Obstacles and barriers in research work on historical tornadoes in Central Europe

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Fig.1: Postcard showing tornado damage in Jabłonnec nad Nisou (CZ) in the year 1915
Introduction

- European Severe Storm Laboratory (ESSL) – founded in 2006

- European Severe Weather Database (ESWD) – initiated in 2004

Fig.2: European Severe Weather Database (ESWD), ESSL e.V.

www.eswd.eu

Nikolai Dotzek (1966 - 2010)
Introduction

• Early European pioneers in the field of severe weather research:

  Alfred Wegener (1880 – 1930)           Johannes Peter Letzmann (1885 – 1971)

• Wegener and Letzmann: Collected and analyzed severe weather events, e.g. tornadoes

• Developed the first theories in the field of tornado research in Europe

• Investigation area: All over Europe
Motivation

• Lack of information from the periods before the year 2000

• Large amount of missing information before the years 1990 / 1946 / 1919
Motivation

• Lack of information / large amount of missing information

→ Some Reasons:

• non-internet based media structure / archives / church records / etc.
• previously unknown or still unknown meteorological publications
• Different languages ↔ lack of communication
• Historical aspects I : Territorial changes (mostly caused by wars)
• Historical aspects II: Changes of regional languages / population
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• Expanding climatological knowledge regarding historical severe storm occurrence (Climatology / Meteorology)

• Finding out what details are given as “reasons“ to explain the lack of communication (Media Studies / Cultural Studies / Social Studies)
Methods

I. Define the severe weather event type

→ Tornadoes:

• Rare event
• Individual coverage in historical media expected
• Individual local impacts on society expected
• More variety in reporting expected
Methods

I. Define the severe weather event type
   → Tornadoes

II. Define the study area: Focus on areas and regions in Central Europe, which had minor or major political and social changes caused by wars, etc..
   
   → Investigation areas:

   ◦ L‘Alsace (France)
   ◦ Sudentenland / Sudety (Czech Republic)
   ◦ Post-WWII western and northern Poland (Poland)
   ◦ Kaliningradskaya oblast (Russian Federation)
Methods

I. Define the severe weather event type
   → Tornadoes

II. Define the study area: Focus on areas and regions in Central Europe, which had minor or major political and social changes caused by wars, etc..
   → Investigation areas (FR / CZ / PL / RU)

III. Search and collect historical information

   • Previously unknown tornado events
   • Further information / sources about known tornado events
Methods

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   → Tornadoes

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III. Search and collect historical information

IV. Analyzing the potentials of obstacles and barriers, which may be responsible for a lack of information / communication

V. Presentation of the results / conclusion
General Results

- $n = 130$ events (1363 – 1940)
  - 104 events previously unknown
  - 26 events known before occurrence of these investigated areas

- Maximum: 19th century ($n = 64$ events)
  - Founding of newspaper publishers
  - Scientific sources (since approx. 1850)

Oldest: (year) 1363 – Jelenia Góra (Poland)
Youngest: July 1940 – Borzymy (Poland)
Results for L‘Alsace (France)

- $n = 3$ events (time period: 1865 – 1900)

In details:

14 08 1865 – Soultzmatt (Haut-Rhin), Région Alsace
24 05 1878 – Offendorf (Bas-Rhin), Région Alsace – F3-Tornado
18.06.1900 – Schirrhoffen (Bas-Rhin), Région Alsace

Source information:

- 2 newspaper reports + witnesses
- 1 observation by local weather station (incl. meteorological publication)

Language results:

- 1 report in French only (refering to the year 1865 event)
- 1 report in French and German available
- 1 report in German only

Places:

- all available in past and present maps
Results for Sudentenland / Sudety (Czech Rep.)

- n = 7 events (time period: 1818 – 1933)

Including a strong tornado in the Liberec district in 1915:

Fig.9: Postcard showing tornado damage in Jabloniec nad Nisou (CZ) in the year 1915
Results for Sudentenland / Sudety (Czech Rep.)

- n = 7 events (time period: 1818 – 1933)

In details (selected events):

  16 08 1833 – Žatec / Saaz – Ústecký kraj
  12 08 1915 – Jablonnec nad Nisou / Gablonz an der Neiße – Liberecký kraj – F3-Tornado
  22 06 1933 – Janov nad Nisou / Johannesberg – Liberecký kraj

Source information:

- 7 newspaper reports + witnesses / postcards (1 event) / incl. 1 administrative report

Language results:

- 0 reports in Czech only
- 4 reports in Czech and German
- 3 reports in German only

Places:

- German sources refering to German place names, Czech sources refering to Czech place names
- Greatest difficulties in finding small villages by German place names only
Results for Sudentenland / Sudety (Czech Rep.)

22 06 1933 – Janov nad Nisou / Johannesberg – Liberecký kraj

III. volební období.

8. zasedání.

Tisk 1091.

Původní znění.

