Scope and Prosody in the Japanese Contrastive Topic Construction

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Workshop on Prosody, Syntax, and Information

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Outline

Contrastive Topic versus Bare Focus

Who passed the test?

a. **Ken**-wa ukatta
   Ken-WA passed
   "(At least) Ken passed."

b. **Ken**-ga ukatta
   Ken-NOM passed
   "(Only) Ken passed."

- Focus + Nominative case marking = Exhaustive Interpretation
- Focus + *wa* = "Weakly" Exaustive Interpretation

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Occurrence Across Clause Types

a. **Interrogative**

. . . zyaa	**Erika**-wa	doko-e	itta	no?
well	Erika-WA	where-to	went	Q

". . . well then, where did **Eri**ka go?"

b. **Imperative**

eigo-wa	chanto	yatte-ok-e
English-WA	without.fail	do-prepare-IMP

"At least, prepare yourself for **Eng**lish."

c. **Exhortative**

Kyouto-ni-wa	iko-u
Kyoto-to-WA	go-HORT

"At least, let's go **Kyo**to."

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Variety of Implicatures

Who passed?

Ken-wa ukatta
Ken-WA passed

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- *Ignorance*: Doesn't know whether other people passed.
- *Secrecy*: Is not at liberty to say whether other people passed.
- *Coyness*: Teases the hearer by withholding information.
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- Syntactic Representation of "Speech Act" Operators [Krifka(2001)]
- Focus on CT generates semantic alternatives.
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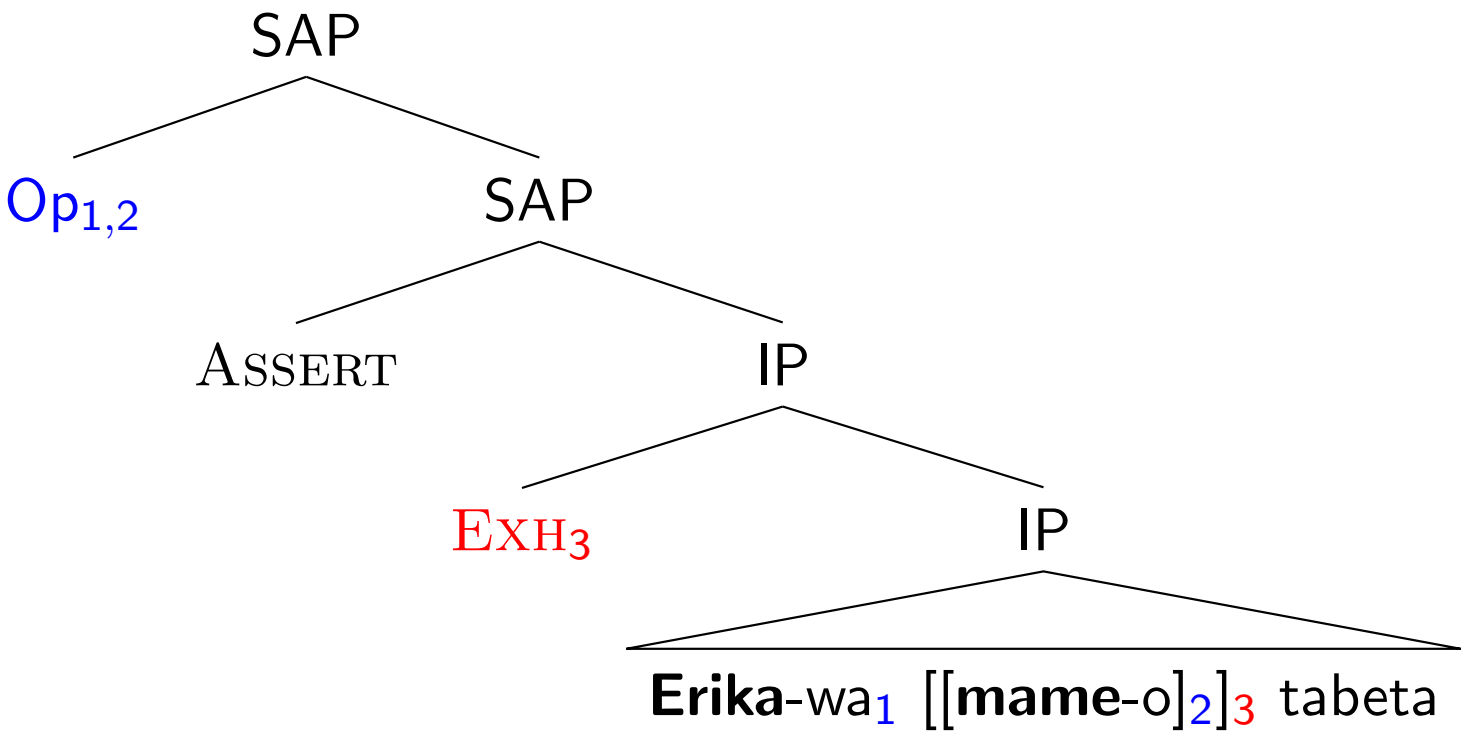
Tomioka's Model



