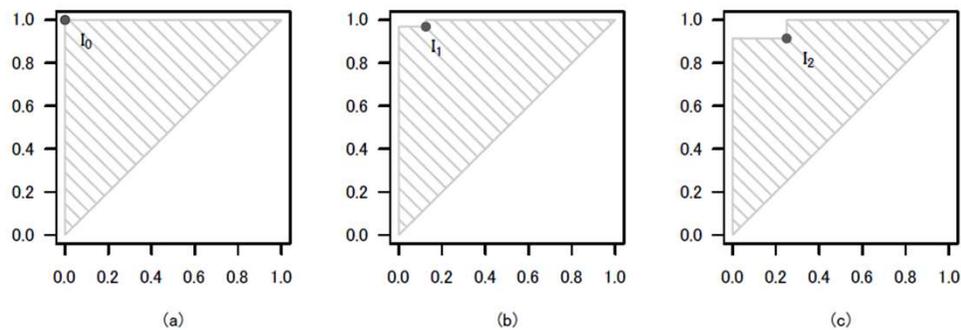


Figure 4 Context updates in McCready (2014): the context-update condition.

Context

$$c^{old} = \langle dc_a, dc_b, tdl, qs, \dots, \mathbf{expr} \rangle$$

$$\left\{ \begin{array}{l} \langle a, [0.3, 0.9], b \rangle, \\ \langle a, [0.4, 0.9], c \rangle, \\ \vdots \end{array} \right\}$$

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1. Dynamic pragmatics

A simulation study

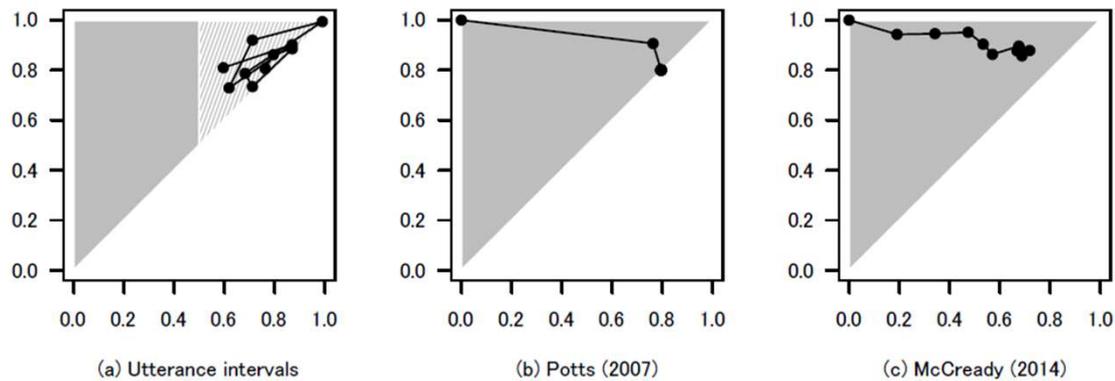


Figure 5 Simulation results (I).

Utterance Intervals	Potts (2007)	McCready (2014)
	[0, 1],	[0, 1]
1 [0.7629, 0.8061],	[0.7629, 0.9066],	[0.1907, 0.9428]
2 [0.795, 0.8615],	[0.795, 0.8003],	[0.3418, 0.9457]
3 [0.8703, 0.8853],	[0.795, 0.8003],	[0.4739, 0.9512]
4 [0.7121, 0.7342],	[0.795, 0.8003],	[0.5335, 0.9038]
5 [0.6823, 0.787],	[0.795, 0.8003],	[0.5707, 0.8631]
6 [0.9899, 0.9938],	[0.795, 0.8003],	[0.6755, 0.8959]
7 [0.7119, 0.9199],	[0.795, 0.8003],	[0.6846, 0.8801]
8 [0.619, 0.729],	[0.795, 0.8003],	[0.6682, 0.8773]
9 [0.87, 0.902],	[0.795, 0.8003],	[0.7187, 0.8786]
10 [0.5962, 0.8096],	[0.795, 0.8003],	[0.6881, 0.8569]

2 Contribution of politeness markers



2. Contribution of politeness markers

Obs 1. Cumulative effect

Cumulative effect: The honorific attitude depends not only on the honorific meaning of the most recent utterance but also on the utterances produced in the prior context.

