Special Quantification: Higher-Order Metaphysics and Nominalization Approaches

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Introduction

'Prior's Problem' (= the Substitution Problem (+ Objectivization Effect))

Impossibility of replacing the clausal complement of most attitude verbs by 'ordinary' NPs; only 'special quantifiers', that is, quantifiers like *something,* permit a replacement, preserving grammaticality or the same reading of the verb;

(1) a. John claims that he won.

    b. ??? John claims a proposition / some content / some thing / a claim.

    c. John claims *something*.

The generalization of Prior's Problem (Moltmann 2004, 2013)

The phenomenon generalizes to

- predicative complements

- complements of intensional transitives (*need, look for*)

- direct quotes as complements of verbs of saying, measure phrases, bare infinitives….

Further generalization

Special quantifiers can replace NPs that do not act as singular terms in argument positions, without leading to the Substitution Problem:

- (definite and bare) plural and mass NPs

- number words (*two*)

The higher-order approach to special quantifiers

Special quantifiers are genuine *higher-order quantifiers*, ranging over higher-order 'entities',

A related approach (Sainsbury 2008)

Special quantifiers are *substitutional quantifiers*, with substitution instances possibly involving concepts (conceptual structures) and objects themselves.

The Nominalization Theory of special quantifiers (Moltmann 2003a, 2004, 20113)

Special quantifiers range over the sorts of things that a corresponding *nominalization* would stand for, e.g. 'claims' in (1c), but *not* as argument of the embedding predicate.

The argument

There are a range of generalizations about special quantifiers that higher-order and substitutional approaches *cannot* account for and that are motivations for the Nominalization Theory. But the Nominalization theory may make use of higher-order quantification as well

The plan

1. The range of special quantifiers and pronouns in English and related languages

2. The Substitution Problem with complements

3. The Substitution Problem with NPs in referential positions

4. Linguistic properties of special quantifiers

5. Higher-order and substitutional analyses

6. Five problems for substitutional and higher-order analyses of special quantifiers

7. The Nominalization Theory in its general form, in its application to attitude reports, and in its possible application to other cases

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1. The range of special quantifiers and pronouns in English and related languages

In English

Something, everything, nothing, much, a lot, several things, one thing, two things

Special pronouns

That, what

Non-special quantifiers

Some thing, every thing, some object, some entity

Non-special pronouns

It, them, which

Special quantifiers in German

Alles 'everything', *nichts* 'nothing', *viel* 'much', *wenig* 'little', *etwas 'something', eines* 'one thing', *mehrere Dinge* 'several things', *das* 'that', *was* 'what'

Special quantifiers in French

Tout, rien, beaucoup, peu, quelque chose, une chose, plusieurs choses, le, ça, (ce) que

The special noun *word*

Word-NPs as complements of verbs of saying, in place of clausal complements or direct quotes (*the word 'help', only a single words, a few words*)

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2. Special quantifiers and the Substitution Problem 1: non-referential complements

[1]   Special quantifiers (and pronouns) can replace various sorts of nonreferential complements without giving rise to the Substitution Problem.

[2]   *Word*-NPs can replace complements of verbs of saying with giving rise to the Substitution problem

Clausal complements

(1) a. John claims that he won.

   b. ??? John claims a proposition / some content / some thing / a claim.

   c. John claims *something*.

(2) a. John said that he won the race.

   b. ??? John said a thing / an utterance / a proposition.

   c. John said *only one thing*.

   d. John said *a few words*.

Predicative complements (of copula verbs)

(3) a. Mary is / remained happy.

   b. ??? Mary is / remained a property.

   c. Mary is / remained *something enviable*.

DP complements of intensional transitive verbs

(4) a. John needs two assistants.

   b. ??? John needs a quantifier / a property / an entity.

   c. John needs *something*.

<u>Direct quotes as complements</u>

(5) a. John said 'great'.

    b. ??? John said the adjective 'great' / some expression.

    c. John said *something*.

    d. John said the word 'help' / just a single word.

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3. Special quantifiers and the Substitution Problem 2: plural and mass NPs in referential position

3.1. Definite plural NPs

(6) a. John counted the peas / ??? the sum / ??? the set of the peas.

    b. John counted *something*, the peas.

3.2. Bare plurals and mass nouns as kind terms

(7) a. John ate various *things* today, beans, peas, apples, and carrots.

    b. ??? John ate various *kinds* today, beans, peas, apples, and carrots.

3.3. Simple number words

(8) a. Two and two is four.

    b. *What* is two and two?

    c. ??? Which number is two and two.

(9) a. John added two to ten / *something* to ten.

    b. ??? John added the number four to ten.

(See Moltmann 2013 for the use of the Adjectival Strategy in natural language semantics.)

