

Indefinites and Functional Heads: From Japanese to Salish

Angelika Kratzer

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University of Washington (Seattle)

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The topic of this talk

- Why do indefinites have the properties they do?
- Starting point: Kratzer & Shimoyama 2002. We looked at indefinites from the point of view of Japanese **indeterminate pronouns** (Kuroda 1965).

Research Strategy

- Matthewson's (2001) **No Variation Hypothesis**: “there are certain fundamental semantic structures or properties which all languages should share.”
- Matthewson's hypothesis is meant to be no more than a **research strategy**.

Risks and Gains

- You have to be prepared to go wrong in a big way.
- You are likely to notice that you are wrong when your theories get messier and messier, and messier.....
- Using the strategy, you will try harder to detect hidden properties, and have thus a chance to go beyond obvious typological generalizations.

Why start with Japanese?

- From the point of view of Indo-European languages, quantifier constructions in Japanese look very exotic.
- Kratzer & Shimoyama 2002: From the point of view of Japanese, quantifier constructions in Indo-European languages seem to fall out as special cases.

- In Japanese, quantifier phrases are built using **indeterminate pronouns** (Kuroda 1965).

<i>dare</i>	‘who’	<i>doko</i>	‘where’
<i>nani</i>	‘what’	<i>itu</i>	‘when’
<i>dore</i>	‘which (one)’	<i>naze</i>	‘why’
<i>dono</i>	‘which’ (Det)	<i>doo</i>	‘how’

Quantificational Variability

- Depending on the operator they associate with, Japanese indeterminate phrases can take on existential, universal, interrogative, negative polarity, or free choice interpretations.

Possibly distant operator determines quantificational force

[[**Dono hon-o** yonda] kodomo] -**mo** yoku nemutta.

which book-ACC read child- MO well slept

‘For every book x, the child who read x slept well.’

Taro-wa [[**dare-ga** katta] mochi]-o tabemasita ka?

Taro-TOP who-NOM bought rice cake-ACC ate **Q**

‘Who is the x such that Taro ate rice cakes that x bought?’

Data from Shimoyama 2001.

Unselective Binding?

- **Nishigauchi 1986, 1990:** Japanese indeterminate pronouns are **Kamp-Heim indefinites**. They introduce variables that are unselectively bound by possibly non-overt quantificational operators.
- Empirical problems with Nishigauchi's particular proposal: Ohno 1989, von Stechow 1996, Shimoyama 2001.

A conceptual blemish of the Unselective Binding approach

- There have to be semantic binding relations between quantificational operators and indefinite DPs.
- You have to stipulate the properties of that binding relation.

A Hamblin Alternative Semantics for indefinites

- Ramchand 1997, Hagstrom 1998, Shimoyama 1999, 2001, Kratzer & Shimoyama 2002.
- Krifka 1995, Lahiri 1998: Argued for a semantics based on alternatives to account for polarity sensitivity.
- All the virtues of the Unselective Binding approach carry over to a Hamblin Semantics.

Hamblin semantics: Expanding alternatives

- Indefinites introduce a set of individual alternatives.
- That set of alternatives keeps expanding until it meets an operator that wants it.

Building Propositional Alternatives

[[**dare**]]^{w.g} = { John, Mary, Taro... }

[[**nemutta**]]^{w.g} = { the property 'slept' }

[[**dare nemutta**]]^{w.g} =
{ 'John slept', 'Mary slept', 'Taro slept', }

Building propositional alternatives

$$[[\mathbf{dare}]]^{\text{w.g}} = \{ x: \text{human}(x)(w) \}$$

$$[[\mathbf{nemutta}]]^{\text{w.g}} = \{ \exists x \exists w'. \text{slept}(x)(w') \}$$

$$[[\mathbf{dare\ nemutta}]]^{\text{w.g}} = \{ p: \exists x [\text{human}(x)(w) \ \& \ p = \exists w'. \text{slept}(x)(w')] \}$$

Selecting propositional alternatives

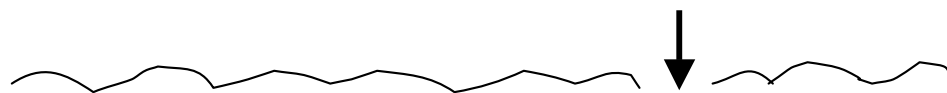
Shimoyama 1999, 2001

Taro-wa [[**dare-ga** katta] mochi]-o tabemasita ka?

