

DIRECT COMPOSITIONALITY

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SEMANTICS

INTERFACE OBJECTS (WITH MARKUP)

Morpho-phonology

- will laugh; John
- will laugh : +k.s; John : -k

Semantics

- [John : (et)t]_x ⊢ will(laugh x) : t
- [John : (et)t]_x^{-k} ⊢ will(laugh x)^{+k.s} : t

SEMANTICS (MERGE1)

syntax

$$\frac{=X.\alpha; \alpha_1; \dots; \alpha_j \quad X; \beta_1; \dots; \beta_j}{\alpha; \alpha_1; \dots; \alpha_j; \beta_1; \dots; \beta_j}$$

semantics

$$\frac{\Gamma \vdash M^{=X.\alpha} : ab \quad \Delta \vdash N^X : a}{\Gamma, \Delta \vdash (M N)^\alpha : b}$$

SEMANTICS (MERGE2)

syntax

$$\frac{=x.\alpha; \alpha_1; \dots; \alpha_j \quad x\beta; \beta_1; \dots; \beta_j}{\alpha; \alpha_1; \dots; \alpha_j; \beta; \beta_1; \dots; \beta_j}$$

semantics

$$\frac{\Gamma \vdash M^{=x.\alpha} : ab \quad \Delta \vdash N^{x.\beta} : (ac)c}{\Gamma, [N : (ac)c]_x^\beta, \Delta \vdash (M x)^\alpha : b}$$

SEMANTICS (MOVE1)

syntax

$$\frac{+y.\alpha; \alpha_1; \dots; \alpha_{i-1}; -y; \alpha_{i+1}; \dots; \alpha_j}{\alpha; \alpha_1; \dots; \alpha_{i-1}; \alpha_{i+1}; \dots; \alpha_j}$$

semantics

$$\frac{\Gamma, [N : (ac)c]_x^{-y}, \Delta \vdash M^{+y.\alpha} : c}{\Gamma, \Delta \vdash N(\lambda x.M)^\alpha : c}$$

SEMANTICS (MOVE2)

syntax

$$\frac{+y.\alpha; \alpha_1; \dots; \alpha_{i-1}; -y\alpha_j; \alpha_{i+1}; \dots; \alpha_j}{\alpha; \alpha_1; \dots; \alpha_{i-1}; \alpha_j; \alpha_{i+1}; \dots; \alpha_j}$$

semantics

$$\frac{\Gamma, [N : (ac)c]_x^{-y.\alpha_j}, \Delta \vdash M^{+y.\alpha} : b}{\Gamma, [N : (ac)c]_x^{\alpha_j}, \Delta \vdash M^\alpha : b}$$

EXAMPLE

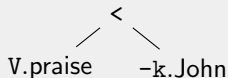
$$\frac{\frac{\frac{\vdash \mathbf{john}^{\text{d.}-k} : (et)t \quad \vdash \mathbf{laugh}^{\text{=d.v}} : et}{\vdash \mathbf{john} : (et)t_x^{-k} \vdash \mathbf{laugh} x^v : t} \quad \vdash \mathbf{will}^{\text{=v.+k.s}} : tt}{\vdash \mathbf{john} : (et)t_x^{-k} \vdash \mathbf{will}(\mathbf{laugh} x)^{\text{+k.s}} : t}}{\vdash \mathbf{john} (\lambda x.\mathbf{will} (\mathbf{laugh} x))^s : t}$$

OBJECT POSITIONS

TRANSITIVITY

A simple transitive verb looks as follows:

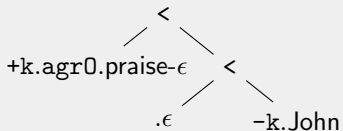
praise : =d.V



TRANSITIVITY

A simple transitive verb looks as follows:

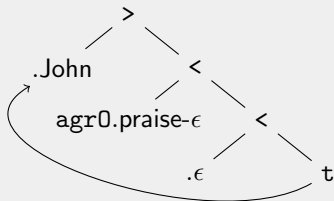
praise : =d.V



TRANSITIVITY

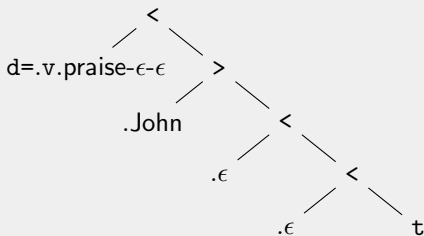
A simple transitive verb looks as follows:

praise : =d.V



TRANSITIVITY

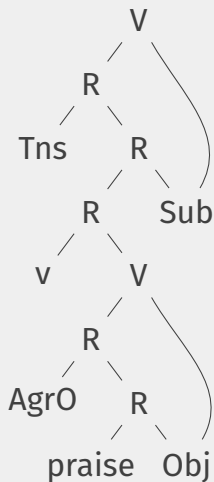
A simple transitive verb looks as follows: praise := d.V



EXAMPLE

$$\vdash \mathbf{john}^{\text{d.}-k} : (et)t \quad \vdash \mathbf{praise}^{\text{=d.V}} : eet$$
$$\frac{[\mathbf{john} : (et)t]_x^{-k} \vdash \mathbf{praise} x^V : et \quad \vdash \mathbf{AgrO}^{\text{=V.+k.agrO}} : (et)e}{[\mathbf{john} : (et)t]_x^{-k} \vdash \mathbf{AgrO}(\mathbf{praise} x)^{\text{+k.V}} : et}$$
$$\frac{[\mathbf{john} : (et)t]_x^{-k} \vdash \mathbf{AgrO}(\mathbf{praise} x)^{\text{+k.V}} : et}{\mathbf{john} : (et)t \oplus \lambda x. \mathbf{AgrO}(\mathbf{laugh} x) : eet}$$
 Doesn't work

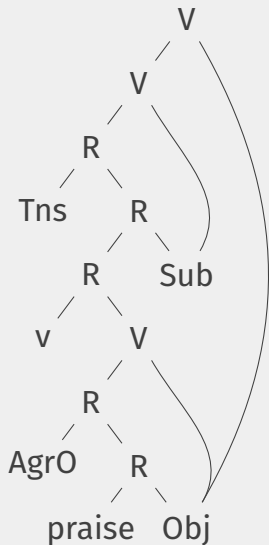
WHAT WENT WRONG?



praise is saturated only after SUB is merged

OBJ is retrieved before *praise* is saturated

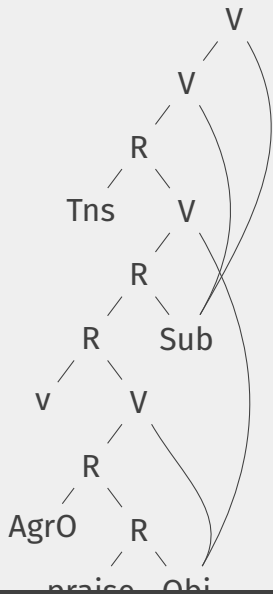
STANDARD SOLUTION



To infinity and beyond

OBJ QRs at LF

GO WITH THE FLOW



Every DP has a -q feature

dp : d.-k.-q

TP also checks 'q'

Tns : =v.+k.+q.t

vP checks 'q' *after* SUB is merged

v : =d.+q.v