Getting the Right Scope

- The Scope Theory of Contrastive *wa* depends on the *wa*-marked constituent escaping exhaustification by the lower operator.
- Tomioka suggests that *wa*-marking serves to mark this high-scope property.
- But it is unclear (to me) how this can be achieved mechanically.
- What prevents other indexing possibilities?

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Locality Restrictions

The attachment site of *wa* obeys island constraints, in particular *adjunct islands* and *complex NP* islands. [Hara(2006)]

Adjunct Islands

(1) a. * itsumo [uchi-ni **John**-wa kita toki], inu-ga
always house-to John-WA came when dog-NOM
hoe-ru
bark-NONPAST
"When at least **John** comes over, the dog always barks."

b. * kinou [**John**-wa uchi-ni kuru mae],
yesterday John-WA house-to come before
daremo i-nanak-ta
anyone be-NEG-PAST
"Before at least **John** came to our house, no one was home."

Adjunct Islands

(2) a. itsumo [uchi-ni **John**-ga kita toki] **-wa**
always house-to John-NOM came when WA
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"Before at least **John** came to our house, no one was home."

Complex NP Islands

(3) a. * itsumo [**Chomsky**-wa kai-ta hon]-ga
always Chomsky-WA write-PAST book-NOM
shuppan sa-re-ru
publish do-PASS-NONPAST
"Books that at least **Chomsky** writes are always published."

b. itsumo [**Chomsky**-ga kai-ta hon] **-wa**
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"Books that at least **Chomsky** writes are always published."

Locality Restrictions

With the in-situ analysis of CT *wa*, the island data are not explained, since other kinds of in-situ focused items are *not* island sensitive.

Locus of Focus within the *wa*-marked Constituent

When *wa* attaches to a complex constituent, the interpretation depends on prosodic focus, as noted by [Komagata(1998)].

Example Context

Imaizumi and Furuhata just returned from Okinawa with some local alcohol, and the speaker was at a drinking party with them.

Imaizumi brought back awamori and snake-liquor.

Furuhata brought back a different kind of awamori and some local beer.

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Subject Focus + *wa*

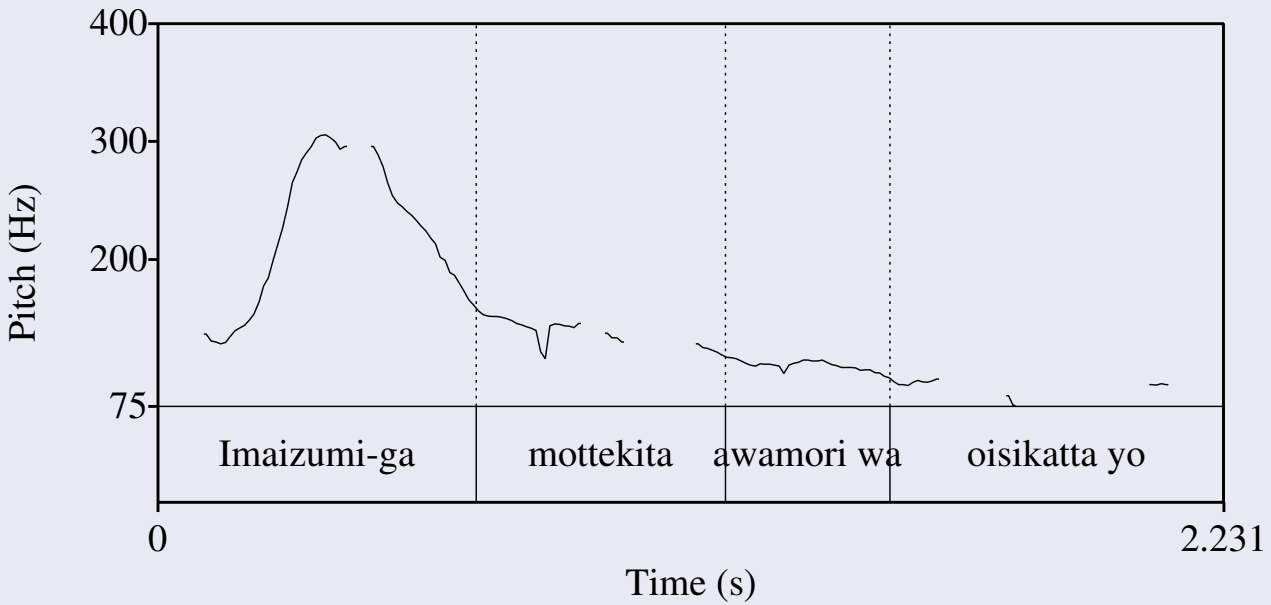
How was the Awamori?

