Detecting patterns
Relating statistical learning to language proficiency in children with and without developmental language disorder

It is still unclear why children diagnosed with developmental language disorder (DLD) experience so many difficulties acquiring their native language. The research described in this dissertation investigated whether differences in the ease with which children acquire language are related to children's sensitivity to statistical regularities (i.e. statistical learning) in the input. The following questions were addressed: (1) can we detect differences in statistical learning at the group and individual level (this concerns the measurement of statistical learning), (2) are individual differences in statistical learning associated with language proficiency and (3) can the language difficulties observed in children with DLD be explained by a statistical learning deficit that is observable across modalities, domains and dependency types?

With four empirical studies and two meta-analyses we aimed to answer these questions. Using online and offline measures of learning, we found evidence for statistical learning at the group level. Using these measures, we could not detect learning at the individual level (question 1). This means that we cannot draw a conclusion as to whether individual differences in statistical learning do (or do not) correlate with language proficiency (question 2). As for our third question: our results indicate that children with DLD have an auditory verbal statistical learning deficit. We cannot conclude that they have (or do not have) a statistical learning deficit outside this domain. The presence of a statistical learning deficit in children with DLD may thus depend on several factors, including the domain and modality in which learning is tested.