Taro-TOP who-NOM bought rice cake-ACC ate **Q**

‘Who is the x such that Taro ate rice cakes that x bought?’

[Taro ate rice cakes that **who** bought]



creates
alternatives

Q

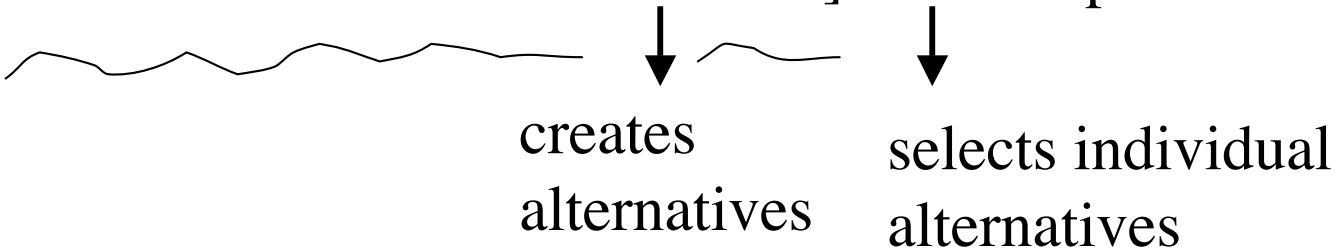


selects
propositional
alternatives

Selecting individual alternatives

Shimoyama 1999, 2001

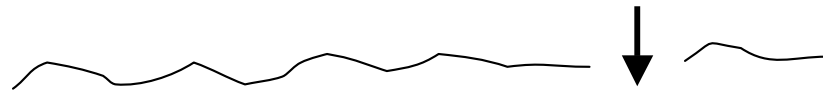
[[**Dono hon-o** yonda] kodomo] -**mo** yoku nemutta.
which book-ACC read child- MO well slept
'For every book x, the child who read x slept well.'

[The child who read **which book**] -**mo** slept well

creates alternatives selects individual alternatives

A familiar universal quantifier

Shimoyama 1999, 2001

[The child who read **which** book] -**mo** slept well



creates
alternatives

selects individual
alternatives

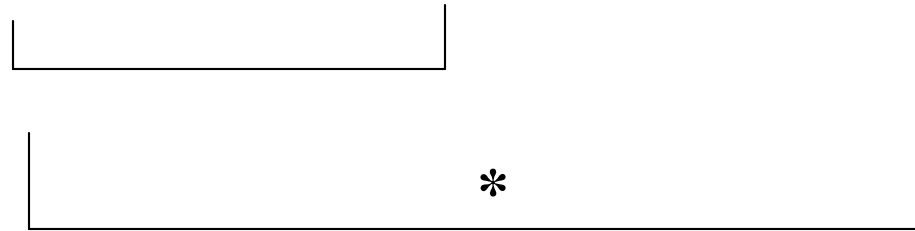
All members of A slept well:

A = {the child who read book a, the child who read
book b, the child who read book c,}