[**Imaizumi**-ga mottekita awamori] -wa oisikatta yo
Imaizumi-NOM brought awamori WA tasty

"The awamori that **Imaizumi** brought was good."
(Does not commit to the awamori that Furuhata brought)

Focus in the *wa*-marked Constituent

Subject Focus + *wa*



play

Object Focus + *wa*

How were the drinks Imaizumi brought?

[Imaizumi-ga mottekita **awamori**] -wa oisikatta
Imaizumi-NOM brought awamori WA tasty
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"The **awamori** that Imaizumi brought was tasty."
(Does not commit to the snake-liquor that Imaizumi brought.)

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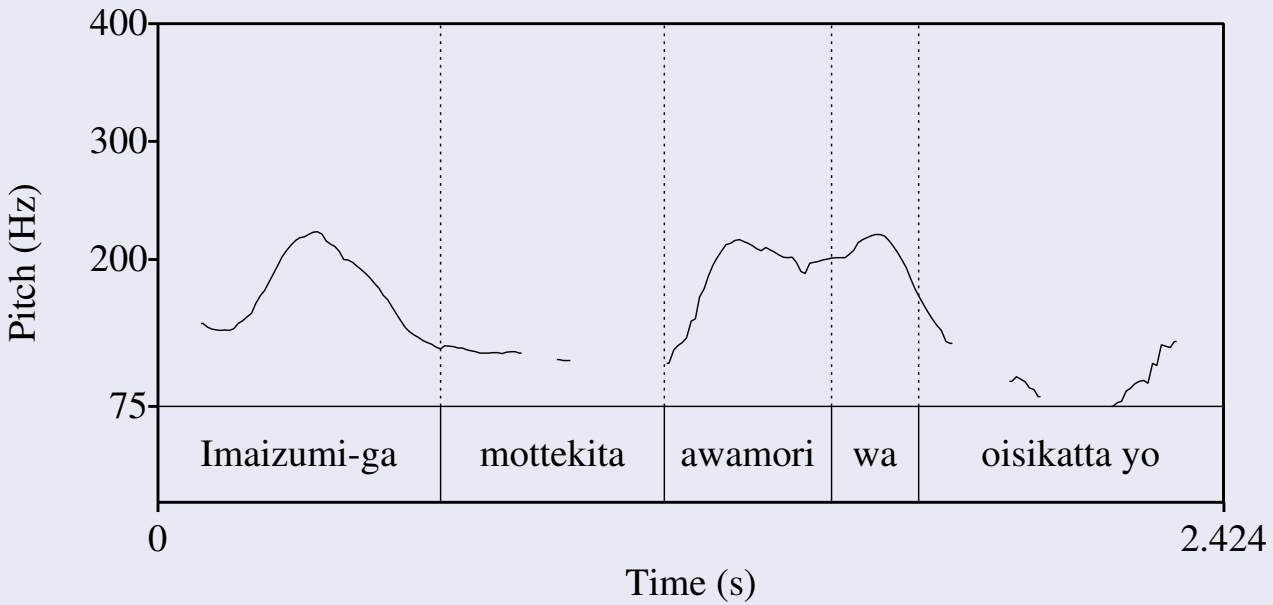

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Multiple Focused Items in the Scope of *wa*

How were the drinks at the party?

