

EXERCISE ON FOCUS

We have examined the denotations of NatLg names, predicates, intermediate constituents and sentences (for a given or arbitrary situation s), and we have proposed two semantic rules to obtain them compositionally, namely Non-Branching Nodes and Functional Application. (Predicate Modification is not relevant for this exercise.) This is exemplified in (1).

(1) For any arbitrary situation s ,

	IP		$[[IP]]^s = [\lambda x. DANCE(x)]$ (b)
	/ \		$= DANCE(b)$
$[[NP]]^s = b$	NP	VP	$[[VP]]^s = \lambda x. DANCE(x)$
$[[N]]^s = b$	N	Y	$[[V]]^s = \lambda x. DANCE(x)$
$[[Betty]]^s = b$	Betty	dances	$[[dances]]^s = \lambda x. DANCE(x)$

Besides these “regular” denotations or Ordinary Semantic Values¹, it has been proposed that sentences with focus stress have a Focus Semantic Value that is also computed compositionally. As the example (2) illustrates, the Focus Semantic Value of an expression α is the set containing α 's denotation plus the denotations that would result if the focused constituent in α was replaced by some other constituent of the same semantic type:

(2) Al introduced BILLY to Mark.

a. Denotation:
 $[[Al\ introduced\ BILLY\ to\ Mark]]^s = INTR(a, bill, m)$

b. Focus Semantic Value:
 $[[Al\ introduced\ BILLY\ to\ Mark]]^{s,F}$
 $= \{ INTR(a, bill, m), INTR(a, sue, m), INTR(a, kate, m), INTR(a, pat, m) \dots \}$
 $= \{ INTR(a, x, m) : x \in D_e \}$

Your first task is to spell out the compositional Focus Semantic Value rule that will let you complete the computation in (3):

(3)

	IP		$[[IP]]^{s,F} = \{ INTR(a, x, m) : x \in D_e \}$
	/ \		
$[[AI]]^{s,F} = \{a\}$	AI	VP	
		/ \	
	V'	(to) Mark	$[[Mark]]^{s,F} = \{m\}$
	/ \		
	introduced	BILLY	$[[BILLY]]^{s,F} = \{x : x \in D_e\}$
$[[introduced]]^{s,F} =$			
$\{ \lambda x \lambda y \lambda z. INTR(z, x, y) \}$			

¹ For simplicity, we are assuming that the Ordinary Semantic Value of an expression is its extension or denotation. By the end of the semester we will have learnt about intensions.

- (4) Functional Application for Focus Semantic Value:
 If α has the form α , then $[[\alpha]]^{s,F} =$



Your second task is to define a syncategorematic rule for the “regular” denotation of **only**+VP by using $[[VP]]^s$ and $[[VP]]^{s,F}$. You have to capture the intuition that, in saying (5), we somehow get the pieces of information in (5a-b). Again, illustrate your proposal by doing the compositional interpretation of (5).

- (5) Al only introduced BILLY to Mark.
 a. Al introduced Billy to Mark.
 b. For every (relevant) $x \in D_e$ such that $x \neq \text{Billy}$, Al did not introduce x to Mark.