Intervention effects

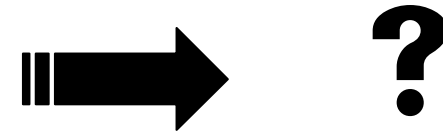
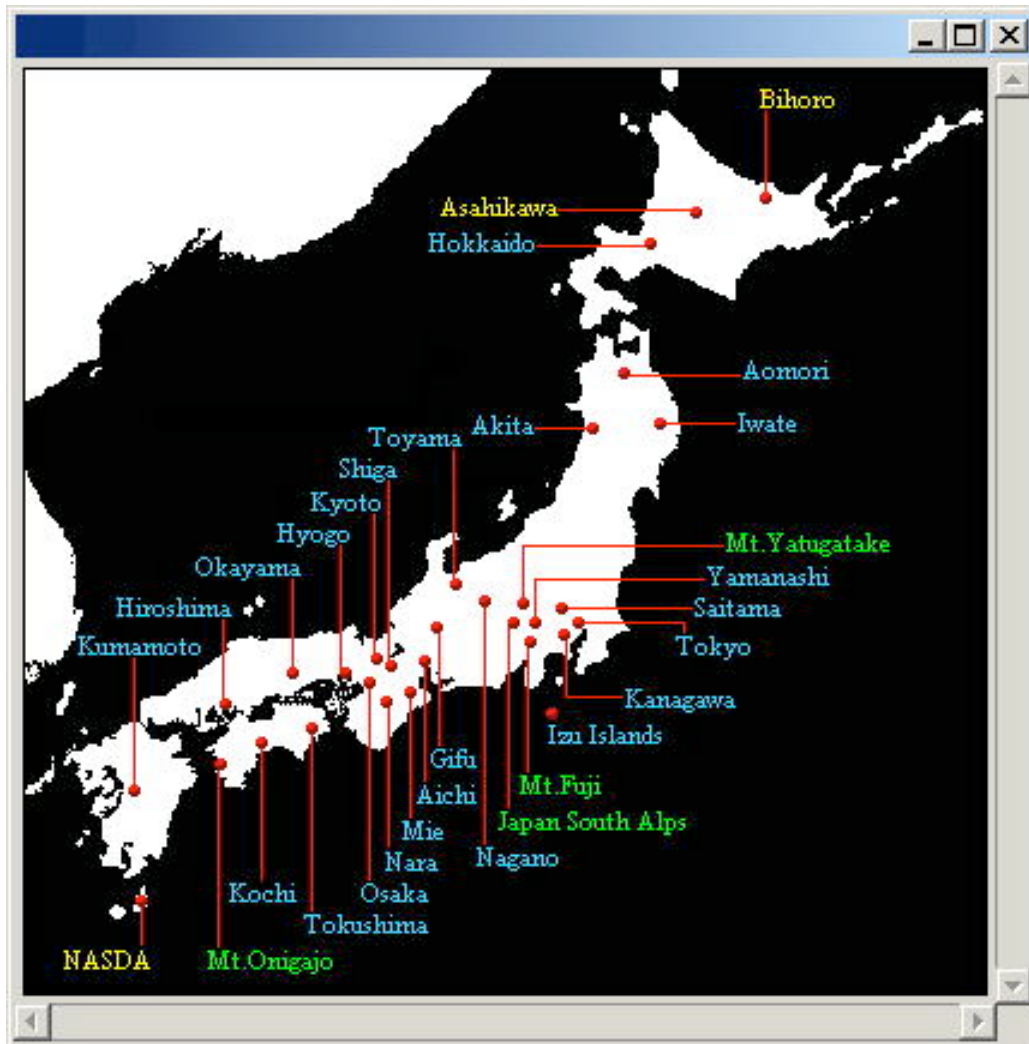
Shimoyama 1999, 2001

[....[.... **indefinite** **ka/mo**].....]-ka/mo



- Japanese intervention effects fall out from the architecture of the interpretation system.

Towards a general theory of quantification



- Suppose quantifiers in natural languages can quantify over sets of alternatives of different kinds. We expect, for example:
 - **Propositional quantifiers:** Quantify over propositions.
 - **Generalized quantifiers:** Quantify over individuals

Propositional Quantifiers

Where A is a set of propositions, we have:

$[\exists](A) =$ {the proposition that is true in all worlds in which some proposition in A is true}

$[\forall](A) =$ {the proposition that is true in all worlds in which every proposition in A is true}

$[\neg](A) =$ {the proposition that is true in all worlds in which no proposition in A is true}

$[Q](A) =$ A (or other question denotations, see handout)

Generalized Quantifiers

Where A is a set of individuals, we have:

$[\exists](A) =$ {the property of properties that is true of any property if some individual in A has it. }

$[\forall](A) =$ {the property of properties that is true of any property if every individual in A has it. }

And so on.....