[**Imaizumi**-ga mottekita **awamori**] -wa oisikatta
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"The **awamori** that **Imaizumi** brought was tasty."
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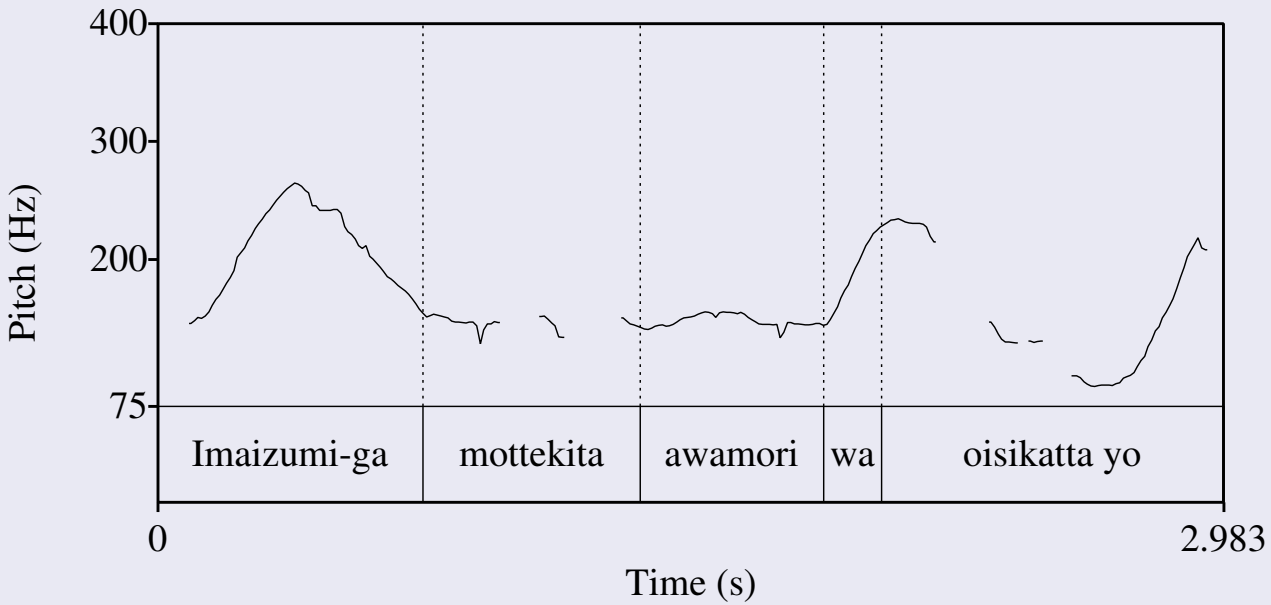

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CT Interpretation Depends on Prosody

- These examples show that the interpretation of CT *wa* depends on which element(s) in the scope of *wa* are focused.
- In Tomioka's account, the entire *wa*-marked consituent is indexed with a focus variable, so that we get alternatives for the entire *wa*-marked constituent.
- The nature of these alternatives must be made sensitive to the prosody of the *wa*-marked constituent in some way.
- Examples with multiple foci in the *wa*-marked constituent suggest that focus alternatives are built up in the standard way, and *wa* serves to send these alternatives up for contrastive interpretation (and not strong exhaustification).

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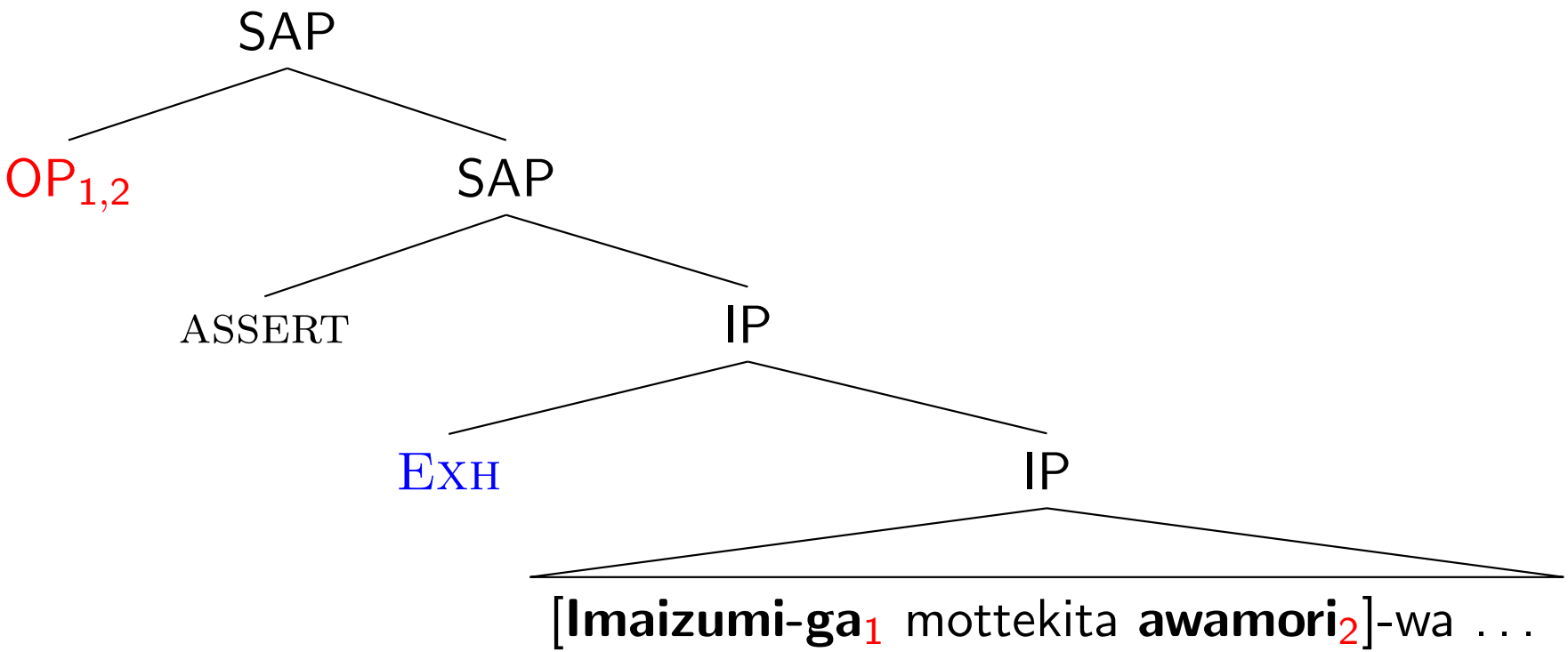

