Class III: Indefinites – GQs, Exceptional Scope and Choice Functions

In this class, we will look at the semantics of indefinite expressions, such as *a/some man*, which are used in order to introduce new discourse referents, and which typically come with a non-uniqueness inference: indefinite NPs refer to one individual from among a class of individuals satisfying the NP-property. As such, English and German indefinites form the counterpart of definite NPs. We will look at three different mechanisms of analysing indefinite NPs/DPs in natural language, depending on their morpho-syntactic make-up, their discourse-dynamic behaviour, and their scope-taking behaviour: (i.) as existential quantifiers; (ii.) as restricted variables plus existential closure; (iii.) as choice functions; and (iv.) qua the compositional mechanism of RESTRICTION (which also involves restricted variables + EC).

1. Empirical diagnostics for indefinites (Matthewson 1999)

The basic discourse-semantic function of indefinites consists in introducing new discourse referents into the discourse (Heim 1982, Kamp 1981); INDEFs are general terms in the sense of Aristotle, and, as such, indicate in the default case that there are other individuals of the same kind (non-uniqueness). Indefinites can be identified on the basis of four characteristics:

i. INDEFs occur in existential sentences:

(1) a. There is a man in the garden. vs b. There is the man in the garden.

(2) Àkwai **(wani) mùtûm** à cikin gàrii (Hausa)
there.is WANI man.SG at inside town
'There is a (some) man in town.'

ii. INDEFs introduce new discourse referents:

(3) Once upon a time, there was a princess, who lived in a beautiful castle.

(4) a. Wannàn tààtsuunìyaa-r **(wata) yaarinyàà** cee. Suuna-n-ta Hàwwa
this story-of WANI girl COP name-of-her Hawwa
'This is a story about a (some) girl. Her name is Hawwa.'

b. **wasu** sun tafi, **wasu** sun dawo.
WANI 3PL.PFV leave WANI 3PL.PFV return.
'Some left and some (others) returned.'
NOT: 'Some people left, and (the same people) returned.'

iii. INDEFs neither entail nor presuppose uniqueness.

(5) a. Musa saw a/some girl.

b. Muusaa yaa ga (wata) yaarinyàà.
Musa 3SG.M.PFV see WANI girl
NOT: 'Musa saw the (contextually) unique girl.'

c. #wata raanà taa fiitoo.
WANI sun 3SG.F.PFV rise
#'Some/Another sun went up.'

iv. Because of non-uniqueness, INDEFs are licit antecedents for sluicing:

(6) Musa has bought **a/some book**, but I have forgotten **which**.

(7) John ya karanta (wani) littafi, amma ba-n san ko wanne ba ne.
John 3SG.M.PFV read WANI book but NEG-1SG know Q which NEG COP
'John has read a (certain) book, but I don't know which.'

2. Standard Semantic Analyses

2.1. Generalized Quantifiers (Montague 1973, Barwise & Cooper 1981)

In standard type-driven compositional semantics, indefinite NPs are analyzed as denoting weak or symmetric generalized quantifiers (henceforth: GQ) of type <<e,t>,t> . When in subject position, such GQs map the VP-denotation of type <e,t> to the S-denotation of type <t>: QPs denote functions that map functions from individuals to truth-values to a truth value.

(8)
S <t>
GQ<et,t> VP<et>
Somebody arrived
A/some man

The denotation of QPs is best conceived of as a second order predicate, i.e. a predicate not over individuals, but over sets of individuals. The sets over which the QP in (8) predicates are provided by the VP-denotation.

One can also think of indefinite (and other) GQs as denoting properties of properties. On this view, the general indefinite NP *something* denotes the second order property property of being satisfied by at least some entities in the discourse (i.e. if one or more inanimate individuals have the first order property in question, the predicate will be mapped to true).

(9) a. [[something]] = $\lambda P \in D_{et}$. There is some $x \in D_e$ such that $P(x) = 1$.

Compare with other GQs, such as *nothing* and *everything*:

b. [[nothing]] = $\lambda f \in D_{et}$. There is no $x \in D_e$ such that $f(x) = 1$.
c. [[everything]] = $\lambda f \in D_{et}$. For all $x \in D_e$, $f(x) = 1$.

In set talk, the denotation of a GQ is a set of sets. These sets are just those that satisfy the second order predicate denoted by the GQ. On this view, *nothing* denotes the set of all those VP-denotations (predicates) that are not satisfied by any entity in the discourse.

