



# Composer Attribution by Quantifying Compositional Strategies

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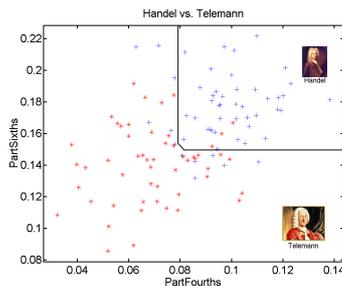
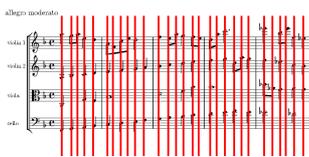
L.B. Meyer:

“**Style** is a replication of patterning, whether in human behavior or in the artifacts produced by human behavior, that results from a series of choices made within some set of constraints.”

**Laws** (physical)  
**Rules** (cultural)  
**Strategies** (individual)

**Feature set**, designed to detect low-level, unconscious replicated patterns:

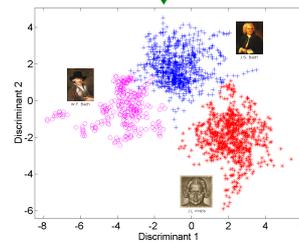
- |                             |                              |
|-----------------------------|------------------------------|
| Amount of seconds           | Amount of parallel fourths   |
| Amount of thirds            | Amount of parallel sixths    |
| Amount of fourths           | Suspension by step           |
| Amount of augmented fourths | Voice density                |
| Amount of diminished fifths | Amount of dissonance         |
| Amount of fifths            | Bars starting with dissonant |
| Amount of sixths            | Entropy of harmonies         |
| Amount of sevenths          | Entropy of pitches           |
| Amount of octaves           | Entropy of sonorities        |
| Amount of parallel thirds   | Stability of rhythm          |



## Application

Attribution of disputed organ fugues in Bach catalogue.

Undisputed fugues of J.S. Bach, W.F. Bach (son) and J.L. Krebs (student), for comparison. Projection into two dimensional space using Fisher transformation.



## Classification of disputed fugues

