Quantifier Domain Selection and Pseudo-Scope

Kai von Fintel (fintel@mit.edu)

[Cornell Context-Dependence Conference, March 28, 1999]

OUTLINE

Quantifier domain selection
- via subset selection functions?
  - Pseudo-scope indefinites
    - via choice-functions?
    - Skolemization
    - ∃-closure or specificity?
  - Specific choice-function can do domain restriction!
    - Need intersectivity!
    - Intersective modifiers for both phenomena?
- ∃-closure over singleton subset selection functions?

Coda: The problem of modified numeral indefinites

Two Themes Throughout:

• Existential Closure vs. Contextual Salience

• Expressive Power of Choice-Functions

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* This work has been evolving for a while now. Some parts trace back to the few pages on the context-dependency of quantifiers in my dissertation. Reading Recanati's paper on domains of discourse made me rethink some of my earlier conclusions without in the end actually changing them much. Other parts formed the material for several discussions in my seminar on context-dependency at MIT in the fall of 1995, which included several sessions exploring the issues raised in an early version of Kratzer (1998). Connecting the choice function approach to indefinites with a general analysis of contextual domain restriction was an idea that I considered then without however working out any details. Conversations with Lisa Matthewson and studying her paper inspired me to tackle the problem again. Connections to questions about the context-dependency of conditional sentences (which are mentioned here briefly) also tickled my fancy, since I have been working on conditionals for a while now. Having the opportunity to present this material at the Vilem Mathesius Series (Prague, March 1998) provided the impetus to flesh out some of my vague thoughts. Major influences come from the work done in recent years at MIT by Lisa Matthewson (as already mentioned), Philippe Schlenker, Julie Legate, and Uli Sauerland. I thank Irene Heim, Lisa Matthewson, Orin Percus, Philippe Schlenker, and Jason Stanley for illuminating discussions about this material. At this point, I see this talk as a report on the state of the art, exploring an intriguing possible connection, but I do not claim substantial intellectual property rights. Mistakes are certainly mine, achievements are probably not.

1. CONTEXT-DEPENDENCE OF QUANTIFIERS

> Consider a statement *Everybody is having a good time*. I assume that you understand the sentence well enough. Now assume also that you are omniscient with respect to people having a good time: you know for each person that ever lived and for each time up to now whether or not that person was having a good time at that time. Under these conditions, you may still be in doubt about the truth of the statement for at least two reasons: first, you do not know when it was made; second, you do not know what class of people it was made about. It is unlikely that the speaker meant everybody in the universe. He may have meant everybody at some party, or every body listening to some philosophical lecture, and if so, then we have to know what party, or what lecture before we know even what was said, much less whether what was said is true. (Stalnaker 1972)

> Remember that part of the ordinary meaning of any idiom of quantification consists of susceptibility to restrictions; and that restrictions come and go with the pragmatic wind. (Lewis 1986: 164)

1.1 Literature: Kratzer (1978), Westerståhl (1984), Neale (1990), van Deemter (1992), von Fintel (1994), Roberts (1995), Stanley & Williamson (1995), Cooper (1996), Gawron (1996), Cresswell (1996), Recanati (1996), Musan (1997), Geurts & van der Sandt (1999), Stanley (1999), Stanley & Szabo (1999). (An even bigger list of works talks about the context-dependency of definite descriptions, which may or may not be the same topic.)

1.2 Contextual Domain Selection is observable with all quantifiers, it seems:[1]

(1) *James went to the undergraduate semantics class yesterday.*
He was intrigued by some remarkable facts about the students taking that class.

Every freshman comes from outside Massachusetts.
Most seniors are foreigners.
No linguistics major has taken any philosophy courses.
At least three women speak two Romance languages.

1.3 **Q**: Charitable re-interpretation vs. linguistically real domain restriction?
A: Charity would not explain upward monotone cases like *at least three*:

(2) A: *The undergraduate semantics class is remarkable.*
At least three women speak two Romance languages.
B: *That's false. All the women in the class are monolingual.*

(3) *Go to the undergraduate semantics class.*
If at least three women are interested in football, I'll give you $10.