Things are different with *everything/everybody*: The denotation of *everything/everybody* is the set of all the VP-denotations satisfied by every entity/individual in the domain of discourse:

Let us assume there is a situation S3 with three individuals: Sue, Bill, and Joey. All three of them smoke and drink, but only Joey reads literature, and only Bill runs. Nobody is asleep.

(10) a. $[[\text{somebody}]]^{S3} = \{[[\text{smoke}]]^{S3}, [[\text{read literature}]]^{S3}, [[\text{runs}]]^{S3}, [[\text{drink}]]^{S3}\}$
b. $[[\text{everybody}]]^{S3} = \{[[\text{smoke}]]^{S3}, [[\text{drink}]]^{S3}\}$
c. $[[\text{nobody}]]^{S3} = \{[[\text{is asleep}]]^{S3}\}$

- **The meaning of indefinite determiners*: a/some***

The principle of type-driven compositionality also enables us to determine the semantic type of indefinite determiners such as *some* in *some angel*. They are of type <et,<et,t>>:

(11)

S<t>
QP<et,t> VP<et>
Q**<et,<et,t>>** NP<et>
some angel

Indefinite (and other quantificational) determiners denote functions that map an argument of type <e,t> (a property) onto a function from <e,t> (a second property) onto a truth-value. I.e., they establish a relation between properties (= sets of individuals). Quantifying determiners are higher order relation-denoting expressions.

Same as transitive verbs (= relation between individuals) and the sentence connectors *and* and *or* (= relation between truth values), quantifying determiners establish a relation between two semantic objects of the same type.

(12) a. [[some]]= $\lambda g\in D_{et}.\ \lambda f\in D_{et}.$ There is at least one $x\in D_e$ such that $g(x) =1$ and $f(x) =1$.
or: $\boldsymbol{\lambda Q\lambda P.\ Q \cap P \neq \varnothing}$ ⇒ the relation is the set-*overlap* relation!

b. [[no]] = $\lambda g\in D_{et}.\ \lambda f\in D_{et}.$ There is no $x\in D_e$ such that $g(x) =1$ and $f(x) =1$.
or: $\boldsymbol{\lambda Q\lambda P.\ Q \cap P = \varnothing}$ → the relation is the *non-overlap* relation!

c. [[every]] = $\lambda g\in D_{et}.\ \lambda f\in D_{et}.$ For all $x\in D_e$, if $g(x) =1$ then $f(x) =1$.
or: $\boldsymbol{\lambda Q\lambda P.\ Q \subseteq P}$ → the relation is the *subset* relation!

⇒ Indefinite NPs are considered weak or symmetric quantifiers on the GQ-analysis: Their first (NP) and second (VP) arguments can be reversed without a change in meaning:

(13) Some man sings. ⇔ Some singer is a man/ is male.

2.2 Dynamic Analyses plus existential closure

Same as in the formal semantic discussion of *definite* DPs, there is an alternative analysis in terms of dynamic semantic. This alternative approach originates in work by Heim (1982) and Kamp (1981), and it builds on some interesting semantic differences between indefinite NPs and (strong) GQs:

i. Indefinite NPs allow for anaphoric reference, whereas proper GQs do not.

(14) a. **A dog$_1$** came in. **It$_1$** lay down under the table.
= A dog came in. The dog that came in lay down under the table.

b. **Every dog**$_1$ lay down. **#It$_1$/ ??They**$_1$ yawned.

iv. Indefinite give rise to quantificational variability effects (Lewis 1980), e.g., in donkey sentences (Geach 1962):

(12) a. Every man who owns a donkey beats it. (all donkeys are beaten)
b. Most men who own a donkey beat it. (most donkeys)
c. No man who owns a donkey beats it. (no donkey)

(13) a. Every man who owns most donkeys beats them. (most donkeys)
b. No man who owns most donkeys beats them. (most donkeys)

⇒ Heim's Conclusion: **Indefinite NPs do not have quantificational force of their own!**

> "I am denying that [indefinites] ever have any quantificational force of their own at all. What appears to be the quantificational force of an indefinite is always contributed by either a different expression in the indefinite's linguistic environment, or by an interpretive principle that is not tied to the lexical meaning of any particular expression at all." [Heim 1982: 122]

- **Heim's solution:** Indefinites denote restricted variables, which are either bound by other quantifiers in the clause (Q-adverbs, necessity, negation, generic operators), or else by a default existential quantifier, which is inserted into logical form in systematic fashion, i.e. at particular structural points (= Existential closure)

(15) a. a dog_1 ⇒ dog(1) (= an atomic formula with pronominal index)
b. $[[\text{a dog1}]]^g$ = g(1), defined iff g(1) is a dog

⇒ The restricted variable (here: '1') is bound by other quantifiers, or else by ∃-closure.