Ore zyugyoo-nante de-taku nai-yo.
I class-TOP attend-want NEG-SFP

‘I do not want to attend the class.’

Kagaku-no sensei-no hanasi tumannai-si.
chemistry-NOM teacher-GEN speech boring-SFP

‘What the chemistry teacher teaches us is boring.’

Geemu si-te r-u hoo-ga zutto masi.
game do-CV PRG-PRS way-NOM far better

‘Playing video game is far better.’

Ore ie-ni kaeri-mas-u.
I home-to return-HON_A-PRS
‘I will go home.’

Even though the last word we hear is *-mas*, we do not think the speaker has ‘respect’ to the addressee.

-> This is because we also know what **the past states** were like.

$C^1 > C^2$

$C^1 > C^2 > C^3$

$C^1 > C^2 > C^3 > C^4$

Local update

$C^1 > C^2 > C^3 > C^4 > C^5$

Somehow remember what they were like.

2. Contribution of politeness markers

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Cumulative effect: The honorific attitude depends not only on the honorific meaning of the most recent utterance but also on the utterances produced in the prior context.

Even though the last word we hear is *-mas*, we do not think the speaker has 'respect' to the addressee.

-> This is because we also know what **the past states** were like.

Scenario A: *Previously, the speaker A had produced sentences with low range of intervals, such as [.2, .5], [.3, .4], ..., and [.2, .3]. However, at one moment, he shifts to a high register and the context interval of the immediate context is set to [.75, .8], for example. This scenario mimics the situation where the speaker A is a dissolute student and the addressee is his homeroom teacher. He usually does not use addressee-honorific markers. But, one day, for some reason, he talked to the teacher in a very polite manner, which enhanced the register to a very polite range.*

Scenario B: *Previously, the speaker A had produced sentences with a relatively high range of intervals, such as [.9, 1.0], [.8, .9], ..., and [.7, 1.0]. And now the context interval is set to [.75, .8] This mimics the situation where the speaker is a very diligent student who has shown very high respect to the addressee, his homeroom teacher. But one day, he slightly changed his respect-paying manner and shifted from a very high respect to a mode in which he mildly respects the teacher but not too high, for example, to show that he feels bonded with the teacher.*

2. Contribution of politeness markers

Obs 2. Learnability

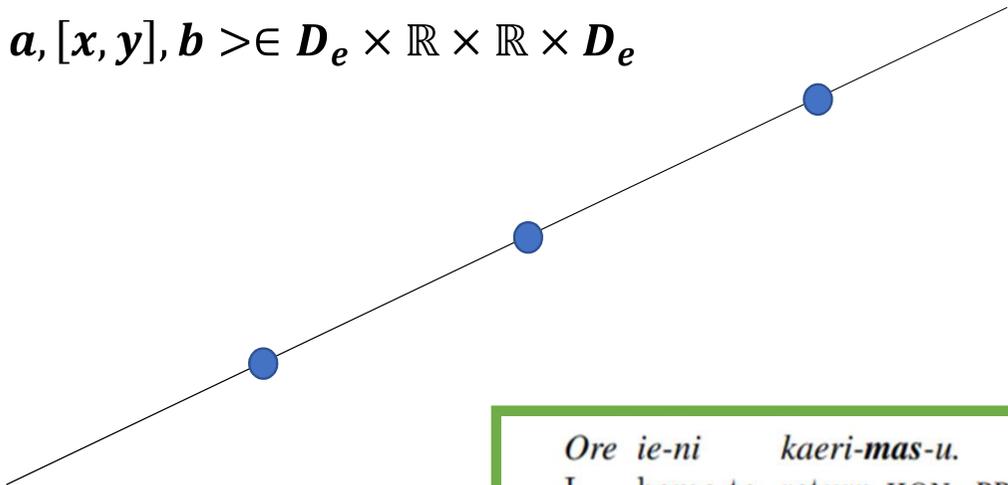
Learnability: The denotation of addressee-honorific markers must be uniquely identified.

Even though the last word we hear is *-mas*, we do not think the speaker has 'respect' to the addressee.

-> This is because we also know what **the past states** were like.