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[1] This claim might need to be qualified. As discussed by Cooper (1996), there may in fact be a number of minimal pairs of quantifier constructions in English, which favor and disfavor contextual restriction (at least in episodic/non-generic contexts): *all the – all*, *most of the – most*, *many – lots of*. The difference between *all the* and *all* is quite well-known and is discussed for example by Partee (1995). Matthewson (1999b) explores this issue and suggests an account, which we can't discuss here.

1.4 **ANALYSES** (sketched by Neale 1990):

(i) "explicit": unpronounced element in the logical form of quantified structures
(ii) "implicit": domain restrictions as parameter of evaluation

1.5 For convenience (!), I will adopt the explicit approach.

(4) *Every freshman is from out of state.*

every [C & freshman] [out of state]

A slightly more explicit way of giving the LF:
every [λx. C(x) & freshman(x)] [λx. out of state(x)]

I'll try as much as possible to simplify the LFs presented on this handout.

In the LF of the sentence, a unpronounced element C of type <e,t> is present (say, as a sister to the common noun phrase argument of the quantifier). It is interpreted via intersective predicate modification with the common noun phrase (CNP) predicate (which is also of type <e,t>).

In the context given, C might be a function characterizing the set of participants in the undergraduate semantics class that is under discussion.

In my dissertation, I called the domain variables *resource domain variables (RDVs)*. This terminology has been adopted by a number of people.

1.6 In favor of localizing the domain selection effect inside the quantifier:

(5) (Westerståhl 1984) *Sweden is a funny place. Every tennis player looks like Björn Borg, and more men than women watch tennis on TV. But <u>most people</u> really dislike <u>foreign tennis players</u>.*

(6) (Soames 1986) *<u>Everybody</u> is asleep and is being monitored by <u>a research assistant</u>.*

This is not necessarily an argument for the explicit approach, see Recanati's response. But the phenomenon does constrain our options. In the end, the explicit and implicit approaches are probably semantically equivalent (see Creswell 1990, 1996); the argument will have to be syntactic (see von Fintel 1994, Stanley 1999).

1.7 **IMPLICIT DEPENDENCIES IN DOMAIN SELECTION**

(7) (Heim 1991) *Only one class was so bad that no student passed the exam.*

(8) only one [class] $\left[\lambda x. \left(x \text{ so bad that no } \left(C_x \text{\& student}\right) \left(\text{failed}\right)\right)\right]$

C is of type <e,<e,t>> here. $C_x(y)$ iff y is a student in x

more details: only one [λx. class(x)] $\left[\lambda x. \left(x \text{ so bad that no } \left(\lambda y.\ C_x(y) \text{ \& student}(y)\right) \left(\lambda y.\ \text{failed}(y)\right)\right)\right]$

Work on implicit variables and their behavior in quantified contexts: Mitchell (1986), Partee (1989, 1991), Condoravdi & Gawron (1996), and Creswell (1996).

Implicit dependencies have been used for a long time in the analysis of pronouns, see the system of Cooper (1975, 1979), adopted later by Heim (1990) for donkey pronouns, and used by Chierchia (1995) for definites in general. See also the chapter on E-type pronouns in Heim & Kratzer (1998).

1.8 **A POSSIBLE VARIANT**. Instead of positing a covert predicate variable that is intersected with the CNP denotation, we can also achieve the same result by assuming a covert element that selects a subset from the noun set:

(9) every $\left[C\left(\text{freshman}\right)\right]$ $\left[\text{out of state}\right]$

Here C would be of type <<e,t>,<e,t>>.

For C to be a subset selection function, the following has to hold:

$\forall P\text{: } C(P) \subseteq P$

1.9 In the semantics of adjectival modification, such functions are well-established. They correspond to the <u>subsective</u> class of adjectives. One might in fact think of C in (9) as a covert counterpart of adjectives like *relevant* or *salient*.

