causal_order_or[4,23]

$\forall T$:Type, L:T List, R:($\mathbb{N}_{<\|L\|} \rightarrow \mathbb{N}_{<\|L\|} \rightarrow$Prop), P_1, P_2, P_3:($\mathbb{N}_{<\|L\|} \rightarrow$Prop).
(Trans 1,2:$\mathbb{N}_{<\|L\|}$. R(1,2))
$\Rightarrow$ causal_order(L;R;P_1;P_2)
$\Rightarrow$ causal_order(L;R;P_1;P_3)
$\Rightarrow$ causal_order(L;R;P_1;$\lambda i.P_2(i) \vee P_3(i)$)

http://www.nuprl.org/FDLcontent/p0_802137_/p102_136143_{causal_order_or}.html