In this thesis we present a developed system of automatic analysis of temporal relations within a discourse for Czech and discuss possibilities to use the system to enhance a Czech–to–English machine translation system. We introduce the respective components related to this scenario: the scheme of annotation of temporal relations within a discourse, the created corpus annotated for temporality, the system of automatic analysis of temporal relations itself, the generative component of a Czech–to–English machine translation system producing English sentences and the experiments with improving the quality of this component by adding the information on temporal relations. Furthermore, in connection to the generative component, we present an implemented tree–rewriting formalism that allows for the required tree transformations.