1.10 Subset selection is a strictly more powerful mechanism than intersection with a contextually supplied set. Subset selection functions in general might or might not have the following property:

(10) A subset selection function C is <u>monotonic</u> iff

$\forall P,R\text{: } P \subseteq R \Rightarrow C(P) \subseteq C(R)$.

An essentially equivalent way of expressing monotonicity, which makes obvious the connection to our previous implementation, is this:

(11) A subset selection function C is <u>intersective</u> iff

$\exists A\ \forall P\text{: } C(P) = A \cap P$.

1.11 If a subset selection function C is not monotonic the following inference would not go through:

(12) Every (C(student) (is from out of state)
∴ Every (C(freshman) (is from out of state)

Since this is a typical downward inference that we want to come out valid, we would need to require monotonicity of the subset selection functions used to effect domain narrowing.

1.12 Subset selection functions are sometimes used in the semantics of conditionals, where monotonicity is a requirement that is possibly not present. Inferences parallel to the one in (12) are often thought to be invalid in the case of conditionals. Monotonicity could also be argued to not obtain in the semantics of definite descriptions based on examples like these:

(13) (Lewis 1973, 1979) *The pig is grunting, but the pig with floppy ears is not grunting.*

(14) (McCawley 1979) *Yesterday the dog got into a fight with a dog. The dogs were snarling at each other for half an hour, I'll have to see to it that the dog doesn't get near that dog again.*

An alternative account for apparent non-monotonicity is that in these cases different subset selection functions are at work: surreptitious context-change (see von Fintel 1998, 1999).

1.13 Because in the case of domain narrowing for nominal quantifiers like *every*, *most*, etc. the added power of subset selection function might be unnecessary and in fact needs to be curbed by stipulated restrictions, we may want to stick with the simpler intersective analysis.

Keep this point in mind. It will recur as an issue when we discuss the device of choice-functions in the semantics of indefinites.

2. Unexpected Wide-Scope of Indefinites

2.1 Literature: Fodor & Sag (1982), Farkas (1981), Cormack & Kempson (1991), Enç (1991), Ludlow & Neale (1991), Ruys (1992), Abusch (1994), Cresti (1995), Reinhart (1997), Winter (1997), Kratzer (1998), Matthewson (1999a), Legate (1999), Schlenker (1999).

2.2 **Observation**: Some but not all quantificational noun phrases allow a reading where they take scope outside a syntactic island.

(15) *If at least three relatives of mine die, I will inherit a house.*

(not: a particular group of relatives which contains at least three members)

(16) *If every relative of mine dies, I will inherit a house.*

(not the same as *If any one relative of mine dies, …*)

(17) *If a relative of mine dies, I will inherit a house.*

(a particular one, not just any)

(18) *If three relatives of mine die, I will inherit a house.*

(particular group of three, not just any such group)

2.3 **Desideratum**: An analysis that does not rely on stipulating different syntactic scope options for different quantifiers, especially no island-violating covert movements. [This is negotiable in the end, of course.] So, while we want (17) to have a meaning corresponding to a logical form like

(19) $\exists\left[\text{relative of mine}\right]\left[\lambda x.\left(\text{if x dies, I will inherit a house}\right)\right]$

we want to get at this meaning without scoping the existential NP out of the *if*-clause.

2.4 **Heimian ∃-Closure at a distance won't work.**

(20) $\exists x\left(\text{if x is a relative of mine and x dies, I will inherit a house}\right)$

This does not capture the truth-conditions of (17). Under a material implication analysis of the conditional (surely inadequate, but similar problems arise under more sophisticated approximations), the sentence would in fact be trivially verified by any x that is not a relative of mine.

