
What to do with a Digitized Collection of Western Folk Song Melodies?

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Outline

History

- Ideological backgrounds
- Classification Systems
- Other projects
- Recent developments

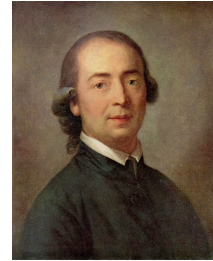
Meertens Tune Collections

What to do?

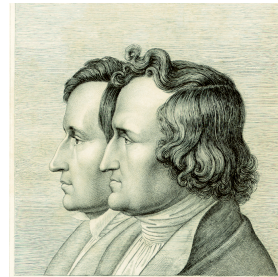
- Music Cognition
- Oral Variation
- Cultural Heritage
- Music Information Retrieval

History – Selective Overview

Starting point of modern Folk Song Research (Volksliedkunde) generally dated in late 18th century Germany.



Interest in Folk Songs stimulated by Romantic ideology as advocated by Gottfried Herder and brothers Grimm.



Herder: Folk song is the 'mirror' of the soul (*Geist*) of the people.

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History – Selective Overview

Herder c.s.: essentialistic-normative tradition.
Essentialistic: intrinsic qualities
Normative as opposed to empirical



Only 'authentic' (*echte*) songs reveal the *Volksgeist*.

Quest of folk song researchers: discern authentic folk songs:

- Oral transmission
- Popularity
- Continuous Variation
- Anonymity
- Dignity
- Ancient and Persistent.

Left behind in the second half of the 20th century.

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Five to Twelve

URGENCY: collect as much as possible before it vanishes.

Herder: "Die Reste aller lebendigen Volksdenkart rollen mit beschleunigtem Sturze in den Abgrund hinab."

Wiora (1959): Folk song is irrevocably doomed.

Suppan (1978): Folk song is dead.

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History – Selective Overview

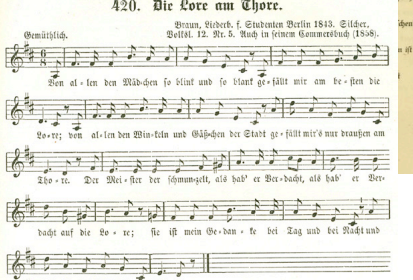
Herder published editions of folk song texts from various countries.

19th century editions of melodies by Ludwig Erk and Franz Magnus Böhme.



420. Die Lore am Chore.

Stimmlich. Wesum, Steyer, f. Eichenau Wien 1813. Zilber, Weill. 12. Nr. 3. Nach in seinem Gemmebuch 1836.



1.
Das Lied vom Fischer.
Deutsch.

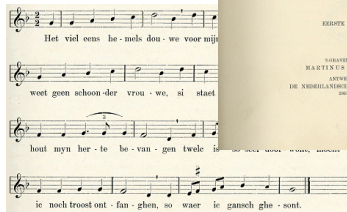
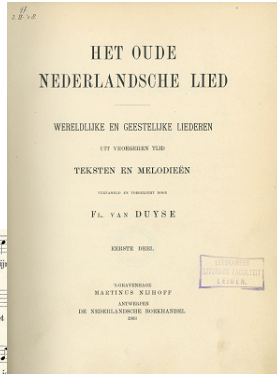
Das Wasser rauscht, das Wasser rausch,
Ein Fischer laß davon;
Sch nach dem Angl kuhvoll,
Küß dir an's Herz hinan;
Lied was er sing und mir er lauscht,
Zeit sich die Fisch erweh.
Was dem bewegten Wasser rauscht
Ein fruchtig Weib hervor.

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History – Selective Overview

Netherlands: Florimond Van Duyse, Jaap Kunst



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History – Selective Overview

20th century: field work recordings



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Classification Systems

How to order melodies?

1900: Daniel Scheurleer organized a competition:

“Welche ist die beste Methode, um Volks- und volkmässige Lieder nach ihrer melodischen (nicht textlichen) Beschaffenheit lexikalisch zu ordnen?”

What is the best method for the lexical ordering of folk and folklike tunes?

Translation by Nettl 2005, p. 123.

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Classification Systems

Ilmari Krohn (1903):

Cadence tones

In Eng-land woond' een koop-man rijk en mach-tig
Die had een doch-ter ge-naamd E-li-sa-beth
Zij be-mind' een stal-knecht zo trouw en zo mach-tig
Tot dat haar ou-ders de liefd' al werd ge-waar.