Reals: contiunity

$\langle a, [x, y], b \rangle \in D_e \times \mathbb{R} \times \mathbb{R} \times D_e$



Ore ie-ni kaeri-mas-u.
I home-to return-HON_A-PRS
'I will go home.'

$\langle a, [0.5, 0.9], b \rangle$

$\langle a, [0.51, 0.9], b \rangle$

$\langle a, [0.511, 0.9], b \rangle$

$\langle a, [0.5, 0.89], b \rangle$

$\langle a, [0.5, 0.899], b \rangle$

$\langle a, [0.5, 0.899], b \rangle$

$\langle a, [0.5, 0.901], b \rangle$

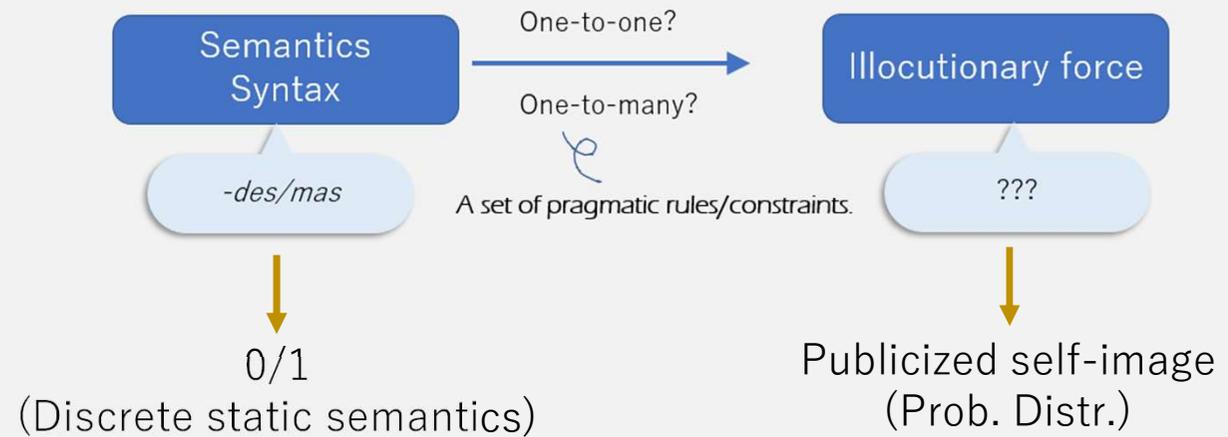
3 Bayesian dynamic pragmatics



3. Bayesian dynamic pragmatics

Summary parameter

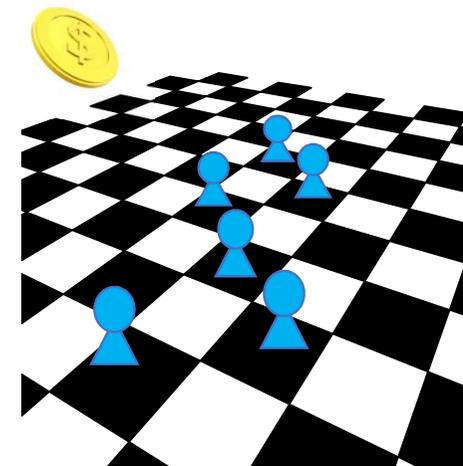
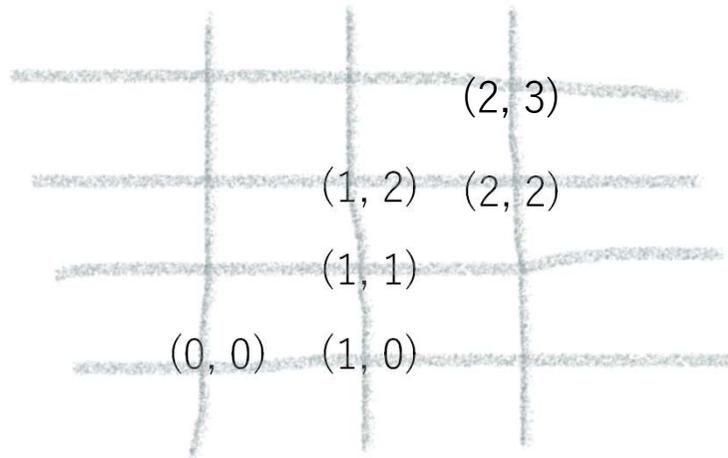
- (65) a. $c = \langle cs, qs, tdl, h, \dots \rangle$
b. $h = (\alpha, \beta)$



