F25-Exercise

Course in Semantics · Ling 531 / 731

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1 Abbreviation of complex types

unabbreviated	**abbreviated**	**domain name**
$\langle e, t\rangle$		D_{et}
$\langle e, e\rangle$	ee	
$\langle e, \langle e, t\rangle\rangle$	$\langle e, et\rangle$	
$\langle\langle e, t\rangle, t\rangle$		$D_{et,t}$
	$\langle et, e\rangle$	$D_{et,e}$
$\langle d, \langle e, t\rangle\rangle$		$D_{d,et}$
$\langle\langle e, t\rangle, \langle e, t\rangle\rangle$	$\langle et, et\rangle$	
$\langle\langle e, t\rangle, \langle\langle e, t\rangle, t\rangle\rangle$		

2 Abbreviation of Lambda-expressions

fully written	**subscript type**	**no type**
$\lambda x \in D_e$. dog(x)	λx_e. dog(x)	λx. dog(x)
$\lambda y \in D_e$. walk(y)		
		λz. orange(z)
	$\lambda x_e \lambda y_e$. take(x)(y)	$\lambda x \lambda y$. take(x)(y)
$\lambda x \in D_e . \lambda z \in D_e$. see(x)(z)		
$\lambda a \in D_e . \lambda b \in D_e$. hire(a)(b)		
$\lambda f \in D_{\langle e, t \rangle} . \lambda y \in D_e$. f(y)	$\lambda f_{et} \lambda y_e$. f(y)	
$\lambda f \in D_{\langle e, t \rangle} . \lambda g \in D_{\langle e, t \rangle}$. $\exists x$[f(x) = 1 & g(x) = 1]		

3 Removal of = 1

(Abbreviate types and lambdas, while you're at it)

⟦ *the* ⟧	$\lambda f \in D_{\langle e, t\rangle}.\ \iota x \in C[\ f(x) = 1\ ]$	$\lambda f_{et}.\ \iota x[\ f(x)\ ]$
⟦ *red car* ⟧	$\lambda x \in D_e.\ red(x) = 1\ \&\ car(x) = 1$	$\lambda x_e.\ red(x)\ \&\ car(x)$
	$\lambda x \in D_e.\ happy(x) = 1\ \&\ dog(x) = 1$	
⟦ *every* ⟧	$\lambda f \in D_{\langle e, t\rangle}.\lambda g \in D_{\langle e, t\rangle}.\ \forall x[\ f(x) = 1 \rightarrow g(x) = 1\ ]$	
⟦ *no* ⟧	$\lambda f \in D_{\langle e, t\rangle}.\lambda g \in D_{\langle e, t\rangle}.\ \neg\exists z[\ f(z) = 1\ \&\ g(z) = 1\ ]$	
⟦ *some* ⟧	$\lambda f \in D_{\langle e, t\rangle}.\lambda g \in D_{\langle e, t\rangle}.\ \exists x[\ f(x) = 1\ \&\ g(x) = 1\ ]$	