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4. Linguistic properties of special quantifiers

4.1. Special quantifiers as light quantifiers

<u>Special quantifiers with *-thing* are distinct from quantifiers with the ordinary noun *thing*</u>

[1]   *–thing* is a bound morpheme

(10) a. John is some thing.   (false)

    b. John is something.   (true)

[2]   Position of adjectival modifiers

(11) a. John said something nice.

    b. ??? John said some nice thing.

[3]   Absolutely unrestricted quantification

(12) a. Everything there is is abstract or concrete.

    b. ??? Every thing there is is abstract or concrete.

<u>Meaning of the ordinary noun *thing*</u>

Primary meaning: material objects and artifacts

<u>Syntactic structure of special quantifiers (Kayne 2005, Moltmann 2022)</u>

Combination quantifier/pronoun - light noun *thing* (overt or silent)

A lot: a lot ~~thing~~   *what*: what- ~~thing~~   *whatever*: what- ~~thing~~ – ever

<u>Other light quantifiers (Kayne 2005)</u>

Everybody, someplace, sometime.

-body, -place, and *-time* as overt versions of the light nouns PERSON, PLACE, and TIME

Kayne (2010): *where* is a determiner selecting a light noun:

 where-PLACE, *there*-PLACE, *what*-THING, *that*-THING, *when*-TIME

<u>Features of light nouns</u>

[1] Can remain silent without there being an antecedent.

[2] Belong to the functional part, rather than the lexical part of grammar and thus form a universal inventory

[4] Syntactic features strictly semantically determined (gender features, mass-count distinction)

[3] Special movement properties

<u>Light nouns as part of compounds</u>

Moltmann (2022): Proper names are compounds of a name and a silent light noun:

John-PERSON, *Berlin*-PLACE, France-PLACE *Sanssouci*-HOUSE, *Notre Dame*-HOUSE, *2022*-TIME, *two*-THING

PERSON, HOUSE are count, TIME, PLACE, THING are mass.

Therefore, *Berlin, France, 2022*, and *two* are treated as mass nouns in German.

4.2. Mass, count and superplural uses of special quantifiers

Mass and neutral uses of –*thing*-quantifiers

(13) a. John ate *something*, an apple.

    b. John ate *something*, brown rice.

    c. John ate *something*, the cookies.

    d. I brought you *something*, a cup, a plate, and a fork.

Count uses of –*thing*-quantifiers (Moltmann 2016, 2022, Sainsbury 2018)

(14) a. There are *two things* John does not like, the beans and the bread.

    b. John has evaluated *a few things*: the paintings, the sculptures, and the drawings.

      (distributive reading)

    c. There are *several things* John cannot distinguish: the cups, the glasses, and the plates.

      (collective, 'internal' readings)

    d. John needs two things, students and equipment.

4.3. Special quantifiers as non-nominal quantifiers ?

A common philosophers' view (Prior 1971, Rayo/Yablo 2001, Rosefeldt 2008, …)

Special quantifiers are non-nominal quantifiers.

Not to be understood syntactically

Special quantifiers *something, everthing* etc are nominal!

They require case (not assigned by adjectives or nouns)

(15) a. John is happy that he won / * John is happy something.

    b. the proof that he won / * the proof something

They can appear after prepositions

(16) John is happy about something / * John is happy about [that he won].

They cannot be extraposed

(17) It is true [that John won] / * It is true something.

Better candidates for syntactically non-nominal quantifiers

Philosophers' favorite example: *somehow, so, thus*

But adverbial quantifiers of this sort are highly restricted (* *everyhow*, * *nohow*)

Somewhere? But *somewhere*-PLACE (Kayne), *somewhere nice*.

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5. Substitutional and higher-order approaches to special quantifiers

5.1. Higher-order analyses of nonreferential complement constructions

Attitude verbs as 'prenectives'

(18) a. John claimed that S.

    b. C j S   (C first-order redicate to the left, connective or operator to the right)

Predicative complements

(19) a. John remained happy.

    b. R j H   (R first-order predicate to the left, second-order predicate to the right)

Intensional transitives applying to intensional quantifiers

(20) a. John needs at most one book.

    b. N j Q   (N first-order in first position, third-order in its second position)

Substitution problem is avoided.

5.2. The substitutional analysis of special quantifiers

Sainsbury (2018)

(21) 'X is V-ing something' is true iff something of the form 'X is Ving –' is a true
     vindicating instance.

Dealing with standard problems for substitutional quantification

Instead of quantifying over expressions, quantification over concepts, in extended range, as well as over objects themselves.

Special quantifiers in the plural

Counting substitution instances

Application to direct quotes? Extend language so as to contain quotes

Words NPs? Pronouns? Wh-clauses?