NLB070122_01 - <http://www.liederenbank.nl/liedpresentatie.php?zoek=70122>

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Classification Systems

Bartók adapted Krohn's system:

[4] [4] [1], 8, 1-8

Parlando, $\text{♩} = 144$. Muz. F. 1016a); IV. Csikvacsáresi (Csík), 1907. B.

22. 

Many more systems were conceived and abandoned during the 20th century.

North America

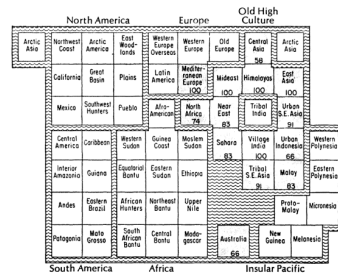
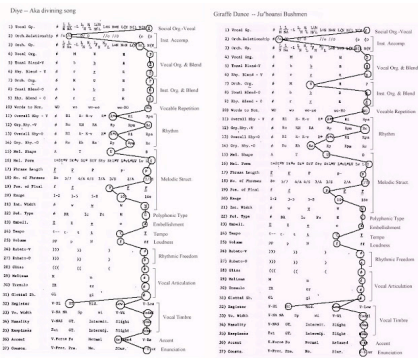
Samuel Bayard (1950): *Tune Family*

Bertrand Bronson (1949): *Punch Cards*

CHILD NO.	AUTHORITY	VOLUME	DATE	COLLECTOR	SINGER	REGION	NO. PHR.	PHRASE SCHEME	REFRAIN	NO.	TIME	BARRETT	MODE	FINAL	SPK.
0							0	11	8	0	40 50 60 70	40 50 60 70	0	0	0
1							1	11	8	1	1	1	1	1	1
2							2	11	8	2	2	2	2	2	2
3							3	11	8	3	3	3	3	3	3
4							4	11	8	4	4	4	4	4	4
5							5	11	8	5	5	5	5	5	5
6							6	11	8	6	6	6	6	6	6
7							7	11	8	7	7	7	7	7	7
8							8	11	8	8	8	8	8	8	8
9							9	11	8	9	9	9	9	9	9

Cantometrics

Project in the 1960s lead by Alan Lomax



Large scale, empirical, comparative study.

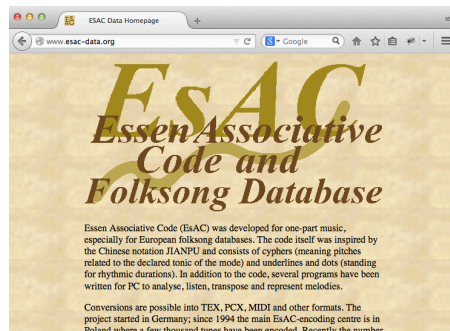
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EsAC

1980s - : Corpus of melodies encoded in “Essen Associative Code”
By Helmuth Schaffrath.
Continued by Eva Dahlig.
Currently >20,000 songs.

```
ALTDEU
CUT[Das Hildebrandslied]
REG[Europa, Mitteleuropa, Deutschland]
KEY[A0001 04 G 4/2]
MEL[1_ 3b 3b 4 4 5 5_
0 5 5_ 5 6 7b 5_ 5_ 0_
5_ 5 6 7b 5_ 6b 5_
0 5 4 3b 5_ 3b 3b_
0 3b 3b 3b_ 4 4 5_
5 4 3b 3b 3b_ 2 1_
0 5 5_ 4 3b 0_
5_ 6b 5 5 3b_ 4 5_
0 4 3b3b1_ 1_ 6_ 7_ 1_ . //] >>
FCT[Romanze, Ballade, Lied]
```



Machine readable

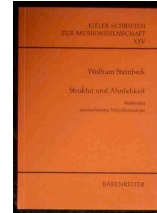
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W. Steinbeck; B. Jesser

Wolfram Steinbeck (1982). *Struktur und Ähnlichkeit*.

Hierarchical clustering



Barbara Jesser (1991). *Interaktive Melodieanalyse*.

Finding related melodies interactively.

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Music Information Retrieval

Interested in collections of monophonic melodies for testing algorithms:

- Segmentation
- Melodic Similarity
- Pattern Finding
- etc.

