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Where is the parameter in SAME?

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Puzzle: SAME among Equation Constructions

Equation constructions

(1) Mary met as tall a boy **as** [Sue did] — Equating degrees
COMPARE — PM PARAMETER — SM STANDARD
(PM: parameter marker; SM: standard marker)

(2) Mary danced **as** Sue did. — Equating manners

(3) Mary met the same boy **as** Sue did. — Equating individuals

- (1-3) share the standard marker (SM) *as*;
- (1-3) involve the semantics of 'equating' some objects

Haspelmath and Buchholz (1998)'s generalization

The parameter marker (PM) generally exists in equatives but not similatives.

(4) Mary met *(as) tall a boy as Sue did. — Equatives

(5) Mary (*as) danced as Sue did. — Similatives

Rett (2013)'s proposal

The existence of PM correlates with whether lexicalized arguments are equated:

- (4) equates degrees:
  ⇒ degrees are lexicalized arguments of the gradable adjective (parameter)
- (5) equates manners:
  ⇒ manners are **not** lexicalized arguments of the verb

Question: SAME?

For SAME: (6) equates individuals ⇒ individuals are lexicalized arguments of WHAT?

(6) a. Hesperus is the same as Phosphorus.
b. Mary met the same boy as Sue did.

Rett (2013) briefly mentions *the same* is the PM but then it is unclear which part in (6) is the parameter.

- One possibility: the verb or the nominal is the parameter? – Rejected for 2 reasons:
  Reason 1: Not parallel

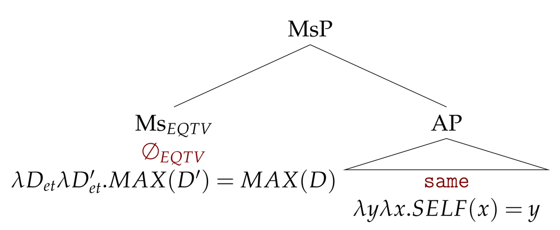
  (7) a. Hesperus is as *big* as Phosphorus.
  b. Mary met as *tall* a boy as Sue did.

  Reason 2: Gradable adjectives can be viewed as 'parameters' because they denote a property that needs to be fixed relative to some abstract measurements (e.g. degrees); Verbs and nominals: their semantics do not need to be fixed by any measurement.

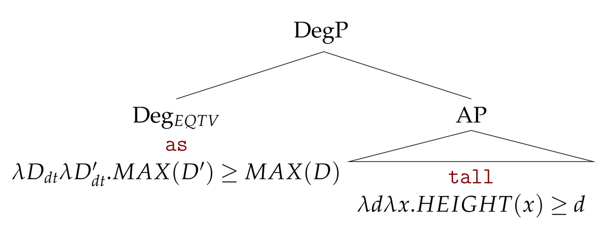
Proposal: *same* as the parameter

(8) The parallel between scalar equatives and SAME can be maintained if:

a. *Same*-constructions



b. Scalar equatives



- The parameter is *same*, which encodes a (general) measure function *SELF*:

  (9) a. $SELF = \lambda x.x$
  b. $[\![same]\!] = \lambda y\lambda x.SELF(x) = y$
  $= \lambda y\lambda x.(x = y)$

  SELF is a function that maps an individual to itself, just like:
  HEIGHT is a function that maps an individual to the degree of its height.

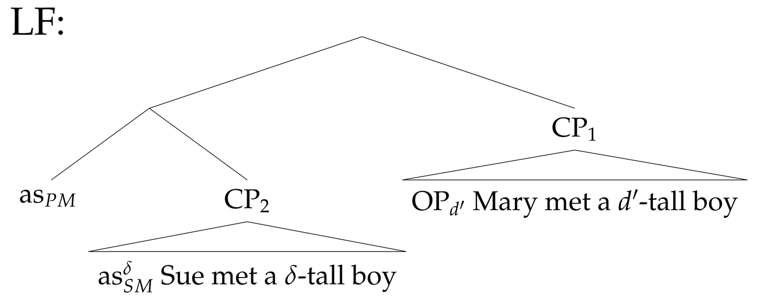
- The PM is a null equation head which selects for the AP headed by *same*; semantically it is an individual quantifier which equates the maximal member of two sets of individuals

Deriving SAME

Illustrate some assumptions by deriving a scalar equative

(10) Mary met as_{PM} tall a boy as_{SM} [Sue did].