Example

(1, 2)

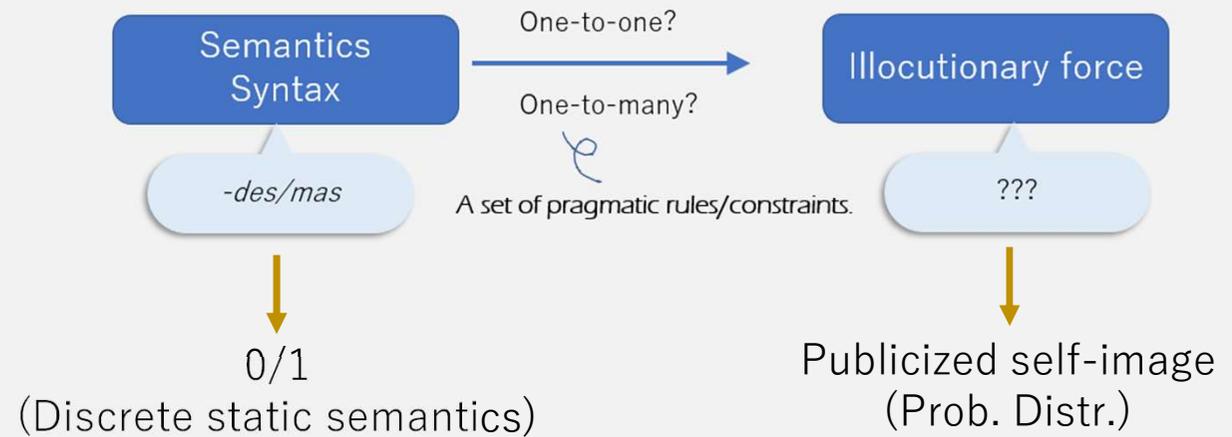
(0, 1 2 3 4)



3. Bayesian dynamic pragmatics

Summary parameter

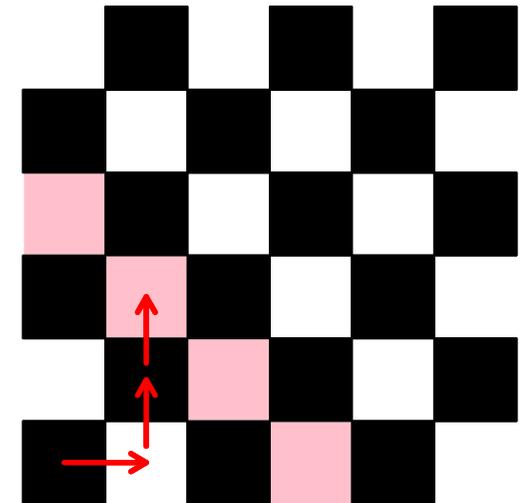
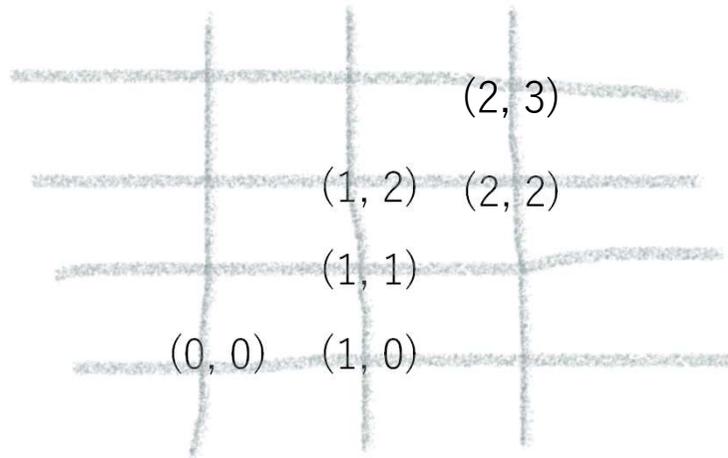
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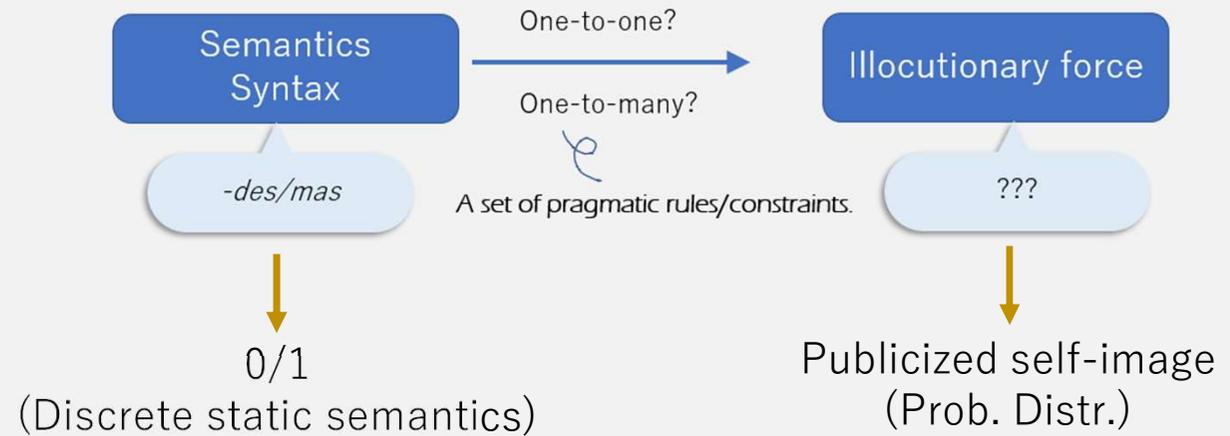
(0, 1 2 3 4)