(16) [S $\exists_1$ [S [NP_{INDEF} man(1) Some man] [VP arrived λx. x arrived]]]

$[\![\exists]\!] = \lambda P_{<et>}.\ \exists x\ [P(x)]$

lower S: g(1) a man & g(1) arrived

In order to capture the discourse introducing effect, Heim (1982) introduces a presupposition on licit indices for the restricted variables:

(17) **Novelty condition:** An indefinite NP must not have the same referential index as any NP to its left.

> **2.3 Summary**
> - Two prominent analyses of indefinites on the market: GQ vs restricted variables
> - Each has its merits, but which one is correct?
>
> ⇒ **Additional empirical evidence, including evidence from African languages?**

3. Ambiguities and Bare NP Indefinites

Whilst standard analyses treat indefinites as unambiguous, i.e. as either denoting GQs or else restricted variables, it has emerged that (some) indefinites are potentially ambiguous. Also, there are bare indefinite NPs without an overt indefinite determiner: Bare NP indefinites must take narrow scope relative to other operators, such as NEG; cf. Carlson (1977) and exs. (22) et seq. below!

3.1 Ambiguity of INDEFs? Exceptional wide-scope vs Non-specific narrow scope

- **Additional complication:** English indefinites do not behave like GQs, nor like restricted variables. Unlike proper GQs and in situ restricted variables, indefinite NPs can take **EXCEPTIONAL WIDE SCOPE** out of syntactic islands, such as conditionals (18ab) and relative clauses (19ab) (Fodor & Sag 1982, Ruys 1993, Abusch 1994, Reinhart 1997, Kratzer 1998, Endriss 2009):

(18) a. **Someone** will be offended if we don't invite **most** philosophers

i. 'A certain person will be offended if we don't invite most philosophers.' ∃>**MOST**

ii. *'For most philosophers, there will be a (possibly different) person that will be offended if we don't invite her.' ***MOST >** ∃

b. **Most** guests will be offended if we don't invite **some** philosopher

i. 'Most guests will be offended if we don't invite a (possibly different) philosopher'

ii. 'There is a (specific) philosopher such that most guests will be offended if we don't invite her' ∃ > **MOST**

(19) a. **Many** students believe anything that **every** teacher says

i. 'Many students believe everything that every teacher says.' **MANY >** ∀

ii.*'For every teacher, there are many students such that they believe everything he says.' ∀ > **MANY**

b. Many students believe anything that some teacher says.

i. 'Many students believe everything that any teacher says.' **MANY >** ∀

ii. 'There is a certain teacher such that many students believe anything he says.'

∀ > **MANY**

⇒ The **(exceptional) wide scope readings** are also often referred to as **specific readings**.

⇒ The exceptional wide scope of indefinites does not follow from unrestricted, island-free Quantifier Raising (see Heim and Kratzer; ch.7, Reinhart 1997). An analysis of wide-scope indefinites as generalized quantifiers (Barwise & Cooper1981) is therefore rejected.

3.2 Choice Functions provide a solution to the problem of intermediate scope that does not rely on QR. On the assumption that indefinites in English, German etc. are ambiguous (Reinhart 1997, Winter 1997, Kratzer 1998, 2003)

i. Reading I: GQ <et,t>/restricted variable <et> ⇒ narrow scope, unspecific

ii. Reading II: referential (<e>) qua **choice function mechanism**

⇒ exceptional wide scope, specific

⇒ **Empirical evidence for ambiguity: (non-) accenting of indefinite determiner:**

(20) a. A / SOME man vs. b. a/sm man

- Choice function: A function that takes a set (type <et> = NP-denotation) as argument and gives back an arbitrary unique element (type <e> = referential) from that set.

(21) $[[CF]] = \lambda P_{<et>}.\ x;\ x \in P$ TYPE <et,e>; with indeterminate output: any $x \in P$!!!

⇒ Such type <e>-indefinites are referential, and hence automatically take wide(st) scope (= proper names, definite NPs): solution to scope puzzle.