LF:



- The degree quantifier as_{PM} scopes out due to type mismatch and leaves a variable d'
- There is a null *wh*-operator in the matrix clause which abstracts over the variable d'
- The standard is an elided clause, and the degree argument gets valued by a free variable δ
- The standard marker as_{SM} binds the free variable as a relativizer with an unspecified domain: $[\![as_{SM}S^{\delta}]\!] = \lambda d.[\![S^{\delta}]\!][d/\delta]$

Semantics: $[\![as_{PM}]\!]\ (\lambda d.\exists z[met(s,z) \wedge boy(z) \wedge tall(z,d)])\ (\lambda d'.\exists z'[met(m,z') \wedge boy(z') \wedge tall(z,d')])$
(in which: $[\![as_{PM}]\!] = \lambda D_{dt}\lambda D'_{dt}.MAX(D') \geq MAX(D)$, $tall(z,d)$ stands for $HEIGHT(z) \geq d$)

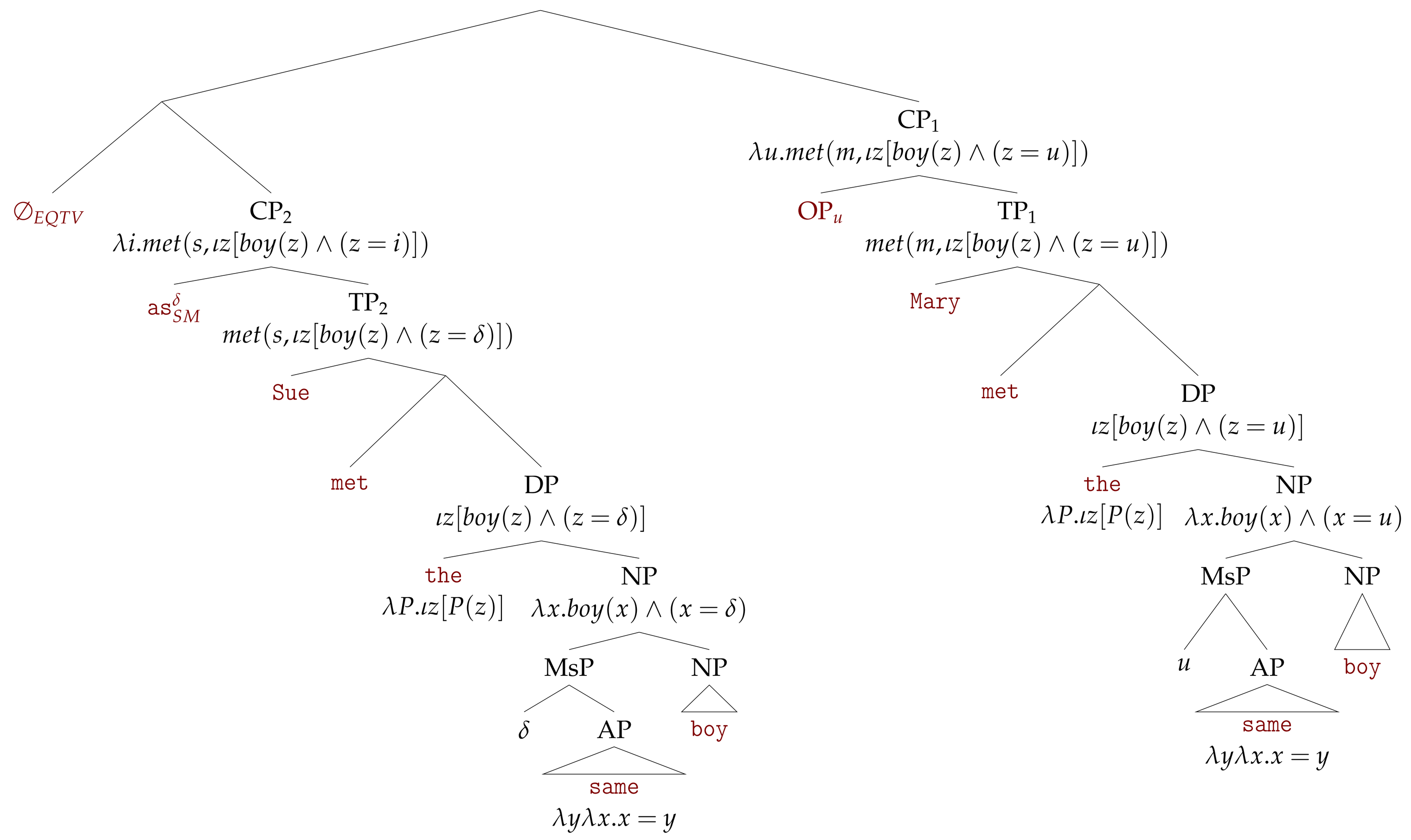
$[\![(10)]\!] = MAX(\lambda d.\exists z[met(m,z) \wedge boy(z) \wedge tall(z,d)]) \geq MAX(\lambda d'.\exists z'[met(s,z') \wedge boy(z') \wedge tall(z,d')])$

'The maximal member of the set of degrees which do not exceed the height of the boy that Mary met IS equal or larger than the maximal member of the set of degrees which do not exceed the height of the boy that Sue met'

Deriving SAME

(11) Mary met the $\emptyset_{EQTV}$ same boy as_{SM} [Sue did].

