

„Vom Schürfen und Knüpfen – Text Mining und Netzwerkanalyse für Historiker_innen“

9. Workshop HNF, 10. bis 12. April 2015, Ruhr-Universität Bochum



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HNF2.0?! – Überlegungen zu Vergangenheit und Zukunft eines modischen Forschungsansatzes

HNR2.0?! – Considerations on past and future of a fashionable research approach

HNR2.0?!

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- organisational concept in biology and transport in 18th and 19th century (Gießmann 2006)
- socio-scientific theory in 20th century (Max Weber 1976, Norbert Elias 1969: „Wertegemeinschaft“)
- application to the historical science (Wolfgang Reinhard 1979: „Verflechtung“)



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- Social network analysis (statistics, SNA, ...)
- catchphrase in proposals and fashionable theme (references to network in *Historische Bibliographie* (AHF) 1990-2000 36, 2000-2010 494, 2013 50)
- breakthrough with mathematical models (Ansell/Padgett 1993, Postel-Vinay 1997)



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A. Networks of credit markets in a rural region in 19th century (2005-2015)



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- Postel-Vinay 1997 and Fontaine 1997: credit markets were organised as a network system
- operationalisation:
 - × organisation (Jansen)
 - × values and rules (Fukuyama; Putman)
 - × reduction of complexity (Granovetter; Jansen; Luhmann)
 - × trust (Coleman; Luhmann)
 - × social capital (Bourdieu; Coleman; Lin)
 - × exchange of resources (Luhmann)
- **credit**
- New Institutional Economics: markets are networks (Wischermann); embeddedness (Granovetter)
- Historical network research is supplemented by cultural history (Berghoff; Grabas)

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Credit networks I

- sources: loan agreements of the towns of Merzig(Prussia), Remich (Luxembourg), Sierck (France)
- link with family reconstruction
- importance of HNR in historical science



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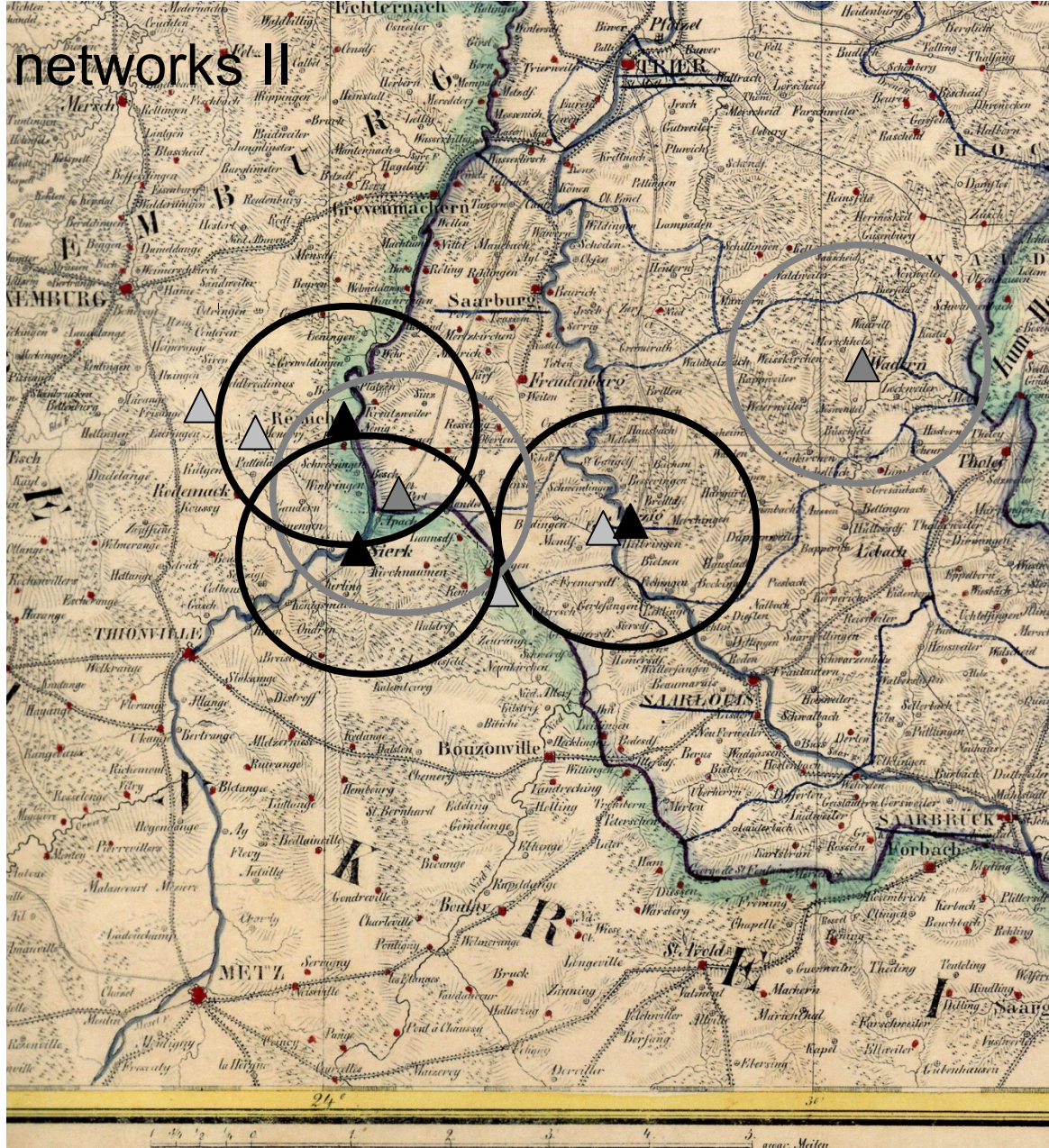
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Credit networks II