The Proposal in a Nutshell

- I argue for a modification to the mechanics of exhaustivity and contrastive topic calculation that preserves the basic structural insights of Tomioka's analysis, while giving us a way to account for the *locality restrictions* and *focus sensitivity* seen earlier.
- The account has two features:
  - Focus alternatives are handled by Rooth-style focus values.
  - The contrastive interpretation of *wa*-marked alternatives is due to LF movement.
- The combination of Hamblin alternatives and movement with variables is a bit tricky, but not impossible.
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Basics

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Examples

- $[\![[\text{Imaizumi}]_{\mathbf{F}}]\!]^f = \left\{x \,\middle|\, x \in D_e\right\}$
- $[\![[\text{awamori}]_{\mathbf{F}}]\!]^f = \left\{P \,\middle|\, P \in D_{\langle e,st\rangle}\right\}$
- $[\![[\text{Imaizumi}]_{\mathbf{F}}\text{-ga mottekita awamori}]\!]^f = \left\{\iota x.\, \text{awamori}'(x) \wedge \text{brought}'(x)(y) \,\middle|\, y \in D_e\right\}$
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Scope of the *wa*-marked Constituent

1. A standard Hamblin alternative focus semantics allows us to build up focus-sensitive alternatives to a complex *wa*-marked constituent.
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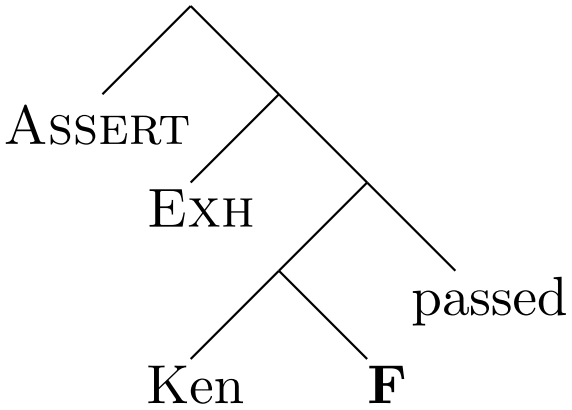
wa-marked Constituent Moves at LF

Focused Phrase without *wa*



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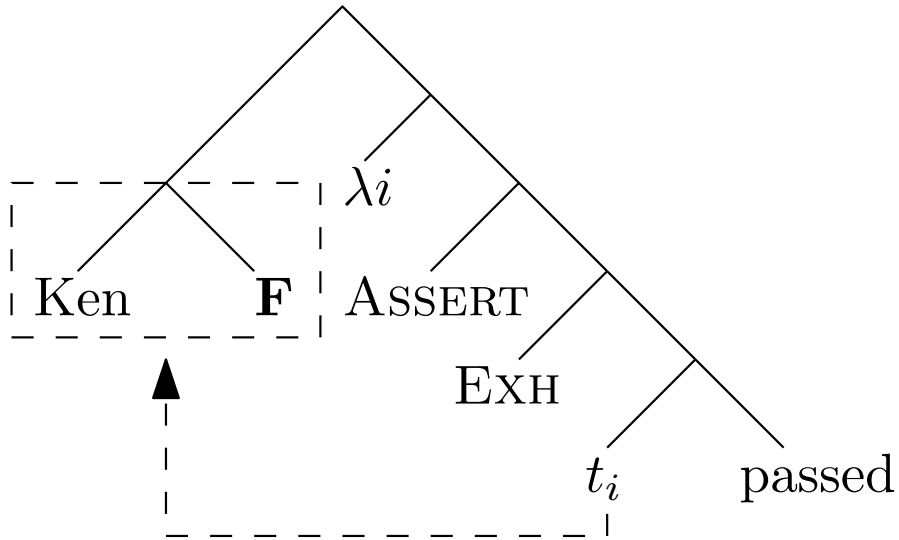