LF: $\emptyset_{EQTV}$ ([$_{CP_2}$ as^{δ}_{SM} Sue met the δ-same boy]) ([$_{CP_1}$ OP_u Mary met the u-same boy])



- The individual quantifier $\emptyset_{EQTV}$ scopes out and leaves a variable u
- There is a null *wh*-operator in the matrix clause which abstracts over the variable u
- The standard is an elided clause and the individual argument gets valued by a free variable δ
- The standard marker as_{PM} abstracts over the free variable and results a set of individuals:
  $[\![as_{SM}S^{\delta}]\!] = \lambda i.[\![S^{\delta}]\!][i/\delta]$ (i is type e)

Semantics: $[\![\emptyset_{EQTV}]\!]\ (\lambda i.met(s,\iota z[boy(z) \wedge (z = i)]))\ (\lambda u.met(m,\iota z[boy(z) \wedge (z = u)]))$

- $[\![\emptyset_{EQTV}]\!]=\lambda D_{et}\lambda D'_{et}.MAX(D') = MAX(D)$

$[\![(11)]\!] = MAX(\lambda i.met(m,\iota z[boy(z) \wedge (z = i)])) = MAX(\lambda u.met(s,\iota z[boy(z) \wedge (z = u)]))$

'The maximal member of the set of individuals which are the boy that Mary met IS the maximal member of the set of individuals which are the boy that Sue met'

Further argument for $\emptyset_{EQTV}$: Deriving the internal reading

A 'notorious' property of SAME: it can license an internal reading when modifying a singular nominal host (Brasoveanu 2011, Barker 2007), which is uncommon among relational terms.

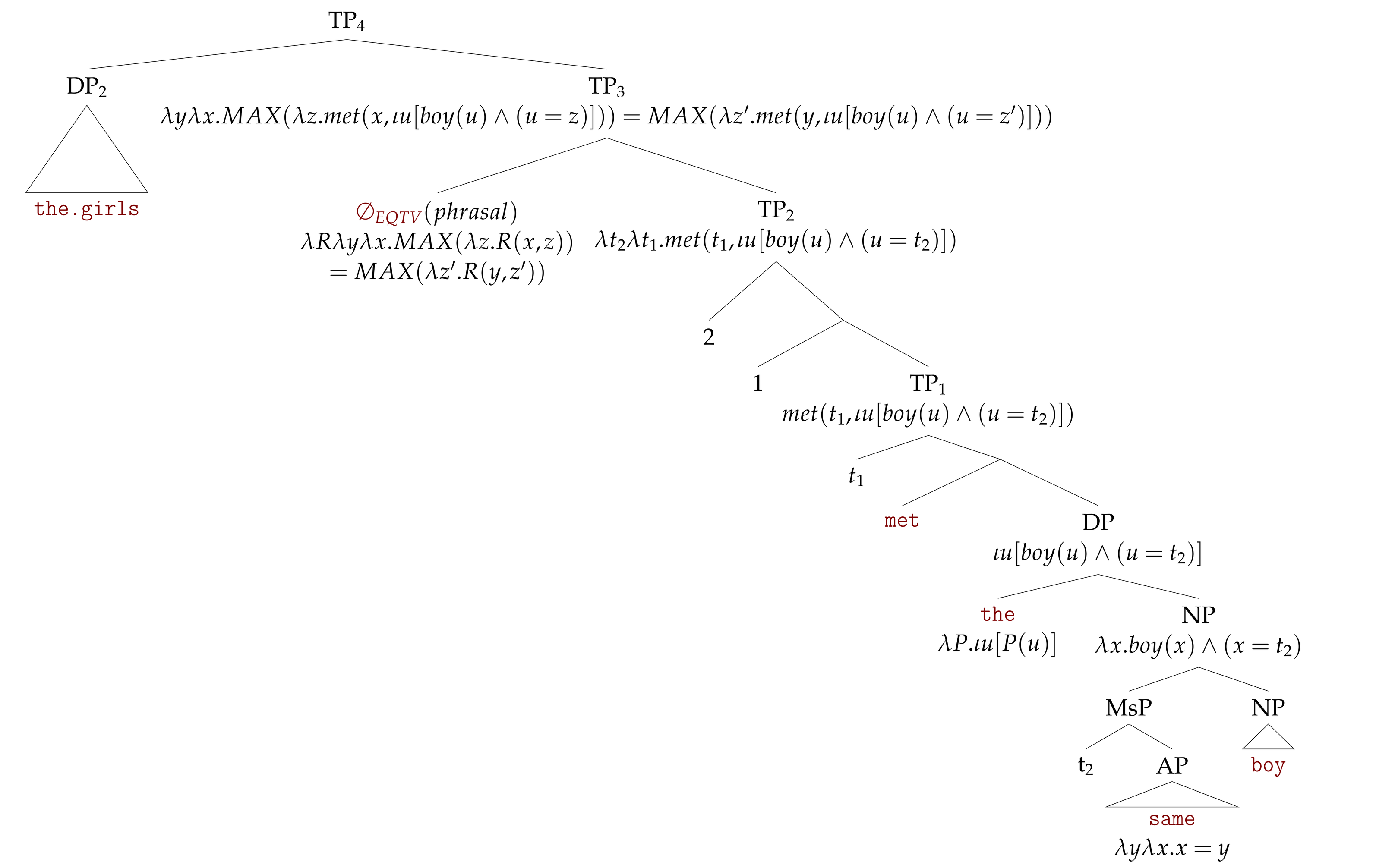
(12) a. The girls met the same boy.
b. Every girl met the same boy.