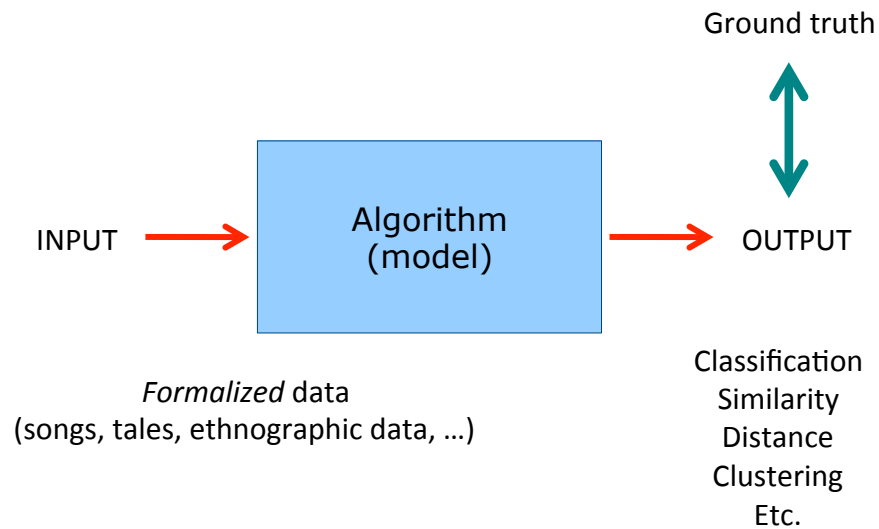
Meta-data is regarded as *ground-truth*.

Virtually all papers in the proceedings of ISMIR in which this set of melodies is used do not show an interest in folk music and its particularities as such.

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Computational Model



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Meertens Tune Collections

<http://www.liederenbank.nl/mtc>

Name	Description	data types	version
MTC-OGLAUDIO	Collection <i>Onder de groene linde</i> : 7178 audio recordings collected by Dutch field workers during the 1950s-1980s.	mp3	1.0
MTC-OGLSCANS	Scans of 3754 transcriptions of recordings from <i>Onder de groene linde</i> as made during the 1950s-1980s. The music is hand-written, the lyrics are typed.	jpg	1.0
MTC-FS	4120 digitally encoded vocal folk songs both from <i>Onder de groene linde</i> (2503) and from various related written sources (1617).	**kern, midi, lilypond, png, pdf, txt	1.0
MTC-INST	2368 digitally encoded instrumental tunes from 18th-century Dutch manuscripts and printed scores.	**kern, midi, lilypond, png, pdf	1.0
MTC-ANN	Annotated Corpus: 360 melodies used in various publications.	**kern	1.0
MTC-LC	Large Corpus: 4830 melodies used in various publications.	**kern	1.0

Each collection comes with rich meta-data.

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MTC-FS



MP3



MIDI

Transcription

png and pdf renderings

png and pdf renderings

Lie-ve schip-per vaar mij o-ver
 Naar het gind-se dorp-je heen;
 Ik zal u een hals-snoer ge-ven,
 En een kos-te-lij-ke steen
 Ik zal u een hals-snoer ge-ven,
 En een kos-te-lij-ke steen

Syllabized lyrics

```

**kern **text
**staff1 **staff1
*
*M3/4 *
*MM120 *
*k[#] *
*G: *
{8g Lie-
8b -ve
=1 =1
4.dd schip-
8ee -per
8.dd vaar
16dd mij
=2 =2
4cc o-
4b;} -ver
{8a Naar
8b het
**kern
    
```

Metadata: singer id, tune family, tune family membership, text family, place of recording, date of recording, etc

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MTC-OGLAUDIO

Meta-data:

Date of recording

Place of recording

Date of birth singer

Place of birth singer

Tune family

Field worker



All recordings by Ate Doornbosch

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MTC-OGLAUDIO

Meta-data:

Date of recording

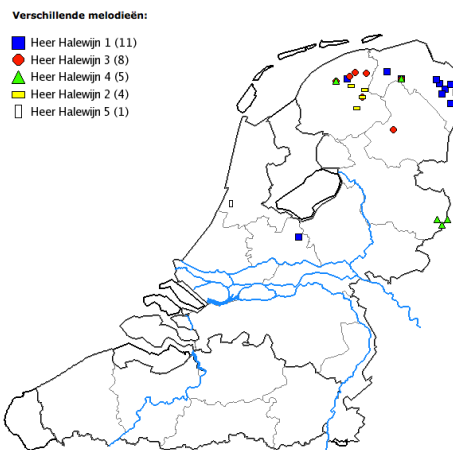
Place of recording

Date of birth singer

Place of birth singer

Tune family

Zingende kaart van alle melodieën Heer Halewijn



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What to do?

What to do with a Digitized Collection of
Western Folk Song Melodies?