Combining Movement with Focus Alternatives

Combining Hamblin Alternatives with movement (with variables) requires some finesse. [Novel and Romero(to appear)]

- Need to represent assignment-function variables explicitly in the denotations.
- Need appropriate definitions for Function Application and Lambda Abstraction.

Function Application

Function Application (Ordinary)
For any subtree α with daughters β of type $\langle a, \langle \sigma, \tau \rangle \rangle$ and α of type $\langle a, \sigma \rangle$, where σ and τ are variables over types, and a is the type of assignment functions:

$$\left[\!\!\left[\begin{array}{ccc} & \alpha & \\ & \diagup \quad \diagdown & \\ \beta_{\langle a,\langle \sigma,\tau \rangle \rangle} & & \gamma_{\langle a,\sigma \rangle} \end{array} \right]\!\!\right]^o = \lambda g.\, [\![\beta]\!]^o(g)\big([\![\gamma]\!]^o(g)\big)$$

Example of Ordinary FA

Lexical Denotations

$[\![\text{Ken}]\!]^o = \lambda g.\, \text{Ken}'$

$[\![\text{passed}]\!]^o = \lambda g \lambda x \lambda w.\, \text{passed}'(x)(w)$

Ordinary FA

$$\left[\!\!\left[\begin{array}{c} \text{S} \\ \diagup\ \diagdown \\ \text{Ken} \quad \text{passed} \end{array} \right]\!\!\right]^o = \lambda g'.[\![\text{passed}]\!]^o(g')\left([\![\text{Ken}]\!]^o(g')\right)$$

$$= \lambda g'.\left(\lambda g \lambda x \lambda w.\, \text{passed}'(x)(w)\right)(g')\left(\lambda g.\, \text{Ken}'(g')\right)$$

$$= \lambda g' \lambda w.\, \text{passed}'(\text{Ken})(w)$$

Focus Features

Focus Feature **F** generates non-trivial focus-semantic alternatives. [Rooth(1985)]

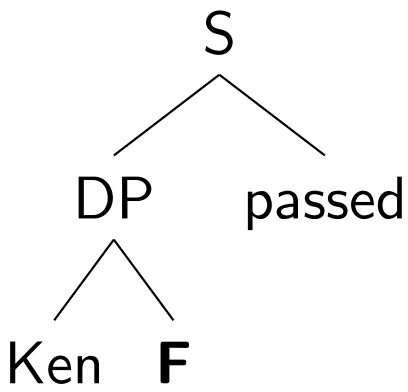
Ordinary Value

$$\left[\!\!\left[\begin{array}{c} \alpha \\ \diagup\!\diagdown \\ \mathbf{F} \quad \beta_\tau \end{array} \right]\!\!\right]^o = [\![\beta]\!]^o$$

Focus Value

$$\left[\!\!\left[\begin{array}{c} \alpha \\ \diagup\!\diagdown \\ \mathbf{F} \quad \beta_\tau \end{array} \right]\!\!\right]^f = \left\{ \lambda g.\, X(g) \middle|\, X \in D_\tau \right\}$$

Example with Bare Focus



Semantics of the Focused DP

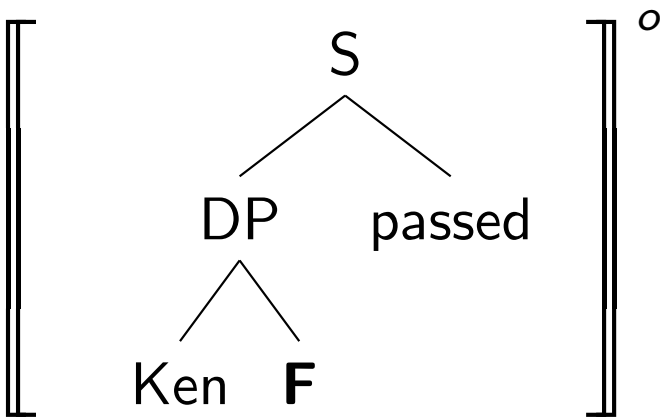
Ordinary Value

$$\left[\!\!\left[\begin{array}{c} \text{DP} \\ \diagup\diagdown \\ \textbf{F}\quad \text{Ken} \end{array} \right]\!\!\right]^{o} = \lambda g.\,\text{Ken}'$$