- ***Assumption***: Indefinite NPs can denote choice function variables, cf. (22):

(22) a. **Most** guests will be offended if we don't invite **some** philosopher.

b. …. if we don't invite [DP $\mathbf{f_{CH}}$ [NP philosopher]]

c. $\forall$s [$\neg$invite(we, $\mathbf{f_{CH}}$({x: x a philosopher}), s)] $\rightarrow$ MOSTx [guest(x,s)]: offended (x,s)

Q: But how is the choice function variable bound? Or is it bound?

i. Existential closure at various levels, cf. (23a), (Reinhart 1997, Winter 1997)

ii. Existential closure at the matrix level plus skolemized choice function (Matthewson 1999), cf. (23b)

iii. Conextually bound plus optional skolemization to higher Q-operator (Kratzer 1998), cf. (23c)

(23) a. ($\exists$f) … [Q … [($\exists$f) … [Op … ($\exists$f) …. **f(**{x: [[NP(x)]])
wide intermediate narrow scope

b. $\exists$f … [Q … [Op ... $\mathbf{f_i}$ ({x: [[NP(x)]])

Skolem index 'i' can be bound to speaker (wide scope: specific reference) or to Q-operator, in which case the output of f co-varies with the Q-domain

c. [Q … [Op ... $\mathbf{f_i}$ ({x: [[NP(x)]])

Skolem index 'i' can be bound to speaker (wide scope: specific reference) or to Q-operator, in which case the output of f co-varies with the Q-domain;

This reading is facilitated by the presence of further Q-bound pronouns in the NP-scope of f!

⇒ Choice functions can be conceptualised as *identification procedures* (Kratzer 2003)

(24) Every professor recommended some book (= f({x: x a book})

a. **Wide scope:** There is an identification procedure f such that every professor recommended the book outputted by f / Every professor recommended the book outputted by f for the speaker argument (e.g., f = some book the speaker has in mind)

b. Intermediate scope:

(23a): For each professor x, there is an identification procedure that yields a book that x recommended

(23b): There is a skolemized identification procedure f, such that for every professor x, f(x) applied to [[book]] yields a book that x recommended; e.g., f = x's avorite book

(23c): There is a contextually given/speaker-known identification procedure such that for every professor x, f(x)([[book]]) yields a book that x recommended; e.g., f = x's favorite book.

- One empirical difference between (23a) and (23c): Availability of intermediate readings in the absence of additional Q-bound pronouns, Kratzer (1998):

(25) a. [***Every professor***]$_i$ rewarded every student who read ***some*** [book **she$_i$** had reviewed for the New York Times].

Every prof$_i$ x > $\exists$ some book y she$_i$ reviewed > x rewarded every student that read y

b. **Every professor** rewarded every student who read ***some*** [book **I** had reviewed for the New York Times].

Q: For (25b), is there a different book y for every professor x such that x rewarded every student who read y? Kratzer (1998): not really.

⇒ In upward monotonous contexts, it is difficult to see any further differences, but not so in downward entailing contexts! Cf. Chierchia (2001) and Schwarz (2001):

These pose a problem for the construals in (23a) and (23b) with existential closure at the matrix level:

(26) **Context**: Three students S1, S2, and S3 wrote four papers each, but only submitted one of them each. (this context rules out the narrow scope construal of EC in (23a) as false).

a. **No student$_i$** submitted **a/some** paper that **she$_i$** had written.

b. $\exists$**f** [$\neg\exists$x [student(x) $\wedge$ x submitted **f$_i$**({y: y is a paper written by x})

⇒ (26b) translates as 'There is an identification procedure that outputs for each student x a paper y such that x did not submit it'. = This falsely makes (26a) equivalent to (26c)!

c. **No student$_i$** submitted **every** paper that **she$_i$** had written.

- The DE-problem does not apply to the Kratzerian choice function approach in (23c)

3.3 ∃-GQs with singleton restrictions

- **A novel problem: With GQs, restricted variables, and choice functions, we even have three potential interpretations for indefinites: ☹!**

Q: Is this multitude of modelling tools warranted by the empirical facts?

⇒ **Towards a solution - Schwarzschild (2002): Singleton GQs**

Quantifiers with quantificational domain (provided by the NP-meaning) that is contextually restricted to a singleton set behave like referential <e>-expressions for all intents and purposes: This way, exceptional wide scope interpretations could be accounted for on a GQ-analysis after all:

- Formal modelling of singleton GQs (Onea & Geist 2011, Driemel 2019:33)

The restriction can be coded by introducing a salient skolem function f into the restrictor of the existential quantifier

(27) $[\![\text{a/sm}_1]\!]^g = \lambda P.\lambda Q.\ \exists x\ [P(x) \wedge \mathbf{f(g(1)) = x} \wedge Q(x)]$; with f: $\lambda z.\iota y\ [f(y,z)]$

- *The emerging picture:*

i. (singleton) GQ-indefinites (<et,t>): (exceptional) wide scope (+ narrow scope)

ii. Predicative, restricted variable-indefinites (<et>): **Narrow scope only!**

Q: Do we find evidence for this partition in African languages?