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Music Cognition

These melodies were sung by ordinary people with little or no formal musical training.

Study human musicality:

- memory for melody
- strategies of text-setting
- properties of singing
- common errors



4. Zeg vrouw, waarom er weinst do, en hoera (bis)
Al wein ik zo al om dat bier.
Doe meinst doe kriegs'ter geen geld voor hier, en hoera.

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Music Cognition

Examples:

Temperley (2008): extract distributions from EsAC collection.

Von Hippel & Huron (2000): Gap-fill rule explained by regression to the mean.



Schellenberg (1996) used a corpus of folk songs to refine Narmour's (1990) theory of melodic structure empirically.

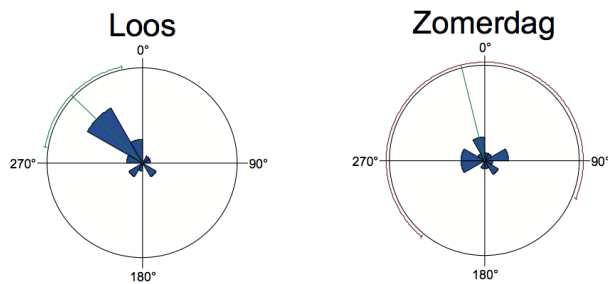
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Music Cognition

Examples:

Memory for Absolute Pitch in Oral Tradition:



Olthof, M. E., Janssen, B., Honing, H. (2014). The Role of Absolute Pitch Memory in the Oral Transmission of Folksongs (in prep.)

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Understanding Oral Variation / Stability

Record 72103 - Strophe 1

Sol - daat kwam uit den oor log en hoe - ra

Record 72283 - Strophe 1

Sol - daat kwam uit den oor - log weer en hoe - ra

Record 72284 - Strophe 1

Sol - daat kwam uit den oor - log en hoe - ra

Record 72285 - Strophe 1

Sol - daat die kwam bui - ten den oor - log en hoe - ra

The figure shows four strophes of a folk song in 8/8 time, each on a single staff. The lyrics are: 'Sol - daat kwam uit den oor log en hoe - ra' (Record 72103), 'Sol - daat kwam uit den oor - log weer en hoe - ra' (Record 72283), 'Sol - daat kwam uit den oor - log en hoe - ra' (Record 72284), and 'Sol - daat die kwam bui - ten den oor - log en hoe - ra' (Record 72285). A red rounded rectangle highlights the melodic phrase 'log en hoe - ra' in all four strophes, showing variations in pitch and rhythm across the different recordings.

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Understanding Oral Variation / Stability

Nettl (2005): What is the 'basic unit of transmission'?

Whole piece?

Formulae?

Motifs?

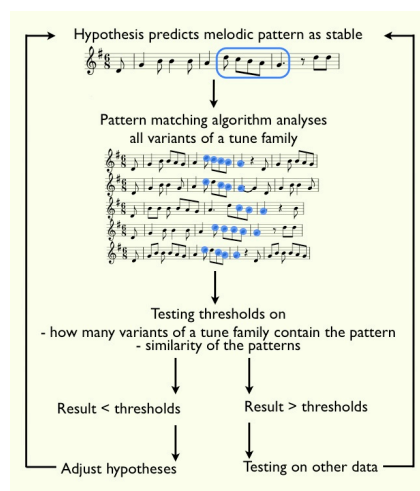
This question could be addressed with a pattern finding algorithm.

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Understanding Oral Variation / Stability

We test hypotheses on melodic stability.



Berit Janssen (2014)

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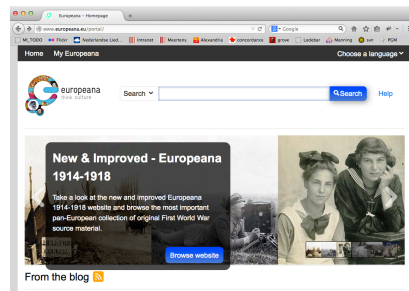
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Cultural Heritage

Currently much funding spend on preservation and digitization of European Cultural Heritage

E.g. Europeana.eu

To unlock and search digitized artifacts, adequate models and tools are needed.