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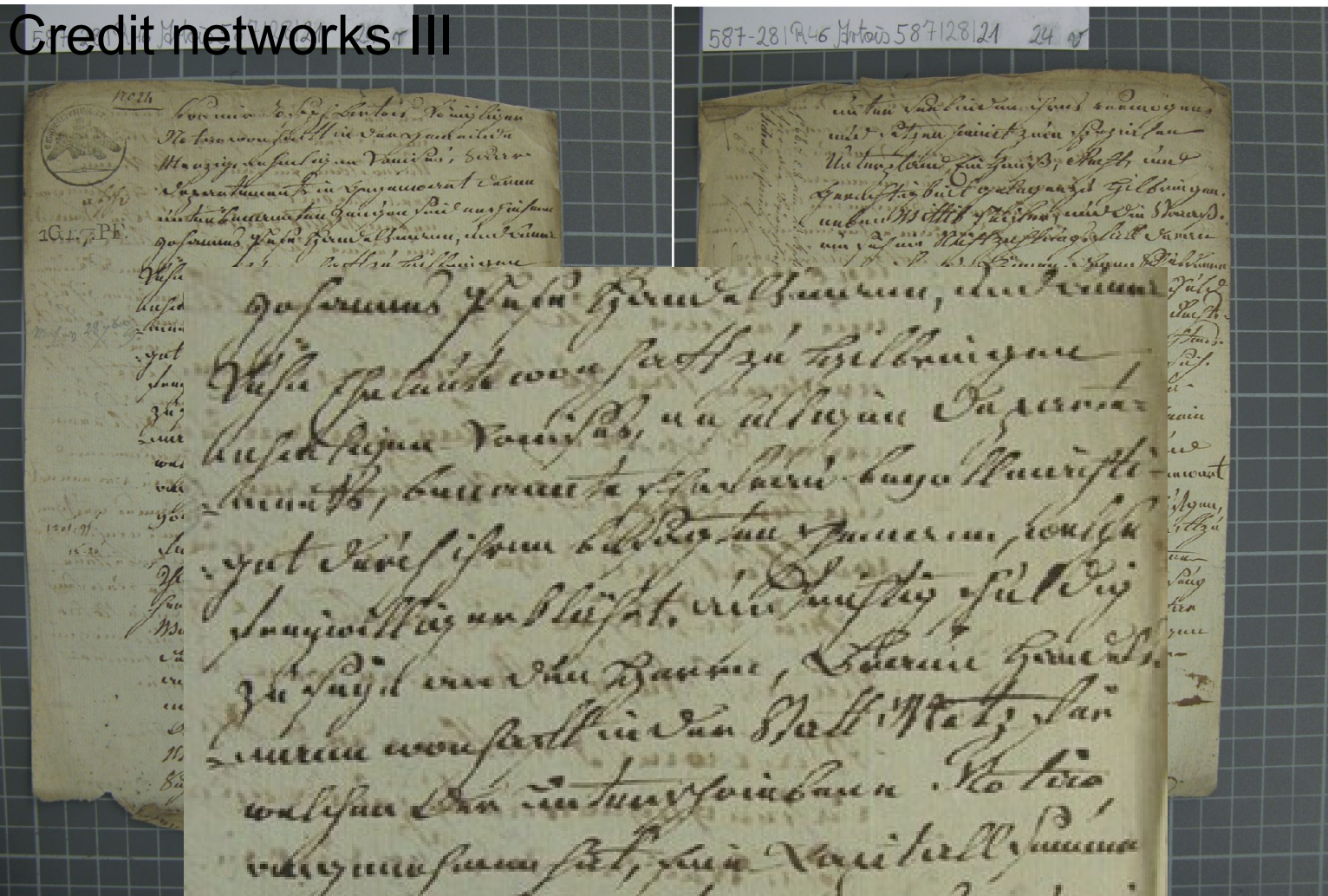
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• Research area

