# Automating Motivic Analysis through the Application of Perceptual Rules

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## Abstract

Musical discourse may be described in terms of an intricate flow of local groupings. Such groupings, whose perception does not always reach a state of explicit awareness, mostly remain in an informal condition, except the most predominant of them, which contribute to more global constructions and will be remembered as the characteristic thematic materials of the musical piece. There have been some attempts, particularly in Reti's thematic analysis, to explicitly describe music at this level of detail. Such non-reductionist approaches to music analysis, facing huge complexity, desperately need automation and objectivity.

Current research in musical-pattern discovery, which may be considered to constitute the first steps towards this ideal, hardly discovers the basic musical structures expected by musicologists. This failure stems from the fact that current formalizations of musical patterns do not take plainly into account the essential characteristics of music as a perceptual phenomenon. Our approach to musical-pattern discovery is founded on perceptual heuristics, with the ideal aim of making explicit all the structural details that we more or less implicitly perceive. Basic principles and algorithms are described and illustrated, and early results are shown.

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