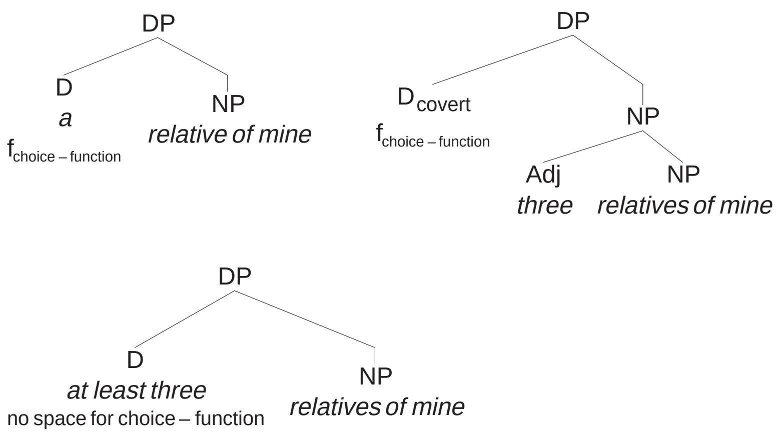
2.5 **PROPOSAL** (Reinhart): The apparent wide-scope reading is a "pseudo-scope" phenomenon (Kratzer's term). It is due to the availability of a <u>choice-function</u> mechanism.

2.6 **DETAILS.** Indefinite determiners are ambiguous: (i) standard existential quantifiers, (ii) choice-function variables.

(21) A function f (<<e,t>,e>) is a choice-function iff for any P: $f(P) \in P$

A choice-function chooses from any set a member thereof.

(22)



(23) $[\![\text{relative of mine}]\!]$ → true of any relative of mine

$[\![\text{relatives of mine}]\!]$ → true of any plurality each of whose members are relatives of mine

$[\![\text{three relatives of mine}]\!]$ → true of any plurality containing exactly three members each of whom are relatives of mine

Note: numeral treated as adjectival modifier of plural predicate.

(24) f(three relatives of mine)
→ denotes a particular group of three relatives chosen by f

2.7 Reinhart: choice-function variable is captured by ∃-closure

(25) *If three relatives of mine die, I will inherit a house.*
$\exists f \left[\text{CH}(f) \text{ \& if } f(\text{three relatives of mine}) \text{ die, then I will inherit a house} \right]$

There is a choice-function such that if the particular group chosen by the function from the set of groups containing exactly three relatives of mine is such that all members die, then I will inherit a house.

2.8 INTERMEDIATE PSEUDO-SCOPE

(26) *Most linguists have looked at every analysis that solves* $\left\{\begin{matrix}\textit{some}\\ \textit{a certain}\end{matrix}\right\}$ *problem*.

<u>intended reading:</u>

Not all linguists have focused on the same problem.
They haven't looked at every analysis that solves some problem or other.

Reinhart: ∃-closure can apply at intermediate clausal nodes

(27) most (linguists)

$$\Big(\lambda x.\ \exists f\ \Big(\text{every}\ \big(\lambda y.\ \text{analysis}(y)\ \&\ y\ \text{solves}\ f(\text{problem})\big)\ \big(\lambda y.\ x\ \text{has looked at}\ y\big)\Big)\Big)$$

Most linguists x are such that there is a choice-function such that x has looked at every analysis y that solves the problem chosen by f.

2.9 IMPLICIT DEPENDENCIES IN CHOICE-FUNCTION INDEFINITES?

Kratzer's point: apparent intermediate scope readings of indefinites can be analyzed by making the choice-function take an additional covert argument bound to a higher quantifier/operator. Then it becomes unnecessary to allow intermediate level ∃-closure. [We will soon see that Kratzer wants to do without existential closure anywhere.]

(28) ∃f: most (linguists)

$$\Big(\lambda x.\ \text{every}\ \big(\lambda y.\ \text{analysis}\ y\ \&\ y\ \text{solves}\ f_x(\text{problem})\big)\ \big(\lambda y.\ x\ \text{looked at}\ y\big)\Big)$$

There is a way f of pairing linguists with problems is such that most linguists x have looked at every analysis y that solves the problem chosen by f for x.

Implicit dependency favored by presence of overt bound pronouns and material like *certain* etc.