- map: detail from "Charte des Königlich Preuss. Regierungsbezirk Trier", 1826.
- source: Werden des Saarlandes, p. 169

Credit networks III



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• sources (LAS)

Credit networks IV

<pre>dokument\$ /lfd-nr= /typ=0 /image= schuldner\$ /sex= /stand= /vorname= /name= /beruf= /wohntort= /alphabet= ehfrau\$ /sex= /stand= /vorname= /name= /beruf= /wohntort= /alphabet= glaebiger\$ /sex= /stand= /vorname= /name= /beruf= /wohntort= /institution= /funktion= /alphabet= ehfrau\$ /sex= /stand= /vorname= /name= /beruf= /wohntort= /alphabet=</pre>	<pre>betrag\$ /ecu= /franc= bedingung\$ /art= /dauer= /zins= /rueckzahlung= sicherheit\$ /immobilie= zeuge\$ /sex= /stand= /vorname= /name= /beruf= /wohntort= /alphabet= zeuge\$ /sex= /stand= /vorname= /name= /beruf= /wohntort= /alphabet= notar\$ /sex= /stand= /vorname= /name= /wohntort= datum\$ /datum= /bemerkung=</pre>
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• word-template („Meta-Quelle“)

Credit networks V



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```
Kleio Version 8.5.3 --- 19.05.2010, 17:03:34
Historical Workstation Project / UNIX version
query name=oblmag;part=/datum:datum="1 Januar 1825" after equal and "1
Januar 1826" before
write part=/root
[0]/schuldner:name,:vorname,:sex,:beruf,:wohntort,:institution,:funktion
,:form["-----"],/root[0]/schuldner/glaeu
biger:name,:vorname,:sex,:beruf,:wohntort,:institution,:funktion,:form
["-----"],/root[0]/betrag:franc:greater "0",/root[0]/betra
g:other:greater "0",/root[0]/datum:datum,:form
["++++++"]
continue
```

Die Ausführung der von Ihnen gestellten Aufgabe beginnt.

