

Visualizing Version Variation

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Overview

- Introduction
- Background
- Version Variation Visualization (VVV)
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Who is Bob?

- July 2006: Joined Computer Science Department at Swansea University
- 2001-2006: worked at VRVis Research Center (VRVis.at)—the bridge between academia and industry in Austria
- 2005: PhD, Computer Science, Vienna University of Technology (Gruess Gott TUWien)
- 2000: Msc., Computer Science, University of New Hampshire, Durham, NH
- 1997: BSc., Physics, University of Massachusetts (ZooMass), Amherst, MA
- Research in: Data visualization, Software Engineering, Human-computer interaction

Version Variation Visualization: Challenges and Goals

Challenges

Complex, Non-numeric/uncertain, Multi-Dimensional Data Set (translation, author, location, year, popularity/influence)

Where, when, into which languages has Othello been translated?

How have translators influenced one another?

How do versions **vary** globally / locally?

Which translations are more **similar** to original?

Goals of Visualization

Present different facets of data

Analyze data in detail

Explore relationships and patterns

Formulate new hypotheses



- Othello (black) has secretly married Brabantio's daughter.
 - Brabantio is unhappy.
 - Duke of Venice points out that Othello is a good man

If virtue no delighted beauty lack, Your son-in-law is far more fair than black. W. Shakespeare (Othello, c.1607)

- Duke insults black people, but praises Othello.
 - It is not clear if this is said publicly, privately, seriously or jokingly. Translations vary.

Blue = German. Red/Green = back-translation to English. Green = terms unique to that version

Wenn es der Tugend nicht an lichter Schönheit fehlt,
Ist vielmehr blond als schwarz, den euer Kind gewählt 1826
If virtue does not lack bright-lit beauty, He is far more blond than black, whom your child has chosen
 J.W.O.Benda (during period of nation building)
 - never performed or reprinted (less popular)
 - frames it as a crude joke

Leiht Tugend ihre Farbe dem Gesicht,
Ist Euer Eidam weiß, ein Schwarzer nicht. 1920
If virtue lends its colour to the face, Your son-in-law is white, not a black man
 M.Wolff (during the Weimar Republic)
 - first to be explicitly racist
 - best selling translation at time

Wenn nie der Tugend lichte Schönheit fehlt,
Ist Eure Tochter hell, nicht schwarz, vermählt. 1941
If virtue never lacks bright-lit beauty, Your daughter is brightly, not blackly, married.
 H.Schwarz (Germany under Hitler)
 - woman translator - focuses on relationship
 - Never performed or reprinted (less popular)

Zählte bei Menschen nur der innre Schein,
würden wir dunkler als Othello sein. 1956
If people's inward appearance were all that counted, We would be darker than Othello.
 H.Rothe (persecuted during WW2) (West Germany)
 - converted to a moralistic lesson (social war-guilt)
 - Successful print but rarely performed

Wenn man die Tugend muß als schön erkennen,
Dürft Ihr nicht häßlich Euren Eidam nennen. 1832
If one must recognise virtue as beautiful, You may not call your son-in-law ugly.
 W.Baudissin (cultural nation-building)
 - most famous German version
 - authoritative German leadership tone (no joke)

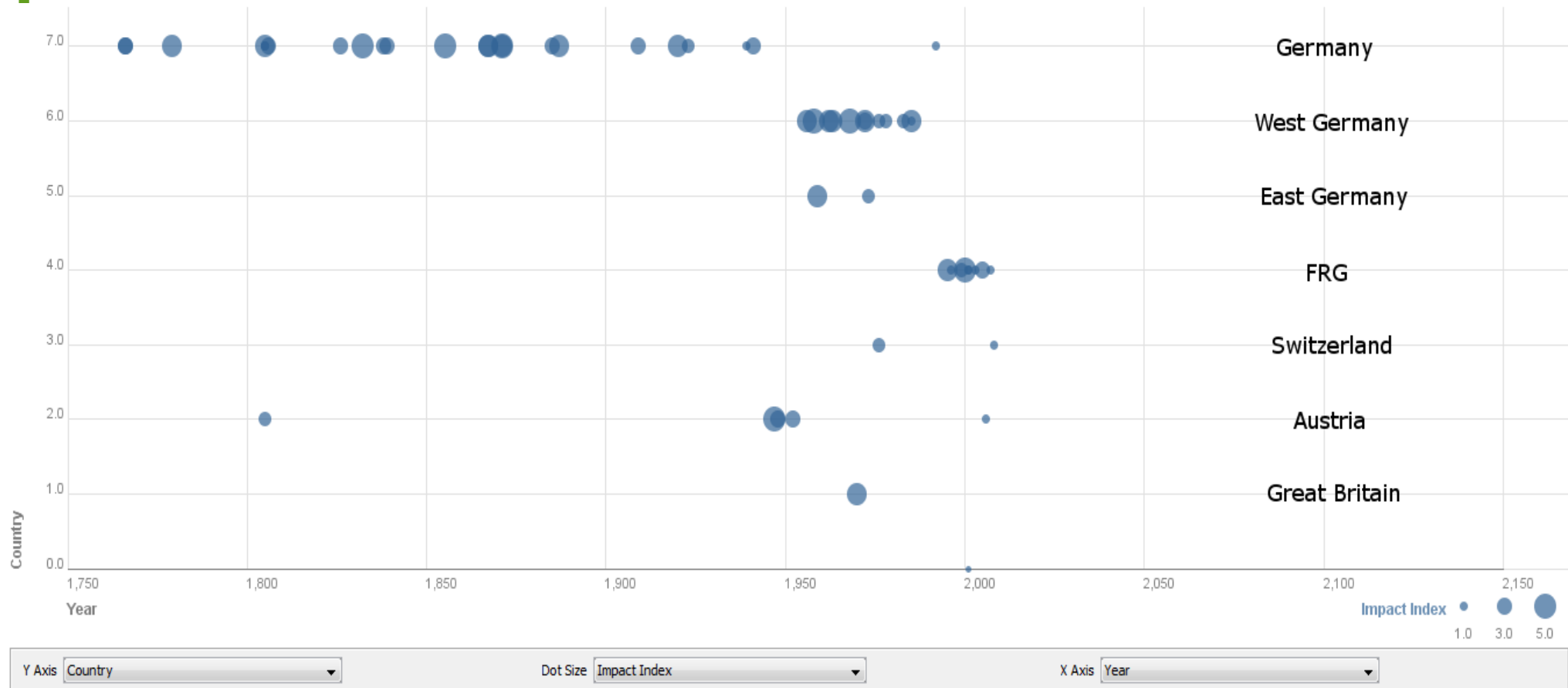
Spricht man von Tugend, als von einem Licht,
Scheint Euer Eidam mir so dunkel nicht. 1939
If one speaks of virtue as of a light, Your son-in-law seems not so dark to me
 E.Engel (Germany under Hitler)
 - use of 'dark' and centred on 'me': typical of fascism
 - renowned production in Berlin

Wenn Mannesmut nicht Reiz und Glanz entbehrt,
So ist er, wenn auch schwarz, höchst schätzenswert. 1941
If manly courage is not without charm and glory, Then he is, even if black, highly estimable.
 T.Von Zeynek (Austria under Hitler)
 - Reflects fascist male-dominated racist, and offensive
 - Wasn't performed until the 1960s (reflectively)

Wenn Ihr der Tugend nicht Schönheit absprechen wollt,
Ist Euer Schwiegersohn nicht dunkel, sondern Gold! 1970
If you do not wish to deny beauty to virtue, Your son-in-law is not dark but gold!
 E.Fried (in London, self-exiled from post-war Germany)
 - Famous radical leftist poet - polysemic metaphor

Background of Translation Data

57 translations of *Othello* from 7 various countries, ranging from 1766 to 2006



Text (Natural Language) Processing

Document Collection

Document Standardization

Scanned and stored in ASCII format

Tokenization

Break stream of characters into words or tokens

Remove articles: e.g., a, the (die, der, das, ein, etc.)

Language dependent

Lemmatization

Convert to root form, e.g., play, (-ing, -er, -s etc.)

Alignment

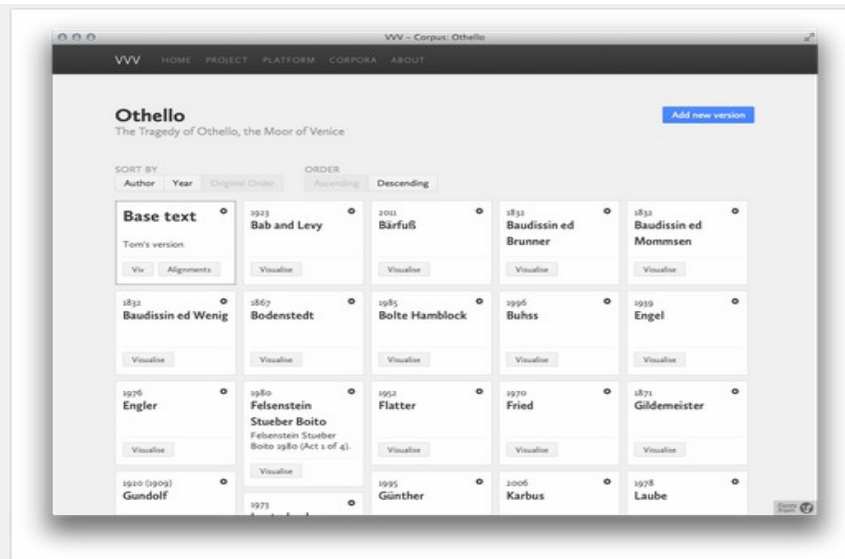
Semi-Automatic correspondence

Derive New Data: Concordances

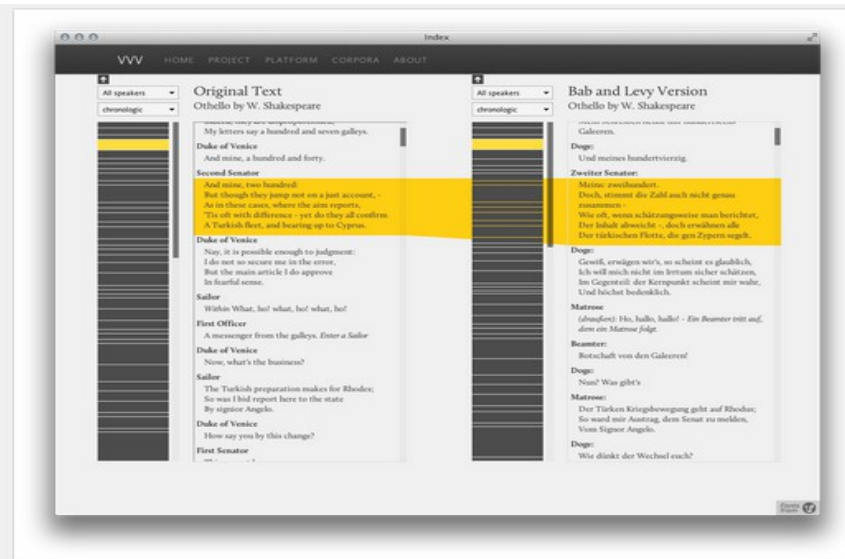
Token Frequency, Eddy and Viv values



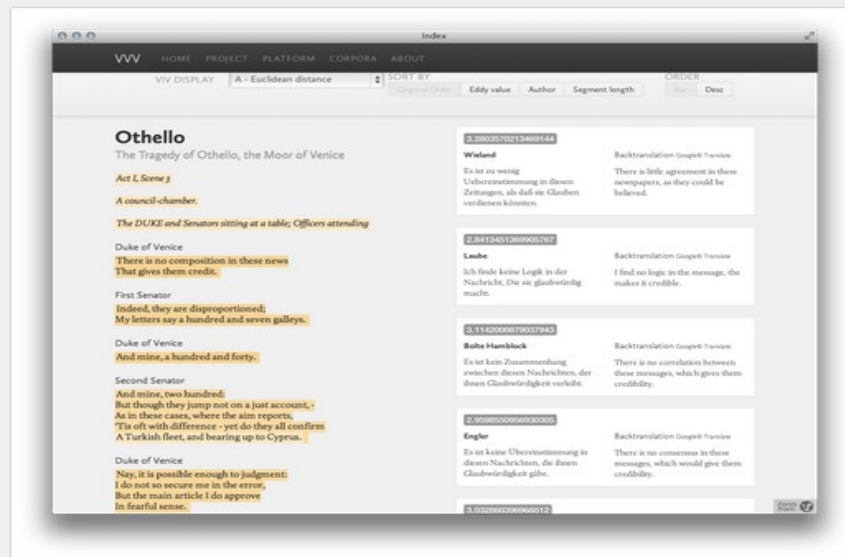
DelightedBeauty.org/VVV



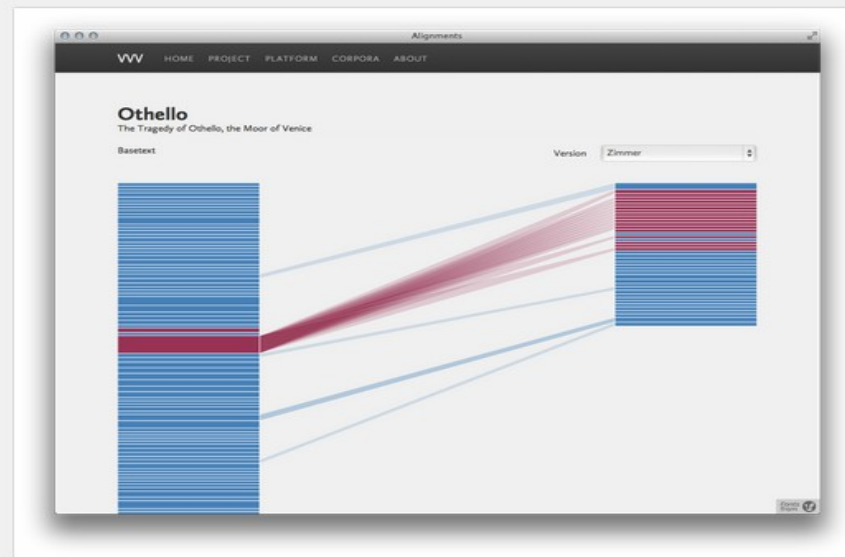
The Othello corpus overview



Interface study to explore base text and versions and their alignments. Navigate to the Othello corpus overview and select a version.



Interface study for the exploration of Viv & Eddy values.



Visualization sketch to explore highlevel alignment patterns.

Some Project Personnel

- Tom Cheesman, Modern Languages, Swansea University
- Bob Laramee, Data Visualization, Swansea University
- Zhao Geng, PhD candidate in Data Visualization, Computer Science, Swansea University
- Kevin Flanagan, Independent Software Developer, Bristol
- Stephan Thiel, Software Developer, Studio NAND, Berlin

Required Skills

Modern Languages

- Text scanning, text alignment, German, Shakespeare's works, translation

Modern Languages and Computer Science

- Natural language processing: tokenization, lemmatization, concordance generation, statistics, (German)

Computer Science

- Efficient data storage, web hosting, programming and software development, computer graphics, text visualization, high-dimensional data visualization

Interdisciplinary Research

Data visualization (and computer science) is inherently interdisciplinary

- Interdisciplinary work contributes highly towards motivation: contributes positively towards student experience
- Researchers from other fields have big problems
- Special Bridging the Gaps (BTG) scheme at Swansea University
- Interdisciplinary research projects tend to have greater impact:

The New Scientist Online, BBC, Wired Magazine Online, Bristol Wired, Glasgow Wired, News