2.10 AN EMPIRICAL ARGUMENT FOR IMPLICIT INDEXING (Schlenker 1999)

Schlenker shows that the additional power of a system with additional implicit arguments for choice-functions is needed (he also points out that the functions needed are now properly called Skolem functions or Skolemized choice-functions):

(29) Every student in the syntax class has two weak points – John doesn't understand Case Theory and LF, Mary has problems with Binding and Theta Theory, etc. Before the final exam, the teacher says:

If each student makes progress in two (particular) areas, nobody will fail the exam.

On the intended reading, this sentence means that there are two topics per student such that if every student makes progress in the two topics relevant for him or her, nobody will flunk the exam.

(30) Not captured by Reinhart-style choice-functions:

$$\neq \text{if each}\left(\text{student}\right)\left(\lambda x.\ \exists f\left(\text{x makes progress in f}\left(\text{two areas}\right)\right)\right)\text{, then nobody fails}$$

$$\neq \exists f\left[\text{if each}\left(\text{student}\right)\left(\lambda x.\ \text{x makes progress in f}\left(\text{two areas}\right)\right)\text{, then nobody fails}\right]$$

(31) Captured by Kratzer-style choice-functions:

$$= \exists f\left[\text{if each}\left(\text{student}\right)\left(\lambda x.\ \text{x makes progress in } f_x\left(\text{two areas}\right)\right)\text{, then nobody fails}\right]$$

3. Existential Closure or Not?

3.1 Once the dependency of choice is encoded by covert arguments to the choice-function, Kratzer goes further and argues that the choice-function variable in fact remains free and has to be supplied a value by context. She suggests that choice-function indefinites are in fact "specific" indefinites (à la Fodor & Sag).

3.2 Matthewson's Evidence for Choice-Function NPs

Matthewson (1999a) carefully demonstrates that in St'át'imcets, quantifiers cannot be read distributively.

(32)

[tákem	i	sqáyqeycw-a]	wa7	xwey-s-twítas	[ta	smúlhats-a]
[all	PL.DET	man(PL)-DET]	PROG	love-CAUS-3PL.ERG	[DET	woman-DET]

'All the men love a woman.'

Rejected in context: Each man loves a different woman.

"There's just one lady. Can't mean a different one each. It sounds like you're talking about that one lady."

(33)

wa7	mitsaq-mín-as	[ta	twíw't-a]	[i	n7án'was-a	smelhmúlhats]
PROG	sit-APPL-3ERG	[DET	child-DET]	[DET.PL	two(HUM)-DET	woman(PL)]

'A child is sitting on two women'

<u>Accepted</u> in context: There is one child, who is sitting on two women's laps.
<u>Rejected</u> in context: A different child is sitting on each woman's lap.

"Wow! The young boy is sitting on two women's laps. Adventurous! At the same time, he's trying to sit on both."

(34)

[kalhás	i	skúl-a]	[az'-en-ítas	[i	q'ém'p-a	latám]
[three	DET.PL	school-DET]	buy-TR-3PL.ERG	[DET.PL	ten-DET	table]

'Three schools bought ten tables.'

(35) <u>OK</u>: 3 schools banded together and bought a total of 10 tables.
<u>OK</u>: 3 schools separately bought tables, the total number of tables was 10.
<u>NOT</u>: Each of 3 schools bought 10 tables. 30 tables were bought.
<u>NOT</u>: Each of 10 tables was bought by 3 schools. 30 schools were involved.

Matthewson argues that the only analysis that can capture the facts is one that employs choice-functions. The relevant St'át'imcets quantifiers are in fact choice-function NPs.

The obligatory wide-scope of these elements is only accounted for by not allowing intermediate ∃-closure.

Matthewson prefers an analysis that only allows top-level ∃-closure. She rejects Kratzer's contextual salience analysis b/c of lack of flavor of specificity/presuppositionality intuitions in St'át'imcets.

Prediction of the modified Kratzer-approach: bound variable pronouns should induce narrow scope and distributivity.

(36)

wa7	xwey-s-twítas	[i	nkekalhás-a	smelhmem'lhats
PROG	love-CAUS-3PL.ERG	[DET.PL	three(HUM)-DET	woman(DIMIN.PL)

i	zwat-en-**ítas**-a]	[i	n7án'was-a	twew'w'et]
DET.PL	know-TR-**3PL.ERG**-DET]	[DET.PL	two(HUM)-DET	boy]

'Two boys love three girls that they know'

<u>Accepted</u> in context: Two boys each love three different girls.

