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A rewriting view of simple typing. (English summary)

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This paper studies a technique that can be used to recast the development of simple type theory into a rewriting perspective. It focuses on the simply typed lambda-calculus (STLC) extended with ground and functional constants.

To transform typing issues into rewriting issues, two crucial steps are undertaken. First, a “mixed language” merging together the STLC-syntax (variables, abstractions and applications) with types (atoms and arrows) is considered. Second, a suitable reduction $\to_a$ is defined for the mixed-language in order to ensure that: a closed lambda-term M (in STLC) is typed T if and only if M (in the mixed-calculus) reduces to T.

Patently, the reduction defined on STLC is still defined on the mixed-calculus; thus the reduction properties of STLC can still be studied on the mixed-calculus. The proof of basic rewriting properties of the mixed language (with respect to all reductions) provides the basis to deal with standard results about STLC (as, for instance, type preservation, progress properties and normalization). *Luca Paolini*

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Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.