Inference at $*$
of proof for Lemma trans_imp_sp_trans_b:

$\vdash \forall T$:Type, R:($T \to T \to \mathbb{P}$).
Trans(T;a,b.$R(a,b)$)
$\Rightarrow$ {$\forall a$, b, c:T. strict_part(x,y.$R(x,y)$;a;b) $\Rightarrow$ $R(b,c)$ $\Rightarrow$ strict_part(x,y.$R(x,y)$;a;c)}
by ((((Unfolds "trans strict_part guard" 0)
CollapseTHEN (GenRepD))·)

CollapseTHENA ((Auto_aux (first_nat 1:n) ((first_nat 1:n),(first_nat 3:n)) (first_tok :t) inil_term)))·

1:

1. T : Type
2. R : $T \to T \to \mathbb{P}$
3. $\forall a$, b, c:T. $R(a,b) \Rightarrow R(b,c) \Rightarrow R(a,c)$
4. a : T
5. b : T
6. c : T
7. $R(a,b)$
8. $\neg R(b,a)$
9. $R(b,c)$

$\vdash R(a,c)$

2:

1. T : Type
2. R : $T \to T \to \mathbb{P}$
3. $\forall a$, b, c:T. $R(a,b) \Rightarrow R(b,c) \Rightarrow R(a,c)$
4. a : T
5. b : T
6. c : T
7. $R(a,b)$
8. $\neg R(b,a)$
9. $R(b,c)$

$\vdash \neg R(c,a)$

.

---

http://www.nuprl.org/FDLcontent/p0_942988_/p121_79323_{trans_imp_sp_trans_b}.html