This part demonstrates applications of regulated language models discussed earlier in this book. First, it describes these applications and their perspectives from a general viewpoint. Then, it adds several case studies to show quite specific real-world applications. It narrows its attention to regulated grammars rather than regulated automata, and it selects only three application areas—biology, compilers, and linguistics. Part VIII consists of Chaps. 19 and 20.

Chapter 19 comments applications of regulated grammars and their perspectives in general. It describes their potential applications in terms of the specification and translation of languages, including both programming and natural languages. This chapter also explains how the grammatical regulation of information processing fulfills a crucially important role in many areas of biology.

To illustrate the general comments quite realistically, Chap. 20 presents several specific case studies concerning the three scientific areas selected in Chap. 19. Specifically, these case studies deal with compiler writing, computational linguistics, and molecular biology.