5.3. The higher-order analysis of special quantifiers

The higher-order view of special quantifier (Prior, Wright, Williamson, Rosefeldt, d'Ambrosio, and others):

Special quantifiers are higher-order quantifiers, ranging over possible denotations that are not individuals and cannot be referred to using singular terms *even in the metalanguage*.

(22) a. John claims something.

    b. ∃S CjS

(23) a. John is something.

    b. ∃F Fj

(24) a. John is looking for something.

    b. ∃Q LjQ

Extending the analysis:

Direct quotes?

Special quantifiers replacing definite plural and mass DPs:

Add sui generis plural and mass quantification (also in the metalanguage) (e.g. McKay 2008, McKay 2016)

(25) a. John counted something.

    b. ∃xx C(j, xx)

Modalized plural reference for kind terms (Moltmann 2013)

Special quantifiers in the plural ?

Quantification over higher-order pluralities (as many), but as countable?

Special pronouns

Reference to contextually given higher-order semantic values

Wh-pronouns: binding higher-order variables

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6. Problems for substitutional and higher-order approaches

5.1. Quantifier restrictions 1: adjectives

(26) a. Mary is something *admirable*, courageous.

    b. Sue is something *not uncommon*, nervous.

(27) a. John claimed something *outrageous*, that he is a genius.

b. John said something *strange*, that he is an alien.

 (28) John is looking for something *expensive*, a villa with a sea view.

Sainsbury (2018): 'Adjectives are not existentially committing'

But adjectives are first-order predicates.

Thus, no account available for substitutional or higher-order analyses:

(29) a. Some vindicating instance of 'Sue is ---' is not uncommon?

    b. For some F, Sue is F and F is uncommon?

6.2. Quantifier restrictions 2: relative clauses

[1] Special quantifiers can take relative clauses as restrictions whose empty position is syntactically and semantically incompatible with higher-order expressions or values.

Predicative complements

(30) a. Mary *is* something [that I *admire e* a lot], courageous.

    b. * I *admire* courageous.

(31) a. Bill *is* everything [Mary likes *e* in a man].

    b. * Mary *likes* wise in a man.

Relative clause operator does not bind variable in predicate position!

[2] Special relative clauses with variable in predicate position can fill in referential position:

(32) I *like* [what John has *become e*], very athletic.

Claual complements

Relative clause operator relates to position not accepting clausal complements:

(33) a. John *said* something I do not *like e*, that Sue is incompetent.

    b. * I do not like that Sue is incompetent.

(34) a. John *claimed* something I object *to e*, that the problem is solvable.

    b. * I object *to* that the problem is solvable.

(35) a. I *like* what John *said* e.

    b. * I *like* that Sue is competent.

Special quantifiers as complements of intensional transitive verbs

(36) a. John *needs* something that is hard to *get e*.

    b. John *needs* something that I have never *seen e* anywhere.

Relative clause operator does not relate to intensional quantifier position!

6.3. No factivity imposed by prosentential special quantifier restrictions

Evaluative predicates like *nice* trigger a factive reading of a subject clause, but not when restricting a special quantifier:

(37) a. [That Bill is talented] is *nice*.   (factive)

  b. Sue said something *nice*, [that Bill is talented].   (not factive)

Same phenomenon with factive predicates inside a relative clause:

(38) a. [That John won] *caused an uproar*.   (factive)

  b. John said something that *caused an uproar*, [that he won].   (not factive)

6.4. Identity statements

Clausal complements of attitude verbs (Moltmann 2003b, 2013)

(39) a. ??? John thought what Bill claimed, that it will rain.

  b. ??? John thought everything that Bill had claimed.

  c. John claimed what Bill claimed.

  d. John thought what Bill thought.

(40) a. ??? Joe hoped what Bill claimed, that it will rain.

  b. ??? Joe fears what Bill wrote, that it will rain.

Shared object not a propositional content, but a claim, a thought, a hope, a fear: an 'attitudinal object' or kind of attitudinal object

Complements of intensional transitives (Moltmann 2013, chap. 5)

Apparently no need for a shared attitudinal or modal object:

(41) a. John needed what he now has, a house.

  b. John needs what he is looking for, a computer.

(42) ?? John is looking for what Bill recognized, a genius.

The shared object of intensional transitives

Not a need or search, but 'the satisfaction of a need' or 'the satisfaction of a search'

The satisfaction of a need: objects in situations satisfying the need

= *variable satisfiers* of the need

In (41a): a (possible) house in a situation satisfying John's need = a house John has

In (41b): a (possible) computer in a situation satisfying John's need = a computer in a situation satisfying John's search.

Restrictions on direct quotes

(42) a. ??John whispered what Bill said, 'wow'

    b. John whispered what Bill whispered, 'wow'.

(Products of) phatic acts (Austin 1961) need to be the same, not quotes as such.