Focus Value

$$\left[\!\!\left[\begin{array}{c} \text{DP} \\ \diagup\diagdown \\ \textbf{F}\quad \text{Ken} \end{array} \right]\!\!\right]^{f} = \left\{ \lambda g.\,X(g) \,\middle|\, X \in D_{\langle a,e \rangle} \right\}$$

Ordinary Value of Sentence



$$^{o} = \lambda g \lambda w.\text{passed}'(\text{Ken}')(w)$$

FA for Focus Values

Function Application for Alternatives
[Novel and Romero(to appear)]

$$\left[\!\!\left[\begin{array}{ccc} & \alpha_{\langle a,\tau\rangle} & \\ \beta_{\langle a,\langle\sigma,\tau\rangle\rangle} & & \gamma_{\langle a,\sigma\rangle} \end{array} \right]\!\!\right]^f = \left\{ \lambda g.\, f(g)\big(x(g)\big) \,\middle|\, f \in [\![\beta]\!]^f \wedge x \in [\![\gamma]\!]^f \right\}$$

Sentence-Level Focus Value

$$\left[\!\!\left[\begin{array}{ccc} & \text{S} & \\ \text{DP} & & \text{passed} \\ \text{Ken} & \textbf{F} & \end{array} \right]\!\!\right]^f = \left\{ \lambda g.\, f(g)\big(x(g)\big) \,\middle|\, \begin{array}{l} f \in [\![\text{passed}]\!]^f \\ \wedge\, x \in [\![\text{Ken}]\!]^f \end{array} \right\}$$

$$= \left\{ \lambda g \lambda w.\, \text{passed}'(x) \,\middle|\, x \in D_e \right\}$$

$$= \left\{ \begin{array}{c} \lambda g \lambda w.\, \text{passed}'(\text{Ken}')(w), \\ \lambda g \lambda w.\, \text{passed}'(\text{Taro}')(w), \\ \ldots \end{array} \right\}$$

Exhaustification

At this point, we apply the focus-sensitive EXHaustivity operator.

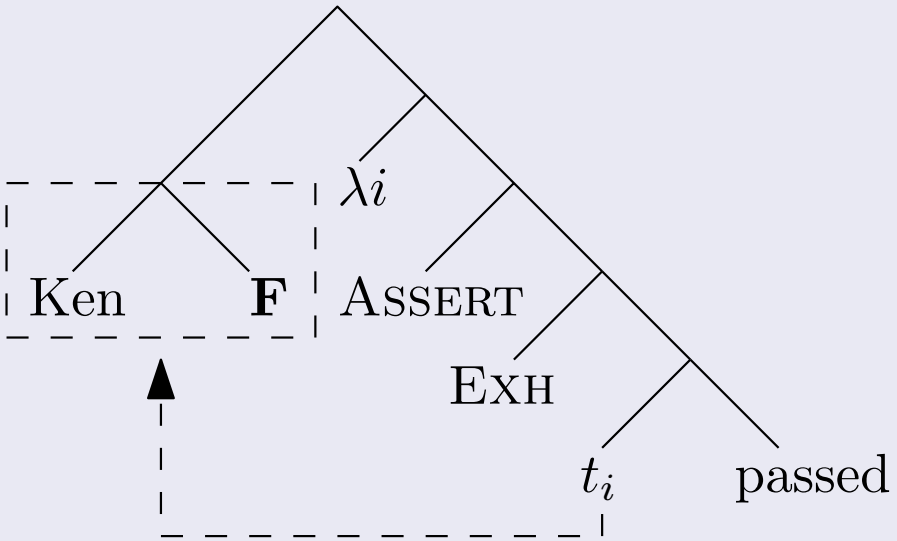
EXH, Modified from [Fox(2006)]

$$\left[\!\!\left[\begin{array}{c} \alpha_{\langle a,st\rangle} \\ \diagup\ \diagdown \\ \text{EXH} \quad \beta_{\langle a,st\rangle} \end{array} \right]\!\!\right]^o = \begin{array}{l} \lambda g \lambda w.\, [\![\beta]\!]^o(w)(g) \wedge \\ \forall q \in \text{NW}([\![\beta]\!]^o, [\![\beta]\!]^f, g) : \neg q(w)(g) \end{array}$$

