**Title**
Online and implicit learning of language rules in children with Specific Language Impairment

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**Background**
Most studies investigating implicit learning deficits in SLI have focused on the difference in learning outcome between participants with and without SLI. Little is known about differences in the implicit learning trajectories of both groups.

**Goal**
The current study examines how speed and degree of learning differ between children with and without SLI.

**Methods & procedure**
Children are exposed to a novel artificial language of which, unknown to the children, 80% of the utterances follows a rule (first element predicts third element: e.g. tep_X_lut). In twenty percent of the utterances no such rule is present (NonRule-items). Children are asked to press a green button in response to hearing a target (e.g. lut). They have to press a red button when the third element is not this target. After three regular blocks containing the 80% rule-, and 20% NonRule-items, we present children with a disruption block in which all rules are removed. This block is followed by one regular block (recovery).

**Results**
As data collection is still ongoing, we only have preliminary results on 14 primary-school aged children with SLI ($M_{age}$: 9.0y) and 14 grammar-matched typically developing (TD) controls ($M_{age}$: 7.9y). We see that TD-children implicitly pick up the rules: their response time is affected by removal and re-insertion of the rules in the disruption and recovery block respectively. Interestingly, no such pattern is visible in the SLI-group.

**Conclusion and implications**
Our preliminary results thus support the use of evidence-based interventions that stimulate the detection of regularities in children with SLI (e.g. *conversation recast treatments*).