6.5. Inferences with quantificational complements of intensional transitives

Invalid inferences with intensional transitive verbs (Zimmermann 2006, Moltmann 2013)

Invalid inference from (50a) or (50b) to (50c):

(43) a. John needs at most two vaccines.

    b. John needs no vaccine.

    c. John needs something.

(44e) does not follow from (44a, b):

(44) a. John needs a visa to the US.

    b. Mary needs a visa to Russia.

    c. John needs a visa.

    d. Mary needs a visa.

    e. John and Mary need the same thing.

Solutions to the problem

Zimmermann (2006): *Something* quantifies over properties that are the 'exact match' of the need; Moltmann (2013, chap. 5): *Something* ranges over variable satisfiers of the need.

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7. **The Nominalization Theory of special quantifiers**

7.1. The Nominalization Theory in its general form

(45) The Nominalization Theory of special quantifiers

    Special quantifiers range over the very same entities that a corresponding nominalization

    would stand for.

With attitude verbs

 Special quantifiers range over *attitudinal objects* or kinds of them (claims, thoughts, assumptions etc.).

With copular verbs:

Special quantifiers range over *tropes* or kinds of them (happiness, sloppiness, wisdom, …).

With intensional transitives

Special quantifiers range over *variable satisfiers*.

With measure verbs

Special quantifiers range over *quantitative tropes* or kinds of them (weights, heights).

With verbs of saying taking direct quotes

Special quantifiers range over *utterances* - phatic objects ('sayings').

What the view leaves open

How do special quantifiers manage to range over such objects?

Two options

[1]   Special quantifiers introduce a 'new domain' of entities that would not have been present in the semantic structure without the special quantifier.

[2]   Special quantifiers pick up on the denotation of an underlying noun.

Semantics of special quantifiers with attitude verbs

Option 1: my older work (neo-Russellian semantics of attitude verbs Moltmann 2003, 2013)

Option 2: more recent work (Moltmann 2021): with connections to syntactic proposals by Kayne (2010), Harves/Kayne (2012), and Arsijenevic (2009)

7.2.   The nominalization theory of special quantifiers with attitude verbs

Attitude reports based on lexical decomposition in syntax (Arsijenevic (2009), Moltmann (2017, 2021), Matthews (2020)

(46) a. John claimed that S.

   b. John made (the) claim that S.

   c. John made [claim [that [~~claim~~ +ass] S]]

   d. John claim-made ~~claim~~ [that [[$_{force}$~~claim~~ +ass] S]]

The general assumption

Attitude verbs are derived from light verb-noun combinations

Related syntactic views: Harves/Kayne (2012) *need = have need*, Hale/Kayser (2002) lexical decomposition of verbs in syntax more generally (*walk = take a walk*).

Special quantifiers with attitude verbs

The idea: The light noun *-thing* forms a compound with the nominal from which the attitude verb is derived.

(47) a. John claimed something.

    b. John claim-made [some ~~claim~~-thing]

    c. The denotation of [claim-thing] = the denotation of [claim$_N$]

(48) * [claim-proposition], * [claim-object]

Verbs of saying with direct quotes

Direct quotes as predicates of phatic objects (utterances)

(49) a. John said 'wow'.

    b. ∃d(make(John, d) & saying(d) & ['wow'](d))

(50) a. John said something.

    b. John said a word.

    c. John say-make some ~~say~~-thing.

    d. John say-make a ~~say~~-word.

    e. [say-word], *[say-noun], *[say-expression]

7.3. Further applications

(51) a. John is something.

    b. For some noun / concept N, John is some N-thing

    c. For some noun / concept N, John N-is some ~~N~~-thing.

    d. the denotation of [happy-thing] = the denotation of *happiness*

    e. * [happy-property]

The nature of the analysis

Higher-order-quantification + syntactic and semantic nominalization + incorporation:

Quantification over both predicate denotations and tropes (kinds of tropes)

Carrying the view over to intensional transitives

(52) a. John needs$_2$ a computer.

    b. John have need$_2$ for a computer.

(53) a. John needs$_2$ something.

    b. John have some need$_2$-thing.

    c. John need-have some ~~need$_2$~~-thing.

Special quantifiers in place of definite plurals:

(54) a. John counted something, the beans

    b. For some xx, John counted some xx-thing,

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8. Conclusions

[1] Substitutional and higher-order analyses of special quantifiers, though they account for the Substitution Problem, are inadequate, given the linguistic facts.

[2] The semantics of special quantifiers is closely tied to nominalizations (or perhaps underlying nouns), and the presence of light nouns arguably plays a central role in their syntax and semantics.

[3] The semantic analysis of philosophically important linguistic phenomena such as special quantifiers may not be able to proceed without taking recent work in syntax seriously.

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