par new input output rec

$\emptyset$	stop
$P \mid Q$	par
$x = \lambda v.P$	rep.in
$x \Leftarrow \lambda v.P$	in
$x\,V$	out
$(x)P$	new
$x[P]$	loc.
lift $x \Leftarrow \lambda v.P$	lift
(eval V)	

?

$$\frac{\Gamma \vdash^{a} \nu x.P}{\Gamma, x{:}\emptyset \vdash^{a} P}\; x \notin dn(\Gamma)$$

$$\frac{\Gamma, x{:}\emptyset \vdash^{a} P \,\|\, \Delta \vdash^{b} Q}{\Gamma \vdash^{a} \nu x.P \,\|\, \Delta \vdash^{b} Q}\; x \notin fn(Q)$$

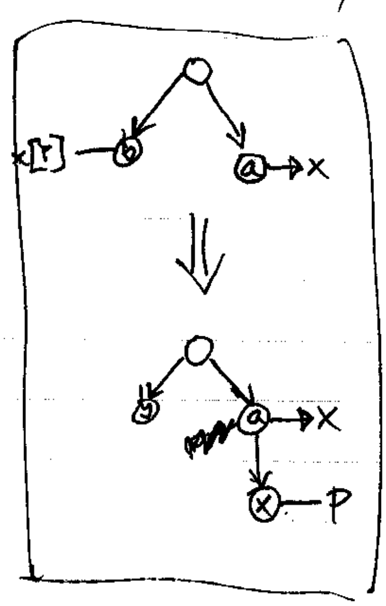
$$\frac{\Gamma, x{:}\mu \vdash^{a} P \;\|\; \Delta \vdash^{b} (x[Q] \mid R)}{\Gamma, x{:}\mu \vdash^{a} P \;\|\; \vdash^{a.x} Q \;\|\; \Delta \vdash^{b} R}$$

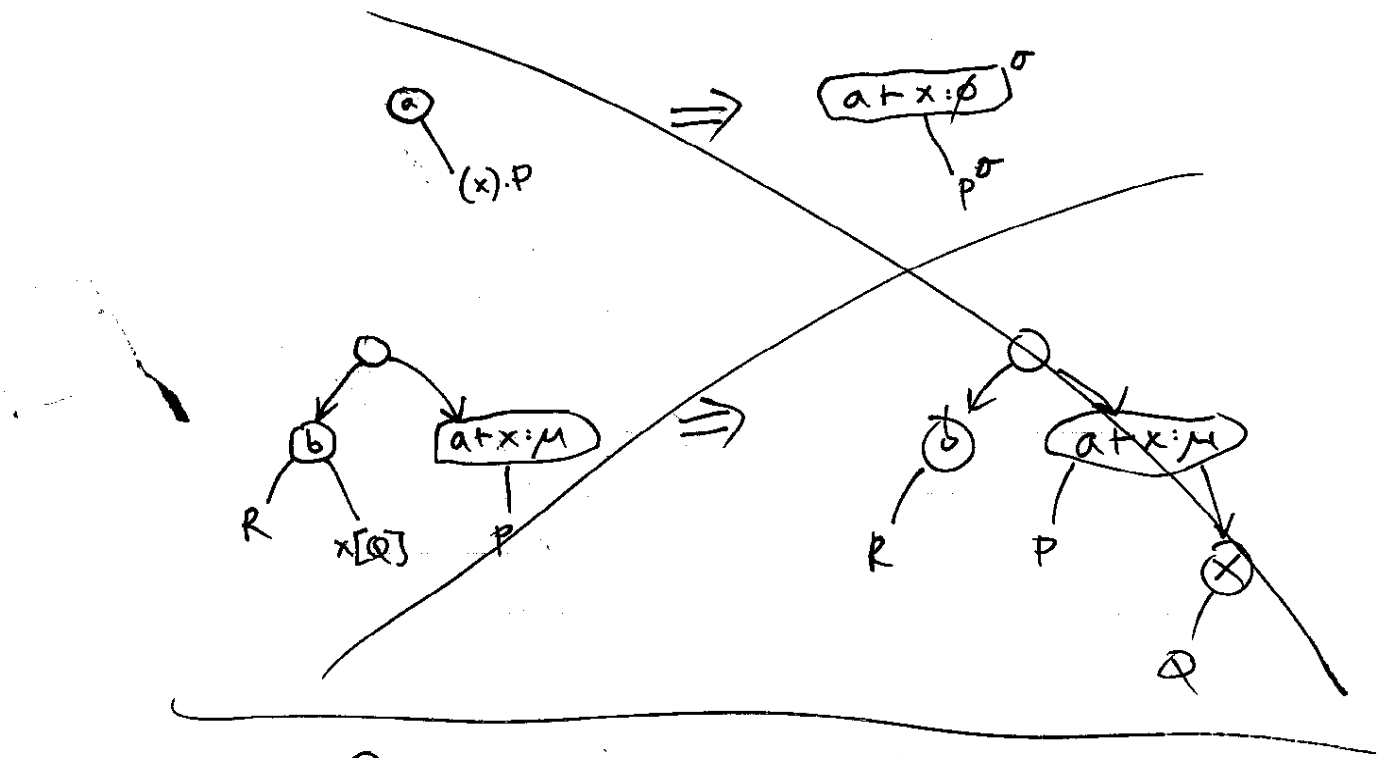
$$\frac{\Gamma \vdash^{a} \underset{\Leftarrow \lambda v.R}{\text{lift } x} \;\|\; \Delta, x{:}\mu \vdash^{b} P \;\|\; \overline{\Theta \vdash^{b.x\cdots} Q}}{z{:}\,\mathrm{LIFT}(\overline{\langle b.x\cdots, Q\rangle}) \;\|\; \Gamma \vdash^{a} (\lambda v.R)z \;\|\; \Delta, x{:}\mu \vdash^{b} P \;\|\; \overline{\Theta \vdash^{b.x\cdots} \emptyset}}$$