(13) a. #The girls met {an, the} identical boy.
b. #Every girl met {an, the} identical boy.

The existence of a null PM in our proposal can account for such an internal reading!

(14) a. $[\![\emptyset_{EQTV}]\!]$ (clausal) $= \lambda D_{et}\lambda D'_{et}.MAX(D') = MAX(D)$
b. $[\![\emptyset_{EQTV}]\!]$ (phrasal) $= \lambda R_{\langle e,et\rangle}\lambda y_e\lambda x_e.MAX([\lambda z.R(x,z)]) = MAX([\lambda z'.R(y,z')])$

(15)



- The (phrasal) PM scopes out and leaves a variable t_2 (type e) in situ; the variable t_2 saturates the identity relation and yields a property 'being equivalent to t_2'
- The parasitic scope (Barker 2007) is applied such that the plural subject *the girls* is also scoped out (and leaves a type e variable t_1) and the λ-abstraction of t_2 follows right after that of t_1

The potential type mismatch between $[\![TP_3]\!]$ and $[\![DP_2]\!]$ triggers the application of *Hmg* (homogeneity, based on Beck 2000, 2001; Schwarzschild 1996):

(16) a. Operation *Hmg*: For any symmetric relation R, $[\![R^{Hmg}]\!] = \lambda X.\forall x,y \leq X[R(x,y)]$.
b. 'Darci is like Betty' → 'The girls are alike'.

(17) $[\![TP_3^{Hmg}]\!] = \lambda X.\forall x,y \leq X$
$[MAX(\lambda z.met(x,\iota u[boy(u) \wedge (u = z)])) = MAX(\lambda z'.met(y,\iota u[boy(u) \wedge (u = z')]))]$

(18) $[\![TP_4]\!] = \forall x,y \leq G$
$[MAX(\lambda z.met(x,\iota u[boy(u) \wedge (u = z)])) = MAX(\lambda z'.met(y,\iota u[boy(u) \wedge (u = z')]))]$

Conclusion

- The current proposal maintains Rett's generalization about equation constructions by analyzing the word *same* as a parameter (which encodes a measure function involving individuals as measurement) and posting a null equation head as the parameter marker (PM);
- The existence of the null equation head is further supported by the fact that it is a scope-taking head which can derive the internal reading of SAME with a singular nominal host.

Selected References. Haspelmath, Martin, and Oda Buchholz. 1998. Equative and similative constructions in the languages of Europe. In Adverbial constructions in the languages of Europe, ed. Johan van der Auwera and Dónall Ó Baoill, 277–334. Berlin: Mouton de Gruyter. | | Rett, Jessica. 2013. Similatives and the argument structure of verbs. Natural Language & Linguistic Theory 31:1101-1137. | | Alrenga, Peter. 2007. Dimensions in the semantics of comparatives. PhD Thesis, University of California, Santa Cruz. | | Barker, Chris. 2007. Parasitic scope. Linguistics and Philosophy 30:407-444. | | Kennedy, Christopher. 2007. Modes of comparison. In Proceedings from the annual meeting of the Chicago Linguistic Society, volume 43, 141-165. Chicago Linguistic Society.
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