```
dokument (621 = "587-28-33-4") : name      Besch
dokument (621 = "587-28-33-4") : vorname   Peter
dokument (621 = "587-28-33-4") : sex      männlich
dokument (621 = "587-28-33-4") : beruf    Maurer
dokument (621 = "587-28-33-4") : wohntort Fitten
-----
dokument (621 = "587-28-33-4") : name      Junges
                                     Kommentar
                                     junior
dokument (621 = "587-28-33-4") : vorname   Johannes
dokument (621 = "587-28-33-4") : sex      männlich
dokument (621 = "587-28-33-4") : beruf    Floerger(?)
dokument (621 = "587-28-33-4") : wohntort s
dokument (621 = "587-28-33-4") : institution
dokument (621 = "587-28-33-4") : funktion
-----
dokument (621 = "587-28-33-4") : other     25.000000
dokument (621 = "587-28-33-4") : datum    9.1.1825
++++++
dokument (622 = "587-28-33-22") : name      Falk
dokument (622 = "587-28-33-22") : vorname   Mathias
dokument (622 = "587-28-33-22") : sex      männlich
dokument (622 = "587-28-33-22") : beruf    Gerber
                                     Kommentar
                                     Meister
dokument (622 = "587-28-33-22") : wohntort s
-----
dokument (622 = "587-28-33-22") : name      Siegele
dokument (622 = "587-28-33-22") : vorname   Henrich
