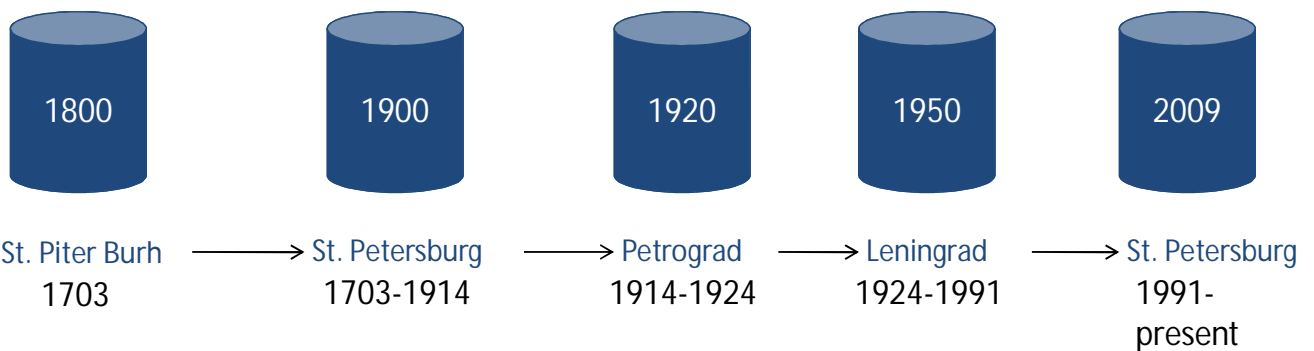# Language Evolution on the Go

Gideon Zenz, Nina Tahmasebi, Thomas Risse
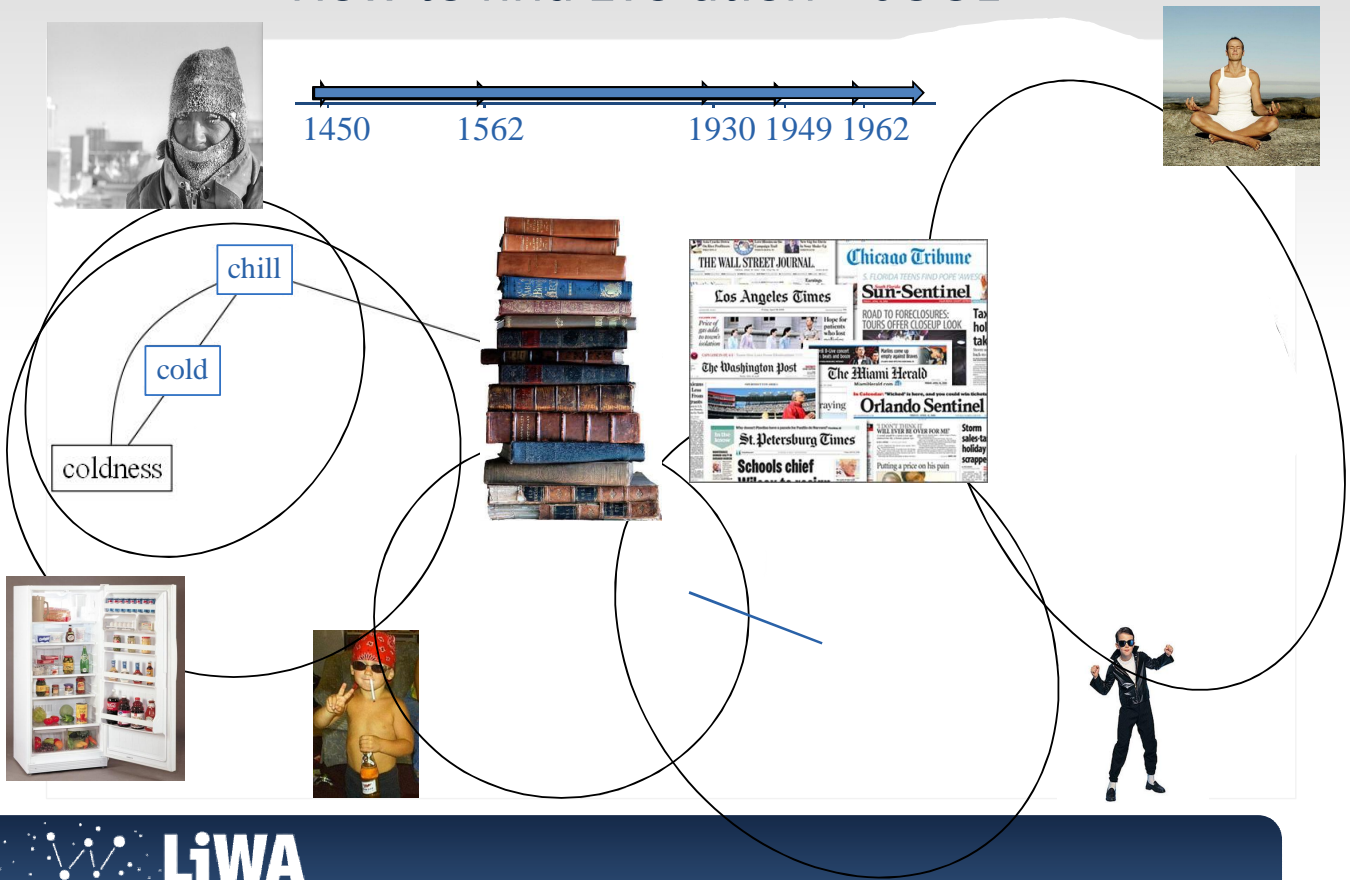L3S Research Center, Hannover, Germany

