

The original Fischer transformation, F , is correct, but the presence of administrative redexes are undesirable. Hence, modified Fischer CPS, $F2$, is introduced. $F2$ is a two-pass transformation in which

- First pass marks the new lambda abstractions to identify administrative redexes and
- Second pass reduces all administrative redexes.

The paper proves $F2$ is a total function meaning $F2$ is defined on all source terms and “correctly” CPS transforms them in finite amount of time using the Church-Rosser normal form theorem.

Plotkin proved some interesting theorems about the relation between reductions on source terms and CPS terms. They revealed that β -reductions prove more equations on CPS terms that β_v -reductions prove on source terms. The paper tries to remedy this by proving

$$\lambda_v A \vdash M = N \iff \lambda\beta\eta \vdash F2[M] = F2[N],$$

where A is a set of axioms needed for this equivalence or simulation between source and corresponding CPS programs to hold. However, some complications to this problem is presented. One example is a CPS term reduces to a term that contains an administrative redex and hence cannot be $F2[M]$ for any $M \in \Lambda$. However, it is provably equal to a number of CPS terms, among which introduces the inverse of the term. Inspired by this example, the authors proceed the following which will be presented in section 5.

- Definition of a one-pass CPS transformation equivalent to $F2$
- Inverse of CPS transformation and its relationship to the CPS transformations
- Set A , the derived axiom set, needed for the source language to have equivalent equations that CPS programs have