Parallelism Constraints
(Abstract)

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CLLS can be seen as a reformulation of Context Unification. CLLS takes a different view on trees than Context Unification: While Context Unification talks about subtrees, CLLS describes relations between nodes of a tree. CLLS lends itself to especially natural and concise descriptions of underspecified semantics in natural language processing.

CLLS can be divided into a base language of dominance constraints and an augmented language providing parallelism constraints, which express the fact that the context between two nodes in a tree is structurally equal to the context between two other nodes. It has been shown that satisfiability of CLLS dominance constraints is NP-complete; there exist, however, solvers for this problem (emplying concurrent constraint technology) which are efficient for the linguistically relevant fragment. But there is no known terminating procedure for CLLS with parallelism constraints (otherwise, this would imply the decidability of Context Unification).

We are aiming at developing a semi-decision procedure for CLLS with parallelism constraints, a procedure which works efficiently for simple (linguistically relevant) cases and degrades gracefully. A further aim is to re-use existing dominance constraint solvers and to use constraint technology wherever possible to prune the search tree. We are going to present a procedure which we hope fulfils all these aims, and which we hope to prove complete soon.