"It can be six girls. It's their own three girls."

3.3 ANOTHER ARGUMENT FOR ∃-CLOSURE (thanks to Philippe Schlenker for discussion)

(37) Less than 5 linguists have looked at every analysis that solves $\left\{\begin{array}{c}\text{some}\\ \text{a particular}\end{array}\right\}$ problem.

This sentence seems to have a reading that corresponds to intermediate existential quantification over choice-functions.

3.4 THE COST OF ABANDONING ∃-CLOSURE.

If we abandon ∃-closure following Kratzer, we have to make sure that the choice-functions that are used are monotonic/intersective:

(38) *If three relatives of mine die, I will inherit a house.*
∴ If three people I know die, I will inherit a house.

If three of my relatives die, I will inherit a house.
∴ If three of the people I know die, I will inherit a house.

(39) A choice-function f (type <e,t>,e>) is <u>monotonic</u> iff

$\forall P,R: P \subseteq R \Rightarrow f(P) \leq f(R)$

For plural predicates, this will ensure that the plurality chosen from the smaller predicate is part of the plurality chosen for the bigger predicate.

For singular predicates, this would ensure identity.

(40) A choice-function f is <u>intersective</u> iff

$\exists x\ \forall P: f(P) = x \vee f(P) = \max(P) \bullet x$

Here, max is the maximal element in a lattice-structured set of pluralities, and • is the mereological meet operation.

4. UNIFICATION?

4.1 AN IDEA (Matthewson 1999b)

Quantified NPs in St’át’imcets all have the following internal structure:

(41) Quantifier – DET – Predicate

tákem	i	smelhmúlhats-a
all	DET.PL	woman(PL)-DET

‘all the women’

The DET is the element that Matthewson argues in her 1999a paper is interpreted as a choice-function variable. Quantifiers can and apparently must take choice-function NPs as their first argument.

Analysis: the internal argument of the quantifier is the same as it would appear on its own, a group denoting phrase (the group chosen by the choice-function). The quantifier then quantifies over the members of the group.

Matthewson: St'át'imcets makes us see clearly how domain restriction works.

4.2 An Example:

(42) *All f(freshmen) are from out of state.*

f: a choice-function <<e,t>,e> picking out a particular plurality of freshmen

$[\![\text{all}]\!](x_{\text{plurality}})(P)$ iff $\forall y \leq x$: $P(y)$

The quantifier does not take the whole set denoted by the CNP as its first argument, has its domain 'narrowed down' to a particular plurality described by the CNP. The narrowing down is effected by a choice-function.

Quantifiers are of type <**e**,<<e,t>,t>>

not anymore: <**<e,t>**,<<e,t>,t>>

4.3 CAN'T ALLOW ∃-CLOSURE TO CAPTURE RDVS.

RDVs are to be supplied a contextually salient/relevant value. They cannot be allowed to be interpreted via existential closure (∃-closure). That would lead to trivialized meanings.

(43) *Everyone is having a good time.*
≠ There is a domain C such that everyone in C is having a good time.
= Everyone in the contextually salient/relevant domain C is having a good time.

(44) $\exists C_{\neq\varnothing}$ every $(C \,\&\, P)\ (R) \Leftrightarrow$ some $(P)\ (R)$

To have choice-function do the job of domain selection, in the face of this triviality danger, Matthewson has to revise her prior assumption that choice-function variables are subject to top-level ∃-closure. Now, she also allows contextually salient choice-function variables as an option. Which option is chosen is supposed to be a pragmatic issue.

4.4 NEED TO ENFORCE INTERSECTIVITY.

To maintain standard semantic assumptions about the logical properties of quantifiers, Matthewson will have to adopt a restriction to monotonic/intersective choice-functions. See also Sections 1.11 and 3.4.

