I will present some aspect of deformation theory for graded bialgebras and how it relates to the lifting method of Andruskiewitsch and Schneider. I will focus on some tools based on joint works with F. Fantino, G. Garcia, and S. Witherspoon for explicitly computing the relevant cohomology group.

I will also briefly discuss a braided version of this theory and how it might be used to define a concept of a quantum Lie algebra. This part is based on joint work with I. Angiono and M. Kochetov. (Received July 19, 2017)