This study examines the phonetic, historical and phonological aspects of Lao tones. With respect to the phonetic aspect, invariant phonetic features that characterize Lao tones are explored. Concerning the historical aspect, we conduct a pilot study to describe the tonal systems of Lao dialects and, based on a comparison among those dialects, to make hypotheses about diachronic process of Lao tones. Based on these discussions, the phonological structure of Lao tones is analyzed in terms of tonal features.

Chapter 1 reviews previous research on Vientiane Lao tones and gives an overview of its basic characteristics. Then we describe two approaches which are adopted in this study to examine the phonological structure of Lao tones: That is, phonetic and historical approaches to phonological considerations of Lao tones. The phonetic approach is to examine the phonological aspect of tone based on its phonetic realization patterns. The historical approach is to analyze and describe diachronic sound changes of tone in phonological terms and to explore the phonological structure of tone.

In Chapter 2, an acoustic measurement is conducted to reveal invariant phonetic features of Lao tones. Fundamental frequency contours (F0) of contour tones in Lao are measured and analyzed under the condition that duration of syllables which carrying the tones are variable by manipulating speech rate. The measurement reveals that, in the phonetic realizations of the Lao contour tones, relatively stable features are the temporal alignment pattern of the beginning and end of the F0 movement of the contour tones, and the slope of the F0 contour. These results are interpreted as follows. These relatively constant features in the phonetic realizations of Lao tones can be considered to be represented in the phonological structure. In other words, it is suggested that Lao tones are phonologically specified concerning the temporal alignment and slope of the F0 contour.

In Chapter 3, the historical aspect of Lao tones is explored. A pilot study is conducted to examine
the tonal systems of 11 Lao dialects and to offer preliminary descriptions of these systems. These
tonal systems of the Lao dialects are compared with respect to their variation of phonetic
characteristics, and examined in terms of diachronic tonal development. Based on this comparative
examination of the Lao dialects, tentative hypotheses concerning historical sound change which
occurred in the history of Lao tones are suggested. Among these hypotheses, the most important one
in terms of phonological consideration of Lao tones is the process that a tone changes its overall
register with its contour shape unchanged.

In Chapter 4, the phonological structure of Lao tones are explored based on the discussions
above. In particular, Lao tones are analyzed in terms of tonal features and featural representations of
Lao tones are suggested. First, we discuss how many levels of tone are to be distinguished and show
four levels are needed to adequately describe the tonal contrasts of Lao tones. Next, we discuss how
to represent the tonal contrast of four levels and introduce a “Register” feature, which divides the
pitch range of the voice into two halves. By using the Register feature, the historical process of
register change, which was described tentatively in Chapter 3 as having occurred on Lao tones, can
be readily stated as a natural process. Finally, we discuss how to represent contour tones and suggest
that Lao contour tones can be analyzed as sequences of level tones, which are dominated by a single
“tonal node” in the feature geometry. This interpretation of featural representation can explain the
phonetic facts observed in Chapter 2.

In Chapter 5, we summarize all the discussions and point out remaining questions in Lao tone
and tonal phonology in general, which we could not deal with in this study.