Antrag

des Senators Pilz und Genossen

auf Gewährung einer Unterstützung für die durch eine Elementarkatastrophe geschädigten Einwohner der Gemeinde Johannesberg bei Gablonz a./N.


Es kamen lauter Häuser und Arbeiter dadurch zu grossen Schaden, da bei einzelnen der ganze Dachstuhl abgehoben oder zertrümmert wurde. Der Schaden des Einzelnen beträgt 10.000.- Kč bis 50.000.- Kč. Im gesamten konnten 16 beschädigte Häuser festgestellt werden mit einer Schadenssumme von über 100.000.- Kč. Das ganze Unglück trug sich in 2 Minuten zu.

Deshalb beantragen die Gefertigten:

Es wolle aus Mitteln des Staates eine sofortige und hinreichende Unterstützung bewilligt werden, damit die Betroffenen durch den entstandenen Schaden und durch die damit verbundene Belastung nicht um ihr Hab und Gut kommen.

Prag, am 28. Juni 1933.

Fig.10: Administrative report, Jablonnec nad Nisou community. Národní archiv, Prague.
Results for post-WWII western and northern Poland
(Opolskie, Dolnośląskie, Lubuskie, Zachodniopomorskie, Pomorskie, Warminsko-Mazurskie)
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(Opolskie, Dolnośląskie, Lubuskie, Zachodniopomorskie, Pomorskie, Warminsko-Mazurskie)

- n = 111 events (time period: 1363 – 1940)
Results for post-WWII western and northern Poland
(Opolskie, Dolnośląskie, Lubuskie, Zachodniopomorskie, Pomorskie, Warminsko-Mazurskie)

• n = 111 events (time period: 1363 – 1940)

Some selected events:

30 07 1862 – Żerków, Raszewy / Zerkow, Raszewo – woj. Wielkopolskie – F4-Tornado
14 05 1886 – Krosno Odrzańskie / Crossen an der Oder – woj. Lubuskie – F3-Tornado / 8 people killed

Source information:

• 77 newspaper reports + witnesses; all reports in German archives.
• 34 reports in scientific publications (Dep. of Meteorology / Dep. of Agriculture)

Language results:

• 1 report in Polish only
• 6 reports in Polish and German
• 104 reports in German only

Places:

• German sources refering to German place names only
• Greatest difficulties in finding village and smaller towns by German place names only
Results for Kaliningradskaya oblast (Russia)

- n = 9 events (time period: 1701 – 1937)

Source information:

- 7 newspaper reports + witnesses
- 2 reports in scientific publications (Dep. of Meteorology / Dep. of Agriculture)
  all reports in German archives

Language results:

- 9 reports in German only
- 0 reports in Russian only or in Russia and German

Places:

- German sources referring to German place names only
- Mostly not possible to find Russian place names in modern media (except bigger towns)
Results for Kaliningradskaya oblast (Russia)

Further historical aspect: WWII devastation and deserted areas

→ Places can only be found using historical maps → German archives

Fig.13: Top.map Ostpreußen, 1937. Bundesamt für Geodäsie, Deutschland

Fig.14: Satellite picture, 2009. Googel Earth, 2013
Results in terms of source languages

- Elsass (L'Alsace, FR)
- Sudentenland (Sudety, CZ)
- pre-WWII E Germany and West Prussia (PL)
- pre-WWII Northern East Prussia (Kaliningrad, RU)

Legend:
- non-German-language sources
- German-language sources
- bilingual sources
Summary

I. Source availability in terms of language:

• Bilingual areas (past and present time): Information available in both languages
• Bilingual areas (pre-1945): Availability depends on local reporting / on population
• Pre-1945 German areas: Availability predominantly in German language

II. Source availability in terms of archives:

• Bilingual areas (all): Sources available in local archives (county or town archives)
• Pre-1945 German areas: Predominantly in German archives in Germany

III. Local Places:

• L‘Alsace: Names of local places nearly unchanged
• Sudetenland: Official pre-1945 Czech names used after 1945
• W and N Poland: Names modified or phonetically adapted to Polish
• Kaliningradskaya obl.: Encompassing renaming / some local areas deserted
Conclusion

1. The lack of information / communication for the post-1945 Polish and Russian areas can be explained by a lack of transfer of information from German into Polish or Russian language. 
   It must be assumed that a lot is still unknown or undiscovered in German archives.

2. The workload for individual events can be very comprehensive because of studying historical directories, maps and/or other local-historical features.

3. Productive cooperations are needed to accomplish access to information which is only given in German language and stored in German archives.

4. Emotional obstacles are rare, but are still a matter refering to individual war and post-war experiences and political changes (partly non-scientific factors)
Conclusion

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2. The workload for individual events can be very comprehensive because of studying historical directories, maps and/or other local-historical features.

3. Productive cooperations are needed to accomplish access to information which is only given in German language and stored in European archives.

4. Information should be available in the form of databases, publications and instructions for own archival research. All events are European events.

Fig.14:Tornado database report. ESWD.