dokument (622 = "587-28-33-22") : sex      männlich
dokument (622 = "587-28-33-22") : beruf    Gerber
                                     Kommentar
                                     Meister
dokument (622 = "587-28-33-22") : wohntort s
dokument (622 = "587-28-33-22") : institution
dokument (622 = "587-28-33-22") : funktion
-----
dokument (622 = "587-28-33-22") : other     400.000000
dokument (622 = "587-28-33-22") : datum    5.2.1825
++++++
dokument (623 = "587-28-33-35") : name      Reuten
```

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```
C:\ Kleio
C:\Programme\Kleio\Notar>dir
Volume in Laufwerk C: hat keine E
Volumeseriennummer: 883D-E9A9

Verzeichnis von C:\Programme\Klei

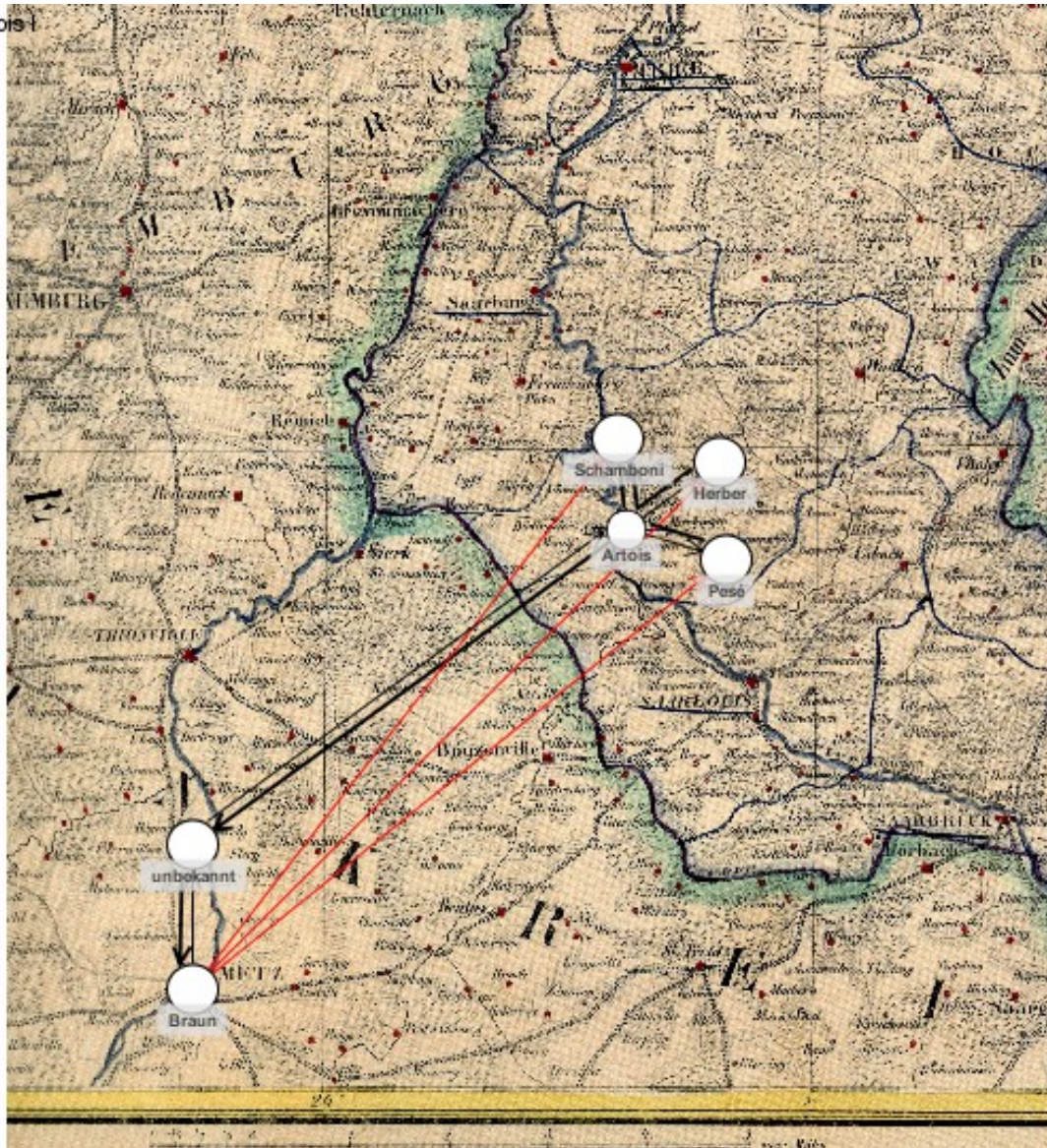
04.02.2009  21:48    <DIR>
04.02.2009  21:48    <DIR>
19.01.2009  16:57          4.148.95
13.01.2009  15:32          4
04.02.2009  21:48          4.644.12
04.02.2009  21:48          1.80
04.02.2009  21:48          3.07
04.02.2009  21:48          30.95
04.02.2009  21:48          9.21
13.01.2009  15:27          12
19.01.2009  16:54          2.449.13
04.02.2009  21:48          6.085.96
13.01.2009  15:01          3.10
04.02.2009  21:48          3.28
                12 Datei(en)    17.
                2 Verzeichnis(se),

C:\Programme\Kleio\Notar>
```

