Prediction has been proposed to be a fundamental aspect of cognition. Some have proposed that language acquisition also happens through prediction (e.g., Chang, Dell, & Bock, 2006). Nevertheless, there is currently little direct evidence that children generate linguistic predictions rapidly enough to allow for learning through prediction, and no evidence that these expectations can guide the learning of novel linguistic information. I will present a series of studies conducted with children, which show that they do not only update their predictions about what speakers will say next, but also use their adapted predictions to learn novel information. I will also show my results from an experiment with infants, and discuss what these might tell us about the developmental time course of prediction in language acquisition.