**Martin
Haspelmath**

**Typology of
Indefinites**

Haspelmath's survey

- The class of indeterminate pronouns in the Japanese sense is not a random collection of indefinites. The same kind of indefinites cluster together in related paradigms in language after language....

Latvian, for example

Data from Haspelmath 1997, diacritics omitted

	Interrogative	<i>kaut</i> -series	<i>ne</i> -series	<i>jeb</i> -series
Person	<i>kas</i>	<i>kaut kas, kads</i>	<i>ne-viens</i>	<i>jeb-kads</i>
Thing	<i>kas</i>	<i>kaut kas</i>	<i>ne-kas</i>	<i>jeb-kas</i>
Place	<i>kur</i>	<i>kaut kur</i>	<i>ne-kur</i>	<i>jeb-kur</i>
Time	<i>kad</i>	<i>kaut kad</i>	<i>ne-kad</i>	<i>jeb-kad</i>
Manner	<i>ka</i>	<i>kaut ka</i>	<i>ne-ka</i>	
Determiner	<i>kads, kurs</i>	<i>kaut kads</i>	<i>ne-kads</i>	<i>jeb-kads, jeb-kurs</i>

The Latvian series: An arbitrary example of an Indo-European Indefinite

- The Latvian ‘bare’ series has interrogatives. The *kaut-* series has existentials. The *ne-* series appears under the direct scope of negation, and the *jeb-* series is found in indirect negation contexts, in comparatives, and also with a free choice interpretation.

Morphological differences

- In contrast to Japanese indeterminate pronouns, many of the Indo-European indefinites are morphologically complex. They are built from a common core and additional material.
- In the best of all possible worlds, it should be possible to derive the differences between Japanese and Indo-European quantifier constructions from those morphological differences.

Importing the Japanese perspective

- Suppose that Indo-European indefinites associate with **independent** quantificational operators, too.
- What might the additional morphological material do?

What might the additional morphological material do?

- At least some of it might be meaningless agreement morphology indicating agreement with non-overt quantificational operators: [□], [□], [□], [Q].

Immediate consequence

- Negative concord is expected
- **Ich hab' keine Fehler nicht gemacht.**
I have no mistake not made.
I didn't make any mistakes.
(German, non-standard)

Ladusaw 1992, 1996 on negative concord constructions

- “The other alternative is to abandon the assumption that any of the n-words in these sentences directly express negation. Rather the expression of negation is associated with an abstract element of clause structure the argument n-words are treated as nonnegative indefinites which are obligatorily to be associated with this abstract expressor of clausal negation ...”
1996, 340

Another expectation: Syntactic Intervention Effects (Beck 1996)

(a) * Was hat sie nicht **WEM** gezeigt?

What has she not to-whom shown
'What didn't she show to whom?'

(b) Was hat sie **WEM** nicht gezeigt?

What has she to-whom not shown

- The interrogative pronoun in (a) cannot agree with negation since it does not have a [\bar{A}] feature.

What is the full set of propositional quantifiers?

- Propositional quantifiers should be related to verbal inflectional heads.

A possible cast of propositional operators

- [□] Existential Closure of Nuclear Scope (Heim 1982, Diesing 1990).
- [□] Generic aspect?
- [Q] An interpretable [wh]-feature is already commonly posited in C to derive question denotations.
- [□] Sentential negation

Interrogative Concord

- **Who gave what to whom?**
- [$C_{[wh]}$[wh]o.....[wh]at.....[wh]om.....]

Interpretable Uninterpretable

Other types of concord?

- [□]-concord? (‘Universal Concord’)
- [□]-concord? (‘Existential Concord’)
- For the rest of the talk: We’ll look into [□]-concord.

If there was [□]-concord...

- Even indefinites that are pure existentials could lack quantificational force, which would then have to come from propositional [□].

How could you even tell?

- [□]-concord?
- **Somebody gave something to somebody.**

Task ahead

- Make a case for [□]-concord.

Indefinites to look at

- German *irgendein*, Spanish *algún*. Kratzer & Shimoyama 2002, Alonso-Ovalle and Menendez-Benito 2003.
- **No quantificational variability:** They are always existentials.
- They are a brand of **free choice indefinites**.