$\text{NW}(p_{\langle a,st\rangle}, A_{\langle\langle a,st\rangle,t\rangle}), g_a) = \{q_{\langle a,st\rangle} \in A :$
$p(g)$ does not entail $q(g)\}$

Escaping Exhaustification by Movement

wa-marking Triggers LF Movement



Traces have Trivial Focus Values

Denotation of Traces

$[\![t_i]\!]^o = \lambda g.\, g(i)$

$[\![t_i]\!]^f = \{\lambda g.\, g(i)\}$

- Traces will in general be of the same type as the LF-moved consituent.
- This makes LF movement scopally inert wrt quantification, which Tomioka notes is necessary.

Lambda Abstraction with Focus Alternatives

Denotation Before Lambda Abstraction

$$\left[\!\!\left[\begin{array}{ccc} & \text{S} & \\ \text{DECL} & & \\ & \text{EXH} & \\ & & t_1 \quad \text{passed} \end{array} \right]\!\!\right]^f =$$

$$\left\{ \lambda g.\, \text{DECL}\big(\lambda w.\, \text{passed}'(g(1))(w)\big) \right\}$$

Lambda Abstraction with Focus Alternatives

Lambda Abstraction for Alternatives [Poesio(1996)]

$$\left[\!\!\left[\begin{array}{ccc} & \alpha & \\ & \diagup\ \diagdown & \\ \lambda_i & & \beta_{\langle a,\tau\rangle} \end{array} \right]\!\!\right]^f = \left\{ \lambda g \lambda x.\, f(g^{[x/i]}) \,\middle|\, f \in [\![\beta]\!]^f \right\}$$

$$\left[\!\!\left[\begin{array}{ccc} & S' & \\ & \diagup\ \diagdown & \\ \lambda_i & & S \end{array} \right]\!\!\right]^o = \lambda g \lambda x.\, \textsc{Decl}\big(\lambda w.\, \text{passed}'(g^{[x/1]}(1))(w)\big)$$

$$\left[\!\!\left[\begin{array}{ccc} & S' & \\ & \diagup\ \diagdown & \\ \lambda_i & & S \end{array} \right]\!\!\right]^f = \left\{ \lambda g \lambda x.\, \textsc{Decl}\big(\lambda w.\, \text{passed}'(g^{[x/1]}(1))(w)\big) \right\}$$

Combining the *wa*-marked Phrase

We now combine the focused *wa*-marked phrase, giving us a set of alternative "assertions".

$$\left[\!\left[\begin{array}{ccc} & & \\ & \diagup\ \diagdown & \\ \text{DP-}wa & & \text{S}' \\ & \diagup\ \diagdown & \\ \text{Ken} & & \mathbf{F} \end{array} \right]\!\right]^{o} = \lambda g.\, \textsc{Decl}\big(\lambda w.\, \text{passed}'(\text{Ken}')(w)\big) \,\big|\, X \in D_e$$

$$\left[\!\left[\begin{array}{ccc} & & \\ & \diagup\ \diagdown & \\ \text{DP-}wa & & \text{S}' \\ & \diagup\ \diagdown & \\ \text{Ken} & & \mathbf{F} \end{array} \right]\!\right]^{f} = \Big\{\lambda g.\, \textsc{Decl}\big(\lambda w.\, \text{passed}'(X)(w)\big) \,\big|\, X \in D_e\Big\}$$

Alternative "Speech Acts" and Contrast

- At this point, we have replicated the results of Tomioka's system, giving us a root denotation with alternative "speech acts" as the meaning of a CT *wa* sentence.
- In my dissertation, I provide detailed semantic analyses of the Force heads involved, as well as the CT operator that is responsible for the contrast in the contrastive *wa* construction.
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Complex Constituents with *wa*

- The system sketched here extends without any further complications to the case of complex constituents marked by *wa*.
- The focus semantic value of the *wa*-marked constituent is calculated like all other focus-semantic values.
- The calculation is focus-sensitive, and multiple foci are integrated via pointwise function application.
- The CT interpretation of these focused items is completely a function of their *syntactic* scope, resulting from LF movement.

Some Remaining Issues

- Examples with both CT and exhaustive focus require some finesse. Basically, we need EXH to operate on the focus alternatives in its scope, while also passing them up for further computation.
- What is the mechanism for LF movement of the *wa*-marked phrase?
  - I suggest that it is related to a *topic* feature introduced by *wa*-itself, which is checked with the topic feature of a higher operator.
  - A natural candidate for this higher operator is the CT operator itself.

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