This PhD thesis investigated the role of the syllable in speech production. Chapter 1 gives a brief description of the theoretical framework, a short overview of a model of speech production, and states the specific problems syllables pose in psycholinguistics.

Chapter 2 describes an empirical study that looked at the lexico-statistical characteristics of the syllable in Dutch using the CELEX lexical database and a very large newspaper corpus. One result of this study was that the frequencies of occurrence of syllables in isolated word forms provide a reasonable estimate of the syllable frequencies in connected speech. An important finding for the notion of the mental syllabary (Levelt & Wheeldon, *Cognition*, 50, 1994) was that in Dutch as well as in English and German more than 80% of all syllable tokens can be produced with the 500 most frequent syllable types of the language (Schiller, Meyer, Baayen, & Levelt, *JQL*, 3, 1996).

Chapter 3 reports experimental work investigating the intuitive syllabification behavior of native speakers using the metalinguistic syllable-reversal task (Treiman & Danis, *JML*, 27, 1988). Six experiments are described and the main result of this study was that syllabification is a highly variable process that can be influenced by several variables (Schiller, Meyer, & Levelt, *Lang. and Speech*, 40, 1997). This is in accordance with the assumptions made about syllabification in Levelt's (1989, Levelt & Wheeldon, *Cognition*, 50, 1994) model of phonological encoding, where syllabification is seen as an on-line process that occurs rather late in speech production immediately preceding articulation.

Chapter 4 describes another experimental study that investigated whether there are syllabic units at the speech output level. A series of masked-priming experiments were carried in which participants name words or pictures. Using the same paradigm, Ferrand, Segui, and Grainger (*JML*, 35, 1996) found a syllable priming effect in French. The results of the experiments reported in this thesis, however, showed that in a language like Dutch there is no syllable priming effect. Instead, significant segmental overlap effects were found in both word and picture naming (Schiller, *JML*, 39, 1998).

In Chapter 5, an articulatory experiment using electromagnetic midsagittal articulography (EMMA) is reported. This experiment looked for syllabic effects on the articulatory output level. By means of EMMA it is possible to monitor articulatory movements of the tongue and the lips during speech production. The results of this study showed that the syllable affiliation of intervocalic consonants
does not affect the articulatory timing (Schiller, van Lieshout, Meyer, & Levelt, 1999).

Finally, Chapter 6 summarizes the results of the previous chapters and draws some conclusions. Furthermore, it is pointed out which questions are still open and where future research should focus on.

The thesis contains a summary in English and Dutch, and every chapter has its individual list of references. Altogether, the thesis contains 197 pages.