List of Errata for ATTAPL Chapter on Typed Operational Reasoning

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Proof of Lemma 7.5.7 (page 265): On line 1 of page 265, replace

“For any frame stack $S$... we deduce that $\emptyset \vdash S[\sigma(t)] =_{\text{ctx}} S[\sigma(t')] : \sigma(T)$$

by

“For any frame stack $S$ satisfying $\emptyset \vdash S : \sigma(T) \rightarrow T'$ for some $T'$... we deduce that $\emptyset \vdash S[\sigma(t)] =_{\text{ctx}} S[\sigma(t')] : T''$.

[Thanks to Chris Casinghino.]

Proof of Lemma 7.6.8 (page 269): On line 18 of page 269 replace

“iff $\langle S, [x \mapsto F']t' \rangle \downarrow$ (by Theorem 7.4.4 again)”

by

“iff $\langle S', [x \mapsto F']t' \rangle \downarrow$ (by Theorem 7.4.4 again)”

[Thanks to Derek Dreyer.]

Corollary 7.5.8(v) (page 265): Replace “where $\Gamma \vdash t : \forall X.T$” by “where $\Gamma, X \vdash t : T$ with $X \notin ftv(\Gamma)$”.

[Thanks to Benjamin Pierce.]

Lemma 7.6.8 (pages 268, 269): In the statement of the Equivalence-respecting property, the type of $t'$ and $t'_1$ should be $T'$, not $T$. Similarly, in the statement of the Admissibility property, the types in $F''$ should be $T'_1$ and $T'_2$ rather than $T_1$ and $T_2$.

[Thanks to Derek Dreyer.]

Proof of 7.6.13 (page 272, 273): On page 272, replace

“For the reverse inclusion it suffices to prove ... we use the following simple property”

by

“For the reverse inclusion we use the following simple property”

(so the incorrect inclusion (7.21) disappears); and on page 273, line 6, replace
“thus we have proved the inclusion in (7.21), as required.”

by

“thus we have proved the inclusion \( \text{fin}(r_1, (r_2)^{st})_{stv} \subseteq \text{fin}(r_1, (r_2)^{st}) \), as required.”

[Thanks to Benjamin Pierce.]

Proof of 7.6.15 (page 274): Replace “idempotent” by “inflationary”.

[Thanks to Benjamin Pierce.]

Section 7.8 Notes (page 288): Delete “contextual equivalence!vs. bisimilarity” from the beginning of the third paragraph.

[Thanks to Geoff Washburn.]

Solution notes for Exercise 7.6.18 (page 511): Replace

“By definition of \( F_{n+1} \) and Corollary 7.5.8 we have \( \emptyset \vdash f_{n+1}v_1 =_{ctx} [f \mapsto F_n][x \mapsto v_1]t \); and similarly \( \emptyset \vdash F'_{n+1}v_1 =_{ctx} [f \mapsto F'_n][x \mapsto v'_1]t' \).”

by

“By definition of \( F_{n+1} \) and Corollary 7.5.8 we have \( \emptyset \vdash f_{n+1}v_1 =_{ciu} [f \mapsto F_n][x \mapsto v_1]t \); and similarly \( \emptyset \vdash F'_{n+1}v'_1 =_{ciu} [f \mapsto F'_n][x \mapsto v'_1]t' \).”

[Thanks to Benjamin Pierce.]