The argument

- You seem to need propositional $[\Box]$, hence $[\Box]$ -concord, to derive the free choice effect for free choice existentials.

Irgendein: Speaker Ignorance

Irgendjemand hat geklopft.

Irgend-one has knocked

Somebody knocked - the speaker doesn't know who it was.

Irgendein: Speaker ignorance or agent indifference

Sie hat an **irgendeine** Tür geklopft.

She has at *irgend-one* door knocked

- (a) Wide-scope: She knocked on some door - the speaker doesn't know which one it was.
- (b) Narrow-scope: She knocked on some door - she didn't care which one it was.

Interaction with a deontic modal

Mary musste **irgendeinen** Arzt heiraten.

Mary had to **irgend-one** doctor marry.

- (a) Wide-scope: There was some doctor Mary had to marry - the speaker doesn't know who it was.
- (b) Narrow-scope: Mary had to marry some doctor or other - any doctor was a permitted option.

Permitted Marriage Options

Mary musste **irgendeinen** Arzt heiraten.

Mary had to **irgend-one** doctor marry.

Scenario

Suppose Mary had to marry one of two doctors, Dr. Heintz or Dr. Dietz, and those were the only permitted options for her.

Judgment: Sentence can't describe situations of this kind.

Epistemic Possibilities

Mary musste **irgendeinen** Arzt heiraten.

Mary had to **irgend-one** doctor marry.

Scenario

Suppose there was a particular doctor Mary had to marry. The speaker knows that it was either Dr. Heintz or Dr. Dietz.

Judgment: Sentence feels slightly infelicitous. See Alonso-Ovalle & Menendez-Benito 2003 for more discussion of epistemic free choice effects.

Must $[\Box]$

Mary marry Dr. Arzt
Mary marry Dr. Betz
Mary marry Dr. Curtz
Mary marry Dr. Dietz
Etc.

- (a) For every accessible world, there is an alternative that is true in it.
- (b) **Free choice effect:** For every alternative, there is an accessible world in which it is true.

What's the Free Choice Effect?

- For every propositional alternative there is an accessible world in which it is true.
- You must consider the widest possible set of alternatives.

What the semantics for modals delivers

- For every accessible world there is a propositional alternative that is true in it.
- Even if there is a requirement to consider the widest possible set of propositional alternatives, this requirement alone doesn't seem to help with the Free Choice Effect.

Kratzer & Shimoyama 2002

- The Free Choice Effect is a conversational implicature.
- The implicature can be derived by assuming that free choice items involve domain widening, and domain widening has to be for a reason (Kadmon and Landman 1993) .
- Possible reasons for domain widening:
Strengthening a claim, avoiding a false claim, avoiding a false exhaustivity inference.

The crucial cases for us here

- Multiple occurrences of *irgendein* in the scope of a modal

Multiple *irgendein*'s

- If we look at sentences with multiple *irgendein*'s in the scope of a modal, then.....
- we have to consider all possible combinations of individuals in the alternative sets introduced by each *irgendein*.

An example

Mary muss **irgendwem** **irgendwas** schenken.

Mary must irgend-one-Dat irgend-thing-Acc give

‘Mary must give something or other to somebody or other as a gift.’

An example

Mary muss **irgendwem** **irgendwas** schenken.

Mary must **irgend-one-Dat** **irgend-thing-Acc** give

↓
Set of
alternatives A

↓
Set of
alternatives B

Every member of $A \square B$ determines a deontic or epistemic option that is relevant for the free choice effect.

Sentential \exists

- We seem to need a compositional mechanism combining alternatives introduced by different occurrences of *irgendein*.
- A propositional existential quantifier like \exists would do just that.

Conclusion

- There is evidence that an operator like propositional $[\Box]$ is used even by indefinites that do not have variable quantificational force.
- There is evidence for $[\Box]$ -concord, then.

But wait

- The Free choice effect with *irgendein* is just a conversational implicature.....