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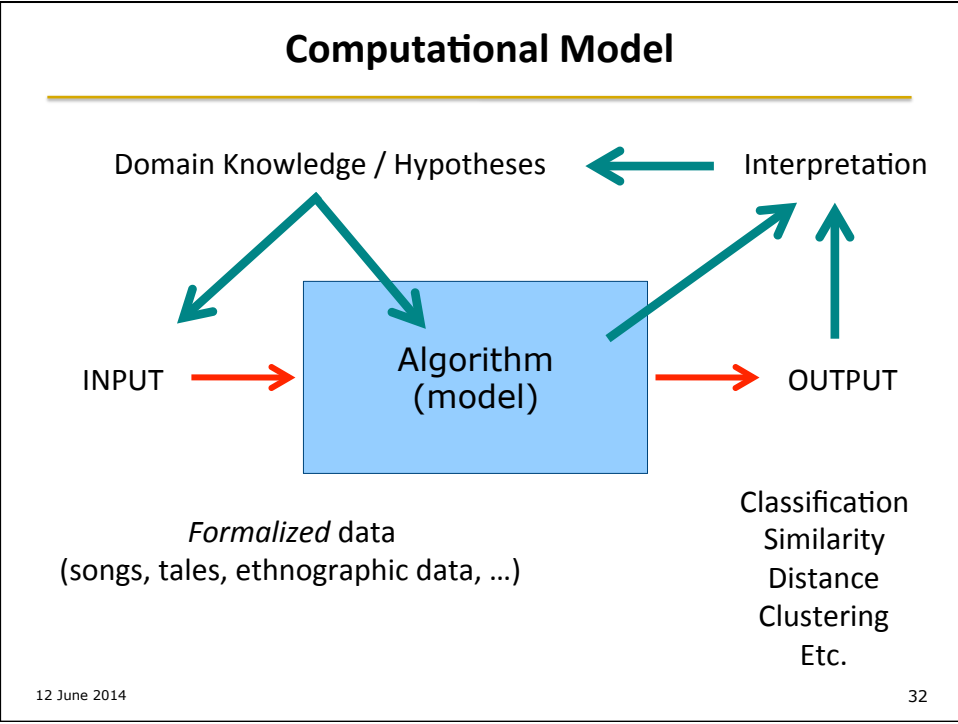
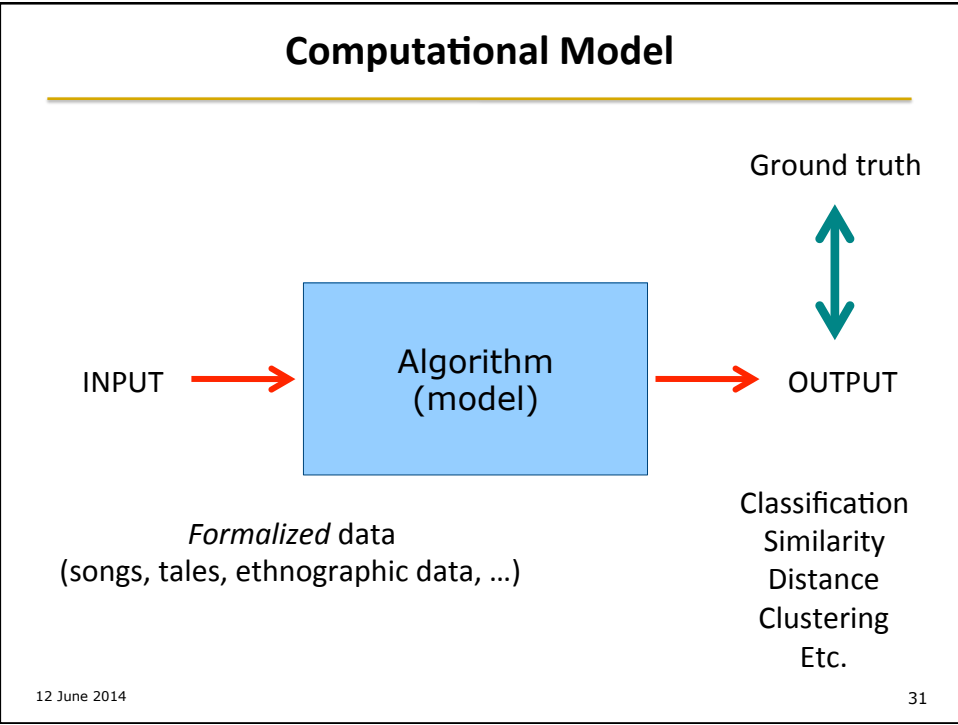
Music Information Retrieval Tasks

Examples with Meertens Tune Collections:

- Melodic Segmentation
- Melodic Similarity
- Geographic Clustering
- Audio-Score alignment
- Singer classification
- Optical Music Recognition
- Pattern discovery
- Lyric-Audio alignment
- Key-finding

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Thank you

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