SAME 2010 - 3rd International Workshop on
Semantic Ambient Media Experience (NAMU Series)
10. November 2010

Language Evolution

- Language is evolving over time
  - New insights
  - Political and cultural trends
  - Legal requirements
  - High-impact events
- Reflected in the archive content

1800	1900	1920	1950	2009

St. Piter Burh → St. Petersburg → Petrograd → Leningrad → St. Petersburg
1703   1703-1914   1914-1924   1924-1991   1991-present

How to find Evolution "COOL"

1450　　1562　　1930 1949 1962

chill

cold

coldness

THE WALL STREET JOURNAL

Chicago Tribune

Los Angeles Times

Sun-Sentinel

The Washington Post

The Miami Herald

Orlando Sentinel

St. Petersburg Times

Schools chief

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Who is interested in this? (1/2)

- Professionals
  - Linguists, Historians
  - Interested in the evolution itself and the reasons
  - Where
    - Mainly while being in their office
    - But why not in the library or …
    - … during an excursion to an historic place.
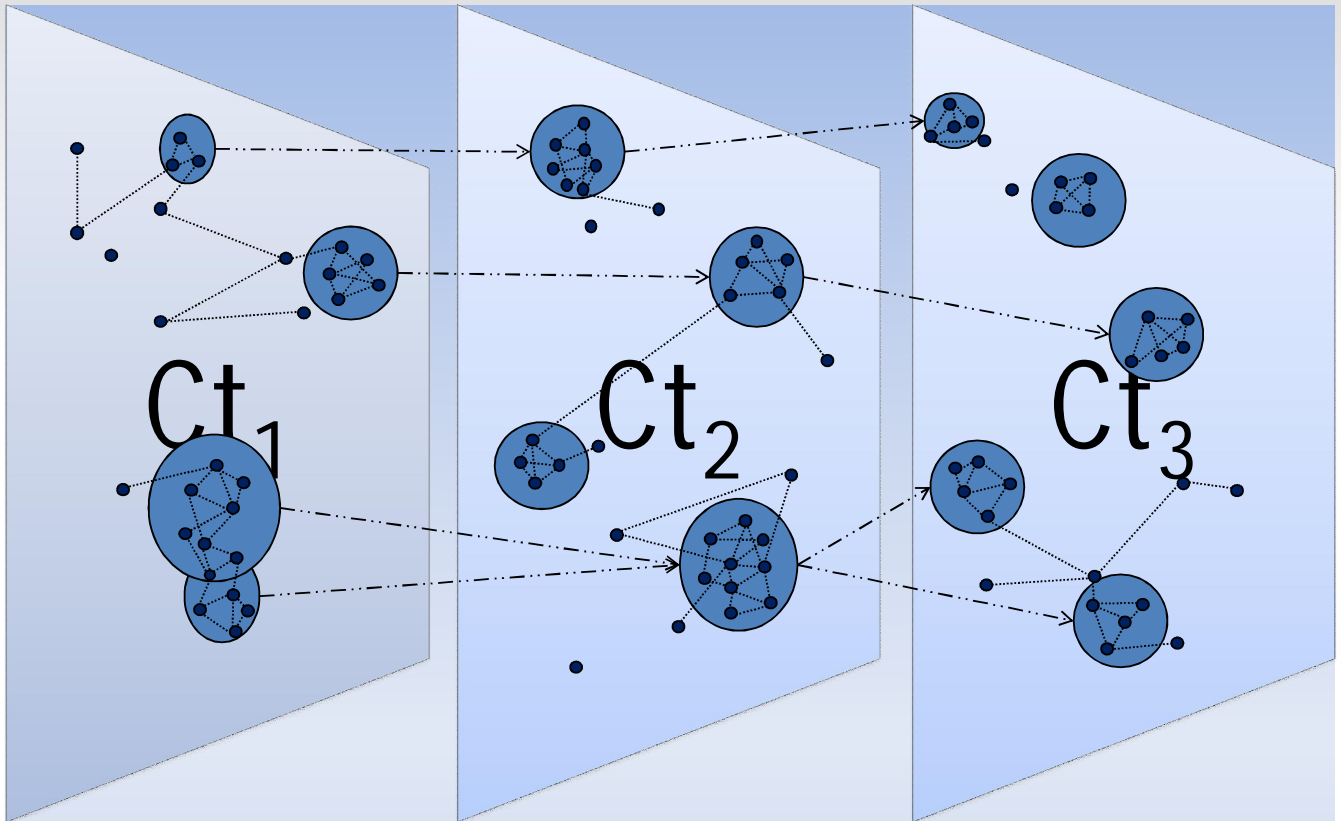
Who is interested in this? (2/2)

Others: Students, Travellers, ...

- Not directly interested in the evolution itself
- But they don't want to be effected by it (e.g. when looking for information about Petrograd)
→ Search engine should know about it
- They a curious to know more, when they found evolution
- Where:
  - Mainly from home
  - But why not in a library or ...
  - ... during an excursion (to St. Petersburg)

How to detect evolution?

Process: The Terminology Evolution Graph

Ct_1 Ct_2 Ct_3

Cluster for „Flight" for several years from the Times archive (1785 – 1985)

