

causal_order_or^{4,23}

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