Indefinites and Functional Heads: From Japanese to Salish

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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).

dare	'who'	***doko***	'where'
nani	'what'	***itu***	'when'
dore	'which (one)'	***naze***	'why'
dono	'which' (Det)	***doo***	'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

$[[\textbf{dare}]]^{w,g} = \{ x: human(x)(w) \}$

$[[\textbf{nemutta }]]^{w,g} = \{ \lambda x \lambda w'. slept(x)(w') \}$

$[[\textbf{dare nemutta }]]^{w,g} =$

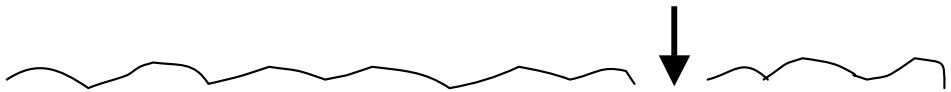
$\{p: \exists x [human(x)(w) \& p = \lambda w'. slept(x)(w')]\}$

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] **Q**



creates alternatives

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

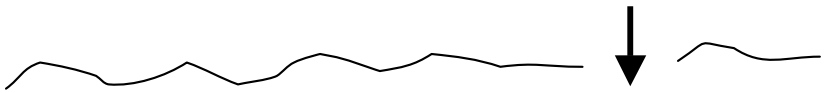
creates alternatives

selects individual alternatives

A familiar universal quantifier

Shimoyama 1999, 2001

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



creates alternatives

selects individual alternatives

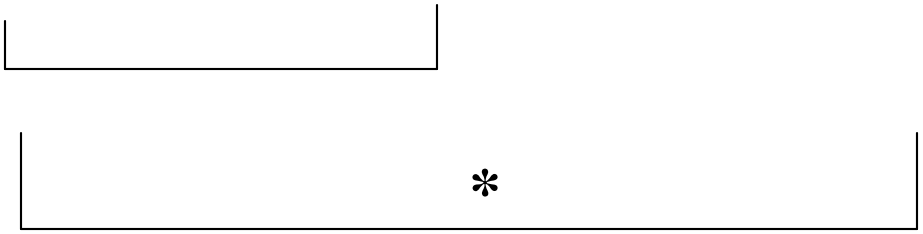
All members of A slept well:

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

Intervention effects

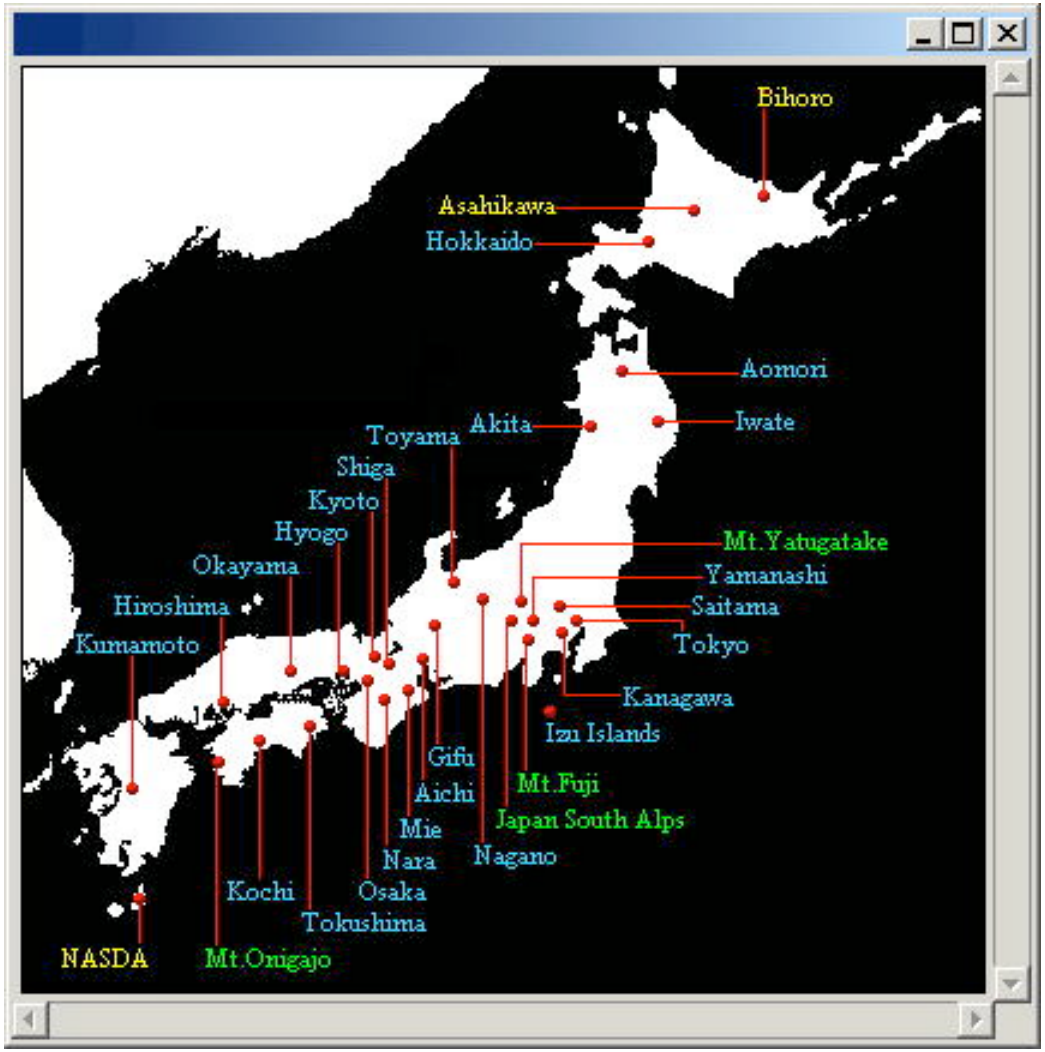
Shimoyama 1999, 2001

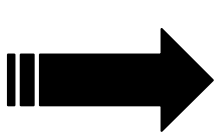
[….[…. **indefinite** …. **ka/mo**]……]-**ka/mo**



- 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:

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

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

[∄](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:

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

[□] (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	***kaut*-series**	***ne*-series**	***jeb*-series**
Person	***kas***	***kaut kas*, *kads***	***ne-viens***	***jeb-kads***
Thing	***kas***	***kaut kas***	***ne-kas***	***jeb-kas***
Place	***kur***	***kaut kur***	***ne-kur***	***jeb-kur***
Time	***kad***	***kaut kad***	***ne-kad***	***jeb-kad***
Manner	***ka***	***kaut ka***	***ne-ka***	
Determiner	***kads*, *kurs***	***kaut kads***	***ne-kads***	***jeb-kads*, *jeb-kurs***

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 [□] feature.

What is the full set of propositional quantifiers?

- Propositional quantifiers should be related to verbal inflectional heads.

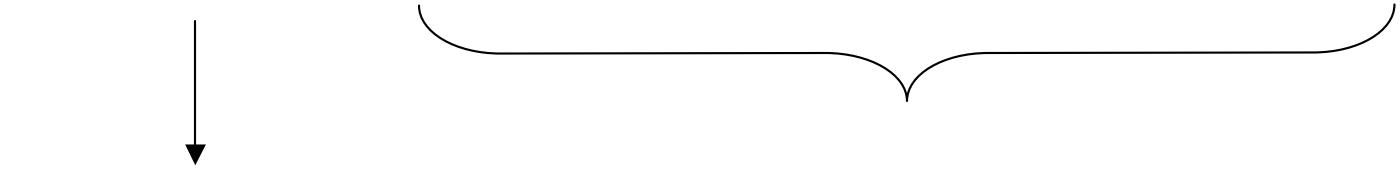
A possible cast of propositional operators

[∃]	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 *algun*. 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 [□], hence [□]-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 [□] { 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 □ B determines a deontic or epistemic option that is relevant for the free choice effect.

Sentential [□]

- We seem to need a compositional mechanism combining alternatives introduced by different occurrences of *irgendein*.

- A propositional existential quantifier like [□] would do just that.

Conclusion

- There is evidence that an operator like propositional [□] is used even by indefinites that do not have variable quantificational force.

- There is evidence for [□]-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.

- $[[\textbf{some dog}]]^{c,w,g} = f_c\,([[\textbf{dog}\,]]^{c,w,g}) =$

  $f_c\,\{x\text{: x is a dog in w}\}$

Domain shrinking

- $[[\textbf{some dog}]]^{c,w,g} = f_c \{x: x \text{ is a dog in } w\}$
- 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
  $[[\textbf{irgendein Hund}\ ]]^{c,w,g} = [[\textbf{dog}\ ]]^{c,w,g}$
  $= \{x: x \text{ is a dog in } w\}$

- Intensional widening
  $[[\textbf{any dog}\ ]]^{c,w,g} = \{x: \Box w' \ x \in [[\textbf{dog}\ ]]^{c,w',g}\}$
  $= \{x: x \text{ is a possible dog}\}$

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.

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

Denotes a
choice function

Current perspective on indefinite determiners

a. Generalized Quantifiers
   $[_{QP}\,Q \quad [_{DP}\,Det \quad NP\ ]\ ]$

b. Propositional Quantifiers
   $[_{FP}Q\ldots..[_{VP}\,V \quad [_{DP}\,Det \quad NP\ ]\ ]\ ]$

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 **[□], [□], [□], [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 [□], [□], [□], [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 [□], [□], [□], [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