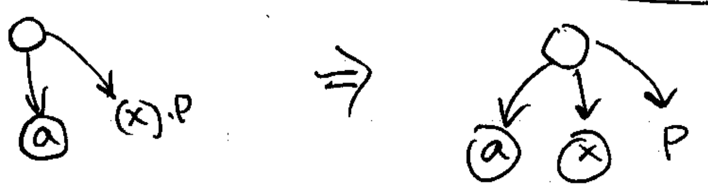
loc = path, process, children
path = ε | name.path
children = ε | loc, children
liftresult = loc

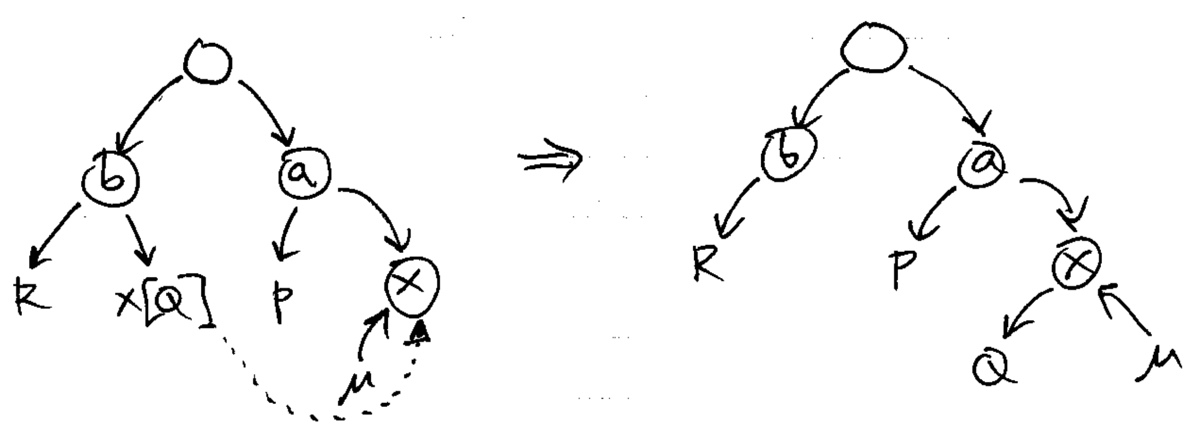
-OR-

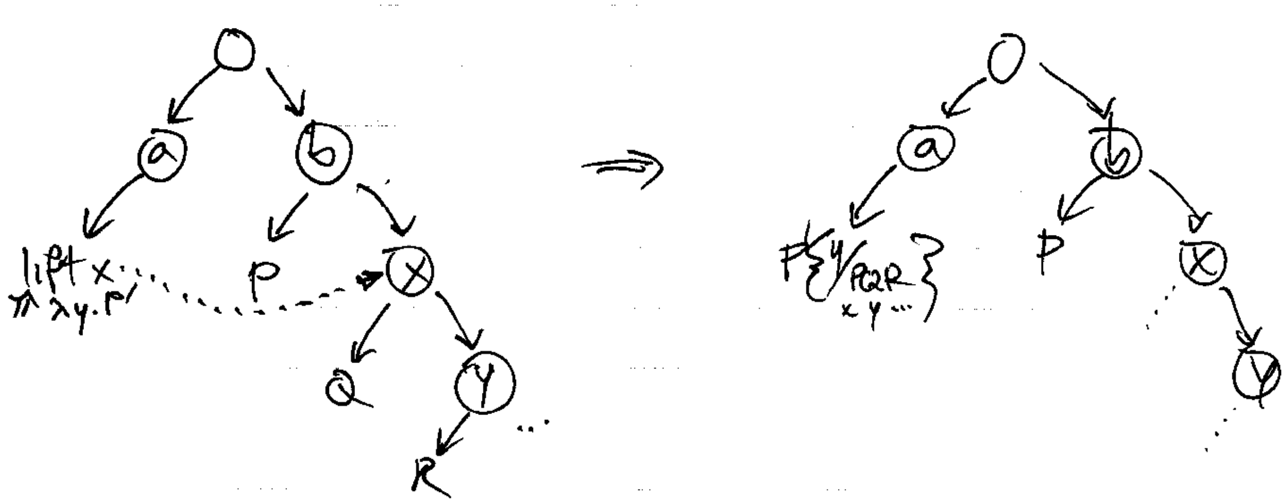
loc = name, process, parent
parent = ε | name
liftresult = [loc]











TREE (not DAG or graph) of locations

Since locations $\equiv$ names,

loc = "name" (identity?), process, parent, messages

... or maybe ambientlike $\langle M \rangle$ as a raw message

$\rightarrow$ ~~&~~ $x\tilde{y} \Rightarrow x[\langle \tilde{y} \rangle]$

& $x \Leftarrow \lambda\tilde{y}.P \Rightarrow x[(\tilde{y}).P]$

& $x = \lambda\tilde{y}.P \Rightarrow x[!(\tilde{y}).P]$

... gives you input capability if you're willing to move!
— need to fix infinite nesting problem!

stop, par implicit
bigpar implicit

~~ex.~~ $a[\,r[(v).a[\langle v \rangle]] \mid (v).P\,]$

in	$(\tilde{y}).P$	✓
rep.in.	$!(\tilde{y}).P$	✓
out	$\langle \tilde{y} \rangle$	✓
new	$\nu x.P$	✓
go	$x[P]$	✓
lift	$\text{lift}\ x(\tilde{y}).P$