3. Bayesian dynamic pragmatics

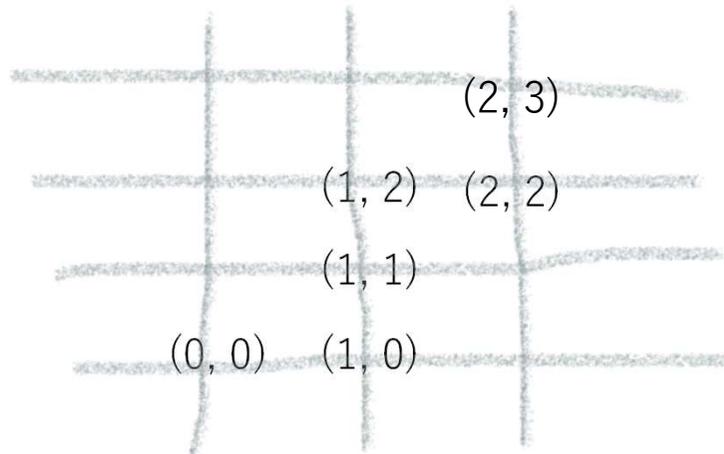
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Example

- (1, 2)
 (0, 1 2 3 4)



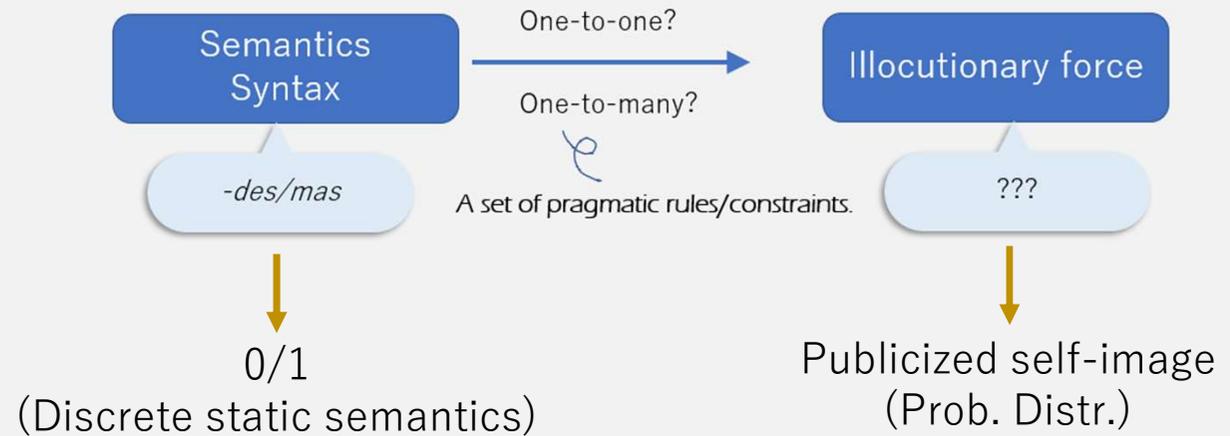
Interpretation

1. **From the audience's viewpoint,** h can be understood our **uncertainty** about the speaker's consistency of using *-des/mas*.
2. **From the speaker's viewpoint,** the speaker performatively updates/creates his **publicized self-image**.