• KLEIO

Credit networks VI

Verlaufsnetzwerk Artois



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• process network in the case of Jean Pierre Braun

→ Credit networks VII – HNF 1.0?

→ HNR as organisational system and visualisation tool

→ HNR as patterns of explanation

→ computing problems

→ consolidation by workshops, handbooks (Düring et al. 2015) vs. „zweithäufigste Leerformel[!] der Geschichtswissenschaft“ (Reinhard)



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B. Networks of music and musicians – the example of Georg Philipp Telemann

- rarely HNR in historical musicological research
- Jutta Toelle (HU Berlin): *Oper als Geschäft* (Ph.D 2007)
- Katrin Bicher (HU Berlin): *Das Netzwerk des Wiener Vereins für musikalische Privataufführungen* (ongoing Ph.D)
- Bolz/Kelber/Knoth (LMU): Musikwissenschaft: Generationen, Netzwerke, Denkstrukturen (forthcoming)
- Katrin Losleben (FIMT Bayreuth): „Schüler von ...“-Konzepte in der Gesangsausbildung des 19. Jahrhunderts (ongoing Habil.)

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Georg Philipp Telemann I



source: Köhlerschmidt/Voigt: Pauken und Perücken, cover

Vita

- * 1681 Magdeburg, † 1765 Hamburg
- grammar school in Magdeburg, Zellerfeld and Hildesheim, speaks six languages
- studied law in Leipzig, private music lessons and autodidactical organology
- court composer in Sorau and Eisenach
- 1712 music director in Frankfurt/Main
- 1721 *Cantor Iohannei*, music and opera director in Hamburg
- 1737/38 journey to Paris

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Georg Philipp Telemann II



source: Köhlerschmidt/Voigt: Pauken und Perücken, cover

Oeuvre

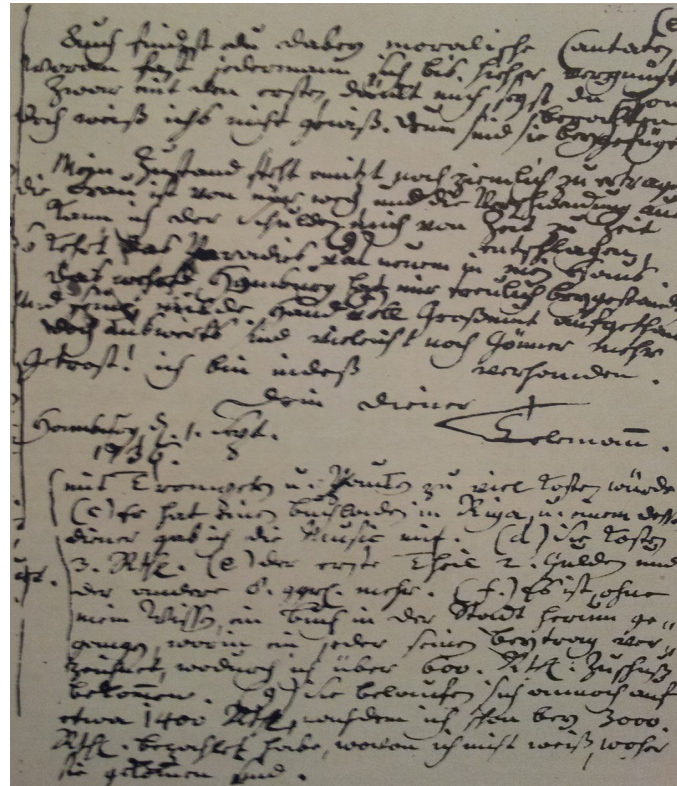
- stylistic eclecticist with french, italian and slavic influences
- cantable tunes, tone paintings, extraordinary harmony
- TWV listed about 3.500 works, half of them church cantatas
- throughout the end of the 20th century he was recognised as an inferior mass composer
- worked with important librettists (Gottsched, Klopstock, König; used the German language (Neumeister))
- wrote *essercizii musici*
- prints were self-published

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Sources

- letters (Grosse/Jung 1972)



