F11 Exercise

Course in Semantics · Ling 531 / 731
McKenzie · University of Kansas

Key

1. Explain how currying works.[1]

Currying involves taking an n-place function and breaking it down into a sequence of n-many 1-place functions.

2. Fill in the blank spots

(1)	{ x ∈ D | { y ∈ D | y saw x } }	f : D → { g | g : D → { 1, 0 } } for all x ∈ D, f(x) = g : D → { 1, 0 } for all y ∈ D, g(y) = 1 iff y saw x	λx ∈ D.λy ∈ D. saw(x)(y)
(2)	{ x ∈ D | { z ∈ D | z knows x } }	f : D → { g | g : D → { 1, 0 } } for all x ∈ D, f(x) = g : D → { 1, 0 } for all z ∈ D, g(z) = 1 iff z knows x	λx ∈ D.λz ∈ D. knows(x)(z)
(3)	{ x ∈ D | { y ∈ D | y likes x } }	f : D → { g | g : D → { 1, 0 } } for all x ∈ D, f(x) = g : D → { 1, 0 } for all y ∈ D, g(y) = 1 iff y likes x	λx ∈ D.λy ∈ D. likes(x)(y)

3. β-Convert each of the following λ-expressions (*i.e.* give the result of plugging in these arguments). Then, give the English expression that corresponds to that result.

1. [λz ∈ D.λy ∈ D. hugged(z)(y)](Asia)(Yolanda)

   hugged(Asia)(Yolanda) ; Yolanda hugged Asia

2. [λx ∈ D.λy ∈ D. called(x)(y)](Imogen)(Barry)

   called(Imogen)(Barry) Barry called Imogen

4. Write the denotations of the following English expressions as functions, using the λ-notation.

1. *smash*

   λx ∈ D.λy ∈ D. smash(x)(y)

2. *carry*

   λx ∈ D.λy ∈ D. carry(x)(y)

[1] or: Explain how schönfinkelization works.