YES, e.g. Hausa! But the case might be different for Ga and Akan!

3.4 Bare Plurals in English (Carlson 1977)

- Additional evidence for narrow-scope, non-quantificational indefinites in English: Bare plural and mass NPs always take narrow scope, and have been analysed as having predicative <et>-content only (Carlson 1977):

(28) Kodjo didn't buy **books** / **charcoal**.

i. It is not the case that there is/are any books/ any charcoal that Kodjo bought.

ii. NOT: *'There are some books/ There is some charcoal such that

⇒ Carlson builds the existential force ∃ (there is/ there are) into the meaning of the verb, which he treats as lexicall ambiguous:

(29) i. $[[\text{buy}_1]] = \lambda x.\lambda y.\ y \text{ buys } x$

ii. $[[\text{buy}_2]] = \lambda P_{<et>}.\ \lambda y.\ \exists x\ [\ P(x)\ \&\ y \text{ buys } x]$

⇒ *buy₂* takes a property P and an individual y and yields 'true' if there is an x, such that P(x) and y buys x.

⇒ Alternatively, Chung & Ladusaw (2004) introduce a non-saturating compositional semantic mechanism of ***Restriction***, which can be conceived of as a generalized version of ***Predicate Modification***, which allows for the combination of transitive <eet>-verbs with bare predicative object NPs (<et>). The object-argument position is then closed by ***Existential Closure*** at the VP/vP-level; see Heim (1982) and below.

(30) a.

VP **λy. ∃x[y buys x and x are books]**

∃   VP <eet> **λx.λy. y buys x and x are books**

V<eet>   NP <et>
buy   **books**
λx.λy. y buys x   **λz. z are books**

b. RESTRICT: If there is a node α with two syntactic daughters β of type <eet> and γ of type <et>, then $\mathbf{[[\alpha]] = \lambda x.\lambda y.[[\beta]](x)(y)\ \&\ [[\gamma]]\ (x) = \lambda x.\lambda y.\ R(y, x)\ \&\ P(x)}$

⇒ The rule of **Restriction** gives a straightforward account of Predicate Incorporation or pseudo-noun incorporation (PNI); see, e.g., Dayal (2004), Driemel (2019)

(31) a. Jan will **Auto fahren** ⇒ normally all SG count NPs require article
Jean wants car drive in German!
'Jean want to drive a car/cars.'

b. ouvre-boîte
open-bottle 'bottle opener'

⇒ In Drienel (2019), the effects of the syncategorematic rule of **RESTRICT** are coded in the covert category-changing operator effecing pseudo-noun incorporation:

(32) $[\![\text{RES}]\!] = \lambda P_{<et>}.\lambda Q_{<e,vt>}.\lambda e.\ \exists z\ [P(z) \wedge Q(z)(e)]$

⇒ Importantly for our purposes, combinations of transitive Vs plus bare object NPs are widespread in (West) African languages!!!

(33) a. Audu yaa [**ginà gidaa**] (Hausa, Zimmermann 2008)
Audu 3SG.PFV build house
'Audu built a house.'

b. Kɔ̀fí [**hú-ù ɔ̀tɔ̀mfʊ́**] (A&M 2013: 2)
Kofi see-PST blacksmith
'Kofi saw a blacksmith.'

3.5 Overt evidence for EC: The case of Bura (Zimmermann 2007)

Bura has a functional element *adi*, which signals Existential Closure

- The distribution of *adi:*

(34) a. pindar **adi** ata sa mbal **wa** (with negated events)
P. adi fut drink beer neg
'Pindar will not drink beer.'

b. akwa saka laga [*mda* **adi** ka mwanki ntufu] (existential clauses)
at time some person ADI with wife five
'Once upon a time, there was a man with five wives.'

c. *mda* **adi** [ti tsa kuga]. (existential clefts)
person ADI REL 3sg invite
'There is somebody that he invited. / SOMEBODY, he invited.'