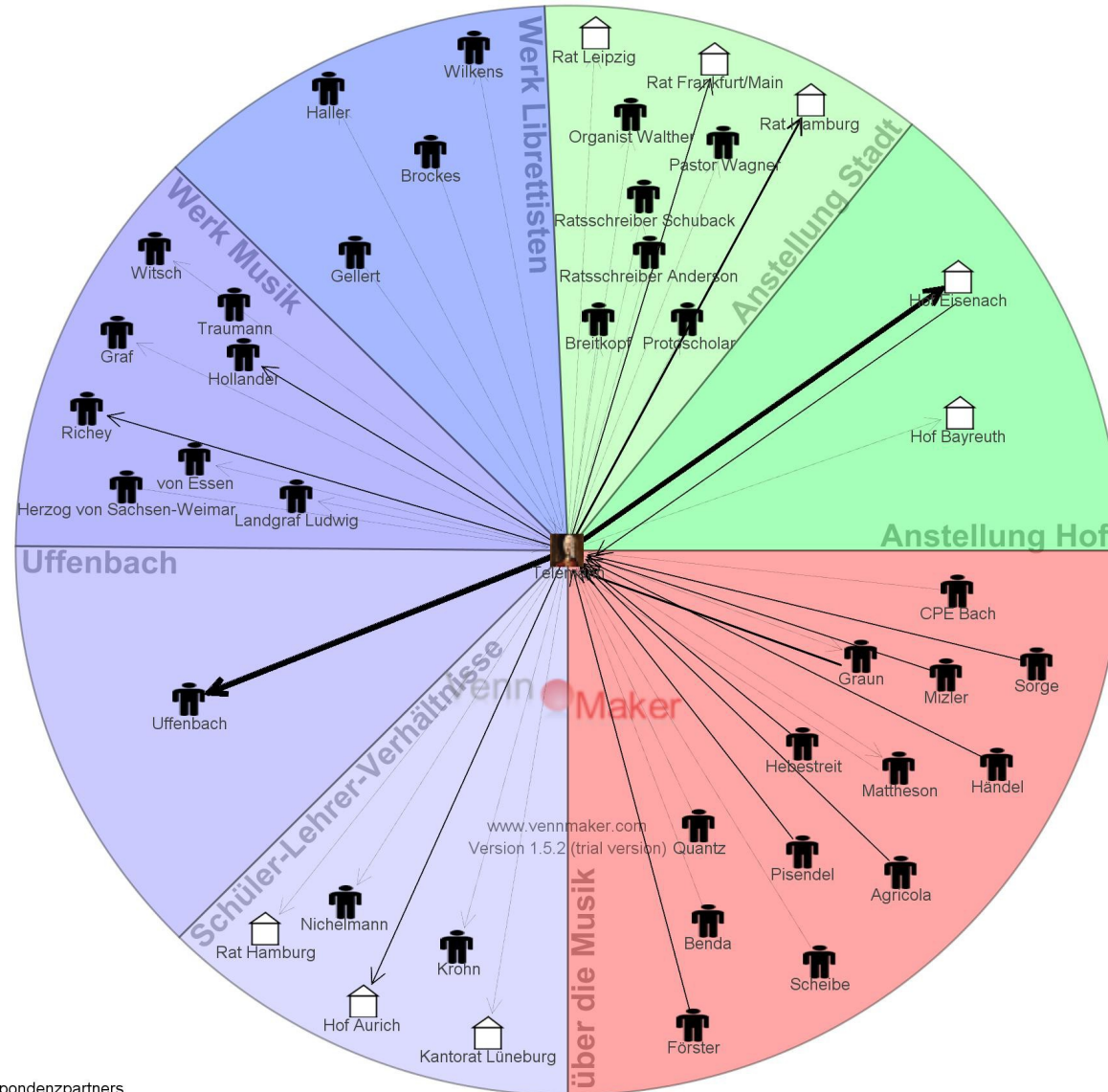
letter Telemann to Hollander, 1.09.1736

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- three autobiographical notes (i.a. in Matthesons *Ehrenpforte* 1740)
- his oeuvre (Menken 1995, Ruhnke 1999, Stewart 1990)

personal network



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„Music of the future“ I

- actor network theory (Latour)
- transfer of the documents via PDF OCR/HRT with AbbyyFinereader to searchable corpora (text mining); subsequent processing via visualisation, new source for names and locations in the network = network of musicians
- transfer of the sheet music (PDF) via PDF OCR and Sibelius in searchable corpora; subsequent processing via chord labeling for exploring harmonic structures (MIR) (Konz/Müller/Kleinertz 2013), comparison with the scores of (other) composers = network of music

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What can HNR 2.0 provide?

- searchable digital corpora (big data)
- automatical extraction and production of networks = new possibilities of explanation and valorisation
- requirement: easily operated software
- problems: calculations, time

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