Local Normal Forms for First-Order Logic with Applications to Games and Automata - Corrigendum

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In our article, *Local Normal Forms for First-Order Logic with Applications to Games and Automata*, which appeared in volume 3:3 (1999) of DMTCS (pages 109–124), we claim that results hold for finite as well as for infinite structures. Unfortunately, this claim is wrong.

Theorem 3.4 does not hold, in general, for infinite structures. There is a simple reason why the proof of the theorem does not work in the infinite case. We tacitly assumed that a path that starts at some vertex has to end at some vertex. This is true in the finite but not in the infinite. Consequently, although the theorem fails for full monadic Σ^1_1-formulas on infinite graphs it holds for *weak monadic* Σ^1_1*-formulas*, i.e., if set quantification is restricted to finite sets.

The results about first-order formulas are not affected. Corollary 5.2 also holds for finite and infinite structures as it is based on the weaker normal form in which first-order quantification of the kind $\exists^*\forall$ is allowed.

The last sentence of the paragraph after Corollary 5.2 should be: "Moreover, for *finite* structures with a connected Gaifman graph, Theorem 3.4 implies that one occurence constraint of this form suffices."

Theorem 5.3 was always meant as a statement about finite trees. Although this might be clear from the context it should be stated explicitly.

We apologize for any trouble caused by this mistake. We are indebted to Giacomo Lenzi who informed us about this mistake.