(35) a. tsa **(*adi)** masta *su*
3sg ADI buy thing
'She bought something.'

b. *mda* **(*adi)** si
person ADI come
'Somebody/ A man came.'

- **EMPIRICAL GENERALIZATIONS:**

i. *adi* is mandatory (with most verbs) in negated clauses, cf. (34a);
in verbless existential clauses, cf. (34b), and in existential cleft-structures, cf. (34c).

ii. *adi* is illicit in affirmative episodic sentences, cf. (35ab).

iii. *adi* is not a dummy verb to be inserted in the absence of full lexical verbs:

- unlike verbs, *adi* precedes the aspectual marker (34a);
- *adi* can co-occur with lexical verbs (34a);
- lexical verbs are not obligatory in Bura clauses (36a);
- *adi* cannot co-occur in clefts with referential or quantified pivot (36b):

(36) a. sal-ni [mdi-r hyipa]
man-DEF person-of teaching
'The man is a teacher.'

b.**kubili* **adi** (an) [ti tsa kuga]
K. adi prt rel 3sg invite
INTENDED: 'It is Kubili that he invited.'

- ***Generalization:***

  adi occurs whenever an individual or event variable must be existentially bound and cannot be bound by *alternative means*

⇒ *adi* can co-occur with variable-introducing/predicative indefinite NPs, but never with referential or quantified expressions.

- ***Analysis**:*

In unmarked cases, variables introduced by indefinite subject and object NPs are existentially bound by the predicate-incorporating variant of the verb (37b) (van Geenhoven 1999)

(37) a. tsa **(*adi)** masta *su*
3sg ADI buy thing
'She bought something.'

b. [[masta su]] = [[masta_2]] ([[su]])

= $[\lambda P \in D_{<e,t>}.\lambda x \in D_e.\lambda e.\ \exists y\ [P(y)\ \&\ x \text{ bought } y \text{ in } e]\ ]\ (\lambda x \in D_e.\ \text{thing'}(x))$

= $\lambda x \in D_e.\lambda e.\ \exists y\ [\text{thing'}(y)\ \&\ x \text{ bought } y \text{ in } e]$

⇒ In the absence of lexical verbs, (34bc), some other element must existentially close off the indefinite variables: *adi*

⇒ the outermost argument of the verb, i.e. the event argument, cannot be closed off by the verb itself, hence another element must step in to existentially close off the event variable, as required under negation (34a).

Q: Why would existential (event) closure be mandatory under negation ?

⇒ The restriction in (38) is cross-linguistically attested for more familiar languages: see Herburger (2002) on Romance, and Zeijlstra (2004) on Germanic languages.

(38) $*[[\ \text{NEG}\ ]]\ (\lambda e.\ \varphi(e))$

(39) Yesterday, Peter did not see a cat. (= universal negative event negation)

i. $\neg\exists \mathbf{e}\ [\text{time}(e) \subseteq \text{yesterday'} \wedge \exists x\ [\text{cat'}(x) \wedge \mathbf{see'}(e, \text{peter}, x)]]$ (OK)
≈ **there is no event** of Peter's seeing a cat that took place yesterday

ii. $\exists \mathbf{e}\ [\text{time}(e) \subseteq \text{yesterday'} \wedge \exists x\ [\text{cat'}(x) \wedge \neg\mathbf{see'}(e, \text{peter}, x)]]$ (not available)
≈ there is an event of Peter not seeing a cat that took place yesterday

iii. $[\text{time}(g(e_1)) \subseteq \text{yesterday'} \wedge \exists x\ [\text{cat'}(x) \wedge \neg\mathbf{see'}(g(e_1), \text{peter}, x)]]$ (OK)
≈ the contextually given event e_1 of Peter not seeing a cat took place yesterday

- *Possible reasons behind (39ii):*

  Pragmatic account: Perhaps it is just too uninformative to negate an open event predicate, given that events are typically not sortally restricted and the complement set of event predicates is in principle unbounded.

⇒ Stating that there is a single event of Peter NOT seeing a cat leaves open too many possibilities to be asserted.

Conclusion:

i. Existential closure is an argument-saturating composition mechanism that is employed cross-linguistically in the interpretation of indefinite NPs and event predications in the absence of overt quantifiers or adverbial quantifiers.

ii. Existential closure saturates the argument position of a predicative (NP or clausal) constituents by existential binding: **there is an x**, such that P(**x**)

iii. The application of existential closure is transparently coded in existential sentences and in the Bura morpheme *adi*.

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