4.5 AN ALTERNATIVE?

Instead of assimilating quantifier domain selection to pseudo-scope NPs, let's try it the other way round: pseudo-scope NP interpretation is a special case of domain selection. The idea would be that pseudo-scope indefinites involve standard existential quantifiers in situ. But their domain is narrowed in a particular way.

Consider what happens if domain selection applied to a predicate leaves us with a singleton set. For singular argument, we would have a singleton set of an individual. For plural argument, a singleton set of a plurality. When an indefinite quantifier now takes such a singleton set as its argument, its semantic contribution will be trivial.

Can singleton set domain restrictions do the job of choice-functions?[2]

(45) *If a relative of mine dies, I will inherit a house.*

$$\text{if } \exists \left(\text{C \& relative of mine}\right) \left(\text{dies}\right)\text{, then I will inherit a house}$$

(46) *Most linguists have looked at every analysis that solves some problem.*

$$\text{most} \left(\lambda x.\ \text{linguist } x\right) \left(\lambda x.\ \text{every} \left(\lambda y.\ \text{analysis } y \ \& \ \exists \left(\lambda z.\ F_x \, z \ \& \ \text{problem } z\right) \left(\lambda z.\ y \text{ solves } z\right)\right) \left(\lambda y.\ x \text{ looked at } y\right)\right)$$

We couldn't allow ∃-closure even if that were restricted to singleton sets. The problem of triviality would arise: there trivially exists a singleton set C such that if there is an element in C that is a relative of mine who dies, then … .

So, this account can only work if the singleton set variable is left free. We would have to combine the singleton set intersection analysis with a Fodor & Sag / Kratzer theory of specificity.

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[2] This was suggested in a term paper written for my Fall 1995 seminar by Uli Sauerland. Sauerland in his later work pursues the choice-function approach for other purposes.

4.6 Possible Advantages.

Pseudo-scope indefinites sometimes look like they behave like indefinites not like entity-denoting expressions, e.g. in *there*-insertion contexts:

(47) Some linguists dislike every paper in which there is a particular example of Chomsky's.

No need now for stipulative restrictions to monotonic/intersective functions. The domain variable type is simply <e,t> and nothing other than intersection can apply.

The analysis might give us a handle on the semantics of adjectives like *particular* or *specific*. These like to occur in pseudo-scope indefinites. Rather than attributing pseudo-scope behavior to indefinite determiners (overt or covert), one might prefer attributing it to overt or covert adjectives.

(48) If three particular relatives of mine die, I will inherit a house.

4.7 A Compromise?

Suppose one is persuaded that we need ∃-Closure for pseudo-scope indefinites (i.e. if they aren't in general specific/referential), but one still wants to maintain some of the possible advantages of a non-choice-function approach (presence of an existential quantifier in situ, adjectival type rather than determiner type).

One could then adopt a subset selection function approach.

Domain Restriction: free subset selection functions (restricted to those that are intersective)
Indefinites: ∃-closure over singleton subset selection functions

4.8 The Upshot

Context-dependency and intersectivity is a package deal

Context-dependency is needed at least for domain restriction

5. CODA: THE PROBLEM OF MODIFIED NUMERALS

Domain restriction? Yes:

(49) *Go to the undergraduate semantics class.*
If at least three nerds know e.e. cummings, I will eat my hat.

Wide-scope? No.

(50) *If at least three relatives of mine die, I will inherit a fortune.*

Is this really predicted? Let's assume we are given the following structures:

(51) at least three (C nerds)

(52) ∃ (C three relatives)

Why doesn't there seem to be a reading of (50) where the speaker has in mind a particular group of (exactly) three relatives. Let's assume that this group is picked out by the choice-function or subset-selection function. The quantifier *at least three* should be able to apply to that and yield a trivial claim about that group.

Quick way out: *at least three* (etc.) has a (presuppositional?) constraint against combining with an argument that would trivialize its contribution.

In this light, what makes the simple existential quantifiers (*a/some* and the covert one on top of bare numeral indefinites) special and allows pseudo-scope readings is that they don't have such qualms about who to combine with.

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