Year	Cluster member	Sense
1867	yard, terrace, flight	Hurdle race
1892	hurdle race, flight, year, steeplechase	Hurdle race
1927	flight, england, london, ontariolondon	Travel
1938	length, flight, spin, pace	Cricket
1957	flight, speed, direction spin, pace	Cricket
1973	flight, riding, sailing, vino, free skiing	Traveling
1980	flight, visa, free board, week, pocket money, home	Travel
1984	flight, swimming pool, transfer, accommodation	Travel

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Evolution on the Go

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Aim of the Development

- We have two types of users
  - Professionals
  - Occasional users (more privat)
- Current focus more on professional users and interested travelers
- Usable at the office and „on the go"
- Easy usability while providing all important information

Language Evolution on the Go

Search Term

Term Evolution

Term Frequencies per year

Term Cluster Display

- Understand how a term is described

Conclusions & Outlook

- Automatic Detection of Language Evolution is necessary
  - For keeping archives accessible
  - Support professionals
  - Answer the information need of individuals
- Usage mainly in the office or at home
- But „on the Go" might bring more insights in shorter time
- First prototype exist
- Much further development is necessary for algorithms and visualizations
- User Evaluation are under preparation
- More ideas for makeing it more „ambient" are welcome

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Thank you!

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More information on
http://www.liwa-project.eu/