



*Retained or Lost in Transmission. Analyzing and Predicting Stability in Dutch Folk Songs*

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My dissertation investigates the variation of Dutch folk songs with computational methods, with a special interest in stability, or a melody's resistance to change in transmission. The first chapter introduces terminology, gives an overview of related work on music transmission, and reviews the Dutch folk song database and in particular the *Meertens Tune Collections*, which were studied in this dissertation. Part I of the dissertation, comprising the second, third and fourth chapter, establishes possible ways to quantify stability and variation. The second chapter investigates which musical aspects would be a good focus to study stability and variation, reviewing relevant research from ethnomusicology, music cognition and Music Information Retrieval on musical variation. The two ensuing chapters review computational methods by which stability might be quantified. The third chapter summarizes findings from pattern discovery research, which might be used for inferring stable melodic patterns occurring frequently in variants. The fourth chapter introduces a novel pattern matching method based on a combination of well-performing similarity measures, which may be used to quantify stability of folk song phrases based on their frequency of occurrence. Part II of the dissertation, comprising the fifth and sixth chapter, shows how stability can be measured and predicted, and places the contributions of the current research into the wider context of cultural and music evolution. The fifth chapter uses the specifically developed pattern matching method to determine stability of melodic phrases, and tests a number of hypotheses by which such stability may be predicted. The results show that a moderate amount of stability and variation can be explained through the length, position and number of repetitions of a phrase within a melody, as well as whether it consists of expected melodic material or repeating motifs. While a considerable amount of stability and variation cannot be explained through these hypotheses, the detection of relevant predictors suggests that stability and variation in music transmission are not random. The sixth chapter summarizes the contributions of my dissertation to the study of music transmission, as well as to the quantification and prediction of stability. The chapter also discusses the limitations of the presented approaches, and how they may be overcome by future research, inspired by concepts from music cognition, musicality, and cultural evolution.