3. Bayesian dynamic pragmatics

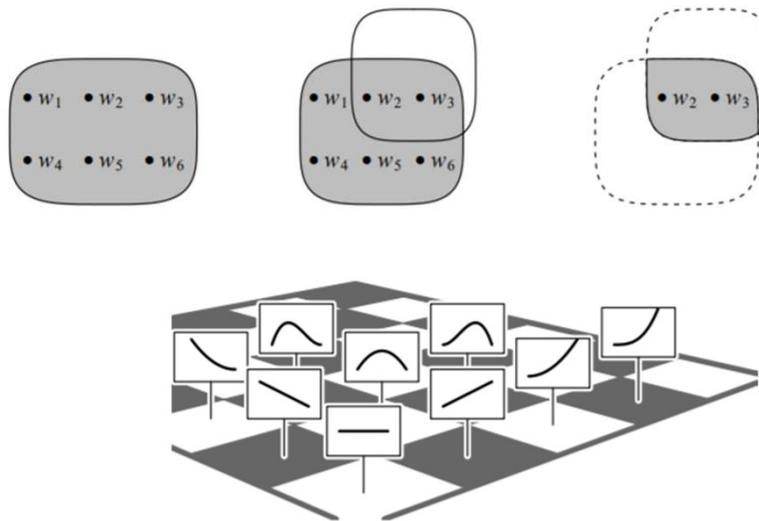
Summary parameter

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 b. $h = (\alpha, \beta)$



Example

- $(1, 2)$
 $(0, 1234)$



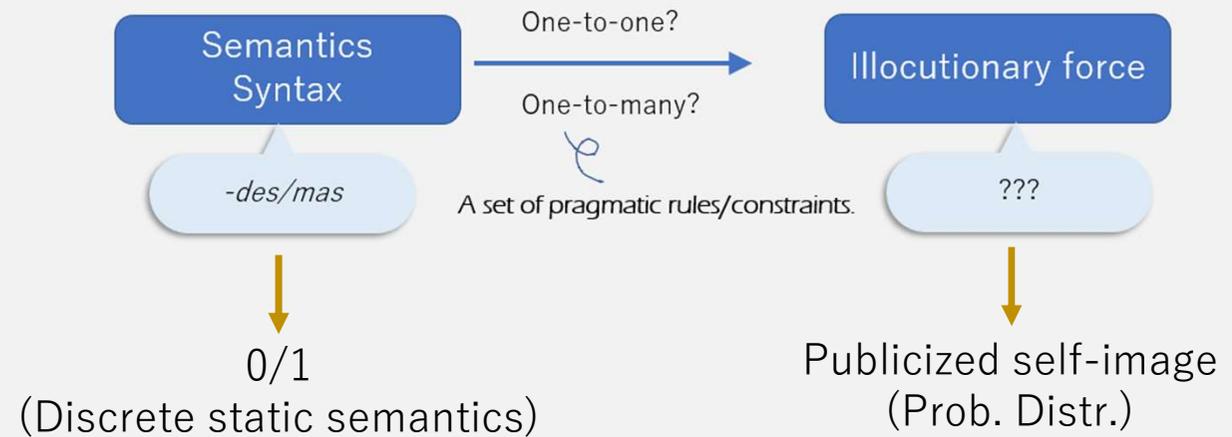
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3. Bayesian dynamic pragmatics

Summary parameter

- (65) a. $c = \langle cs, qs, tdl, h, \dots \rangle$
b. $h = (\alpha, \beta)$



Dynamic pragmatics to machine learning

1. Beyond the expressive elements, there are no comparable language phenomena. Right now, very few chances to use.
2. Computational semantics

Thank you for your listening!