Cancellation in downward entailing environments

- Niemand konnte **irgendwas** sagen.
Nobody could **irgend-what** say
- Nobody could say anything.
- Not: Nobody could say just anything.

Importing the implicature into the semantics

Du musst einfach nur **irgendwem** **irgendwas** schenken.
You must simply only irgend-one-Dat irgend-thing-Acc give

‘You must simply give something or other to somebody or other as a gift.’

Negative case

Du kannst nicht
You can not

einfach nur **irgendwem** **irgendwas** schenken.
simply only irgend-one-Dat irgend-thing-Acc give

‘You can’t just give any-old-thing to any-old-body as a gift.’

- There is existential concord, then.
- That *irgendein* looks like an existential does not mean that it is itself an existential quantifier.

Moving towards Salish....

- What could indefinite determiners denote if they are not quantificational?
-Matthewson 2002.....

Denotations for indefinite determiners

- Indefinite determiners might denote contextually supplied (possibly parametrized) choice functions selecting a **non-empty subset** from any set in their domain.
- $[[\mathbf{some\ dog}]]^{c,w,g} = f_c ([[\mathbf{dog}]])^{c,w,g} =$
 $f_c \{x: x \text{ is a dog in } w\}$

Domain shrinking

- $[[\text{some dog}]]^{c,w,g} = f_c \{x: x \text{ is a dog in } w\}$
- Contextual domain restrictions are accounted for in this way.
- Wide-scope indefinites are special cases: The choice function picks a singleton set.

Domain widening

- Widening

$$\begin{aligned} [[\mathbf{irgendein Hund}]]^{c,w,g} &= [[\mathbf{dog}]]^{c,w,g} \\ &= \{x: x \text{ is a dog in } w\} \end{aligned}$$

- Intensional widening

$$\begin{aligned} [[\mathbf{any dog}]]^{c,w,g} &= \{x: \exists w' x \in [[\mathbf{dog}]]^{c,w',g}\} \\ &= \{x: x \text{ is a possible dog}\} \end{aligned}$$

Matthewson 2001

- The creation of a generalized quantifier proceeds in two steps. In St'át'imcets QPs must have the form [Q [Det NP]], where Det denotes a choice function.

[_{QP} Q [_{DP} Det NP]]



Denotes a
choice function

Current perspective on indefinite determiners

a. Generalized Quantifiers

$[_{QP} Q \quad [_{DP} Det \quad NP]]$

b. Propositional Quantifiers

$[_{FP} Q \dots [_{VP} V \quad [_{DP} Det \quad NP]]]$

What about definites?

- Heim 1982 has proposed a unified analysis of definites and indefinites.

Possible ingredients for a typology

- Determiners shrink or widen domains. They never quantify.
- Determiners may carry uninterpretable features $[\square]$, $[\square]$, $[\square]$, $[Q]$ that have to enter syntactic agreement relations with matching features carried by quantifiers. This creates a **concord phenomenon**.
- Quantifiers quantify over sets of alternatives.

Predicted semantic properties of (in)definite DPs

- **Related to determiner denotations:**
definite, indefinite, singleton, free
choice effects, semantic effects of
domain widening.

Predicted syntactic properties of (in)definite DPs

- **Related to uninterpretable [\bar{A}], [\bar{C}], [\bar{E}], [Q] features**

Concord, fixed versus variable
quantificational force, syntactic
intervention effects.

What about *any*...?

- Suppose there was just one *any*.
- Then *any* wouldn't have any quantificational force of its own.
- It wouldn't have any of the features $[\square]$, $[\square]$, $[\square]$, $[Q]$, and the alternatives it creates would be quantified by the closest quantifier they bump into .

- The limited distribution of *any* could not be explained by syntactic constraints related to agreement, binding, etc.
- We would expect semantic properties of *any* (possibly connected to intensional domain widening) to be responsible for its distribution.

No interrogative interpretation?

- Why couldn't *any* bump into [Q] and be interpreted as an interrogative?
- Lacking any other uninterpretable features, we expect *any* to move no further than its case features could take it. But then it should be caught by one of the other propositional quantifiers before getting anywhere close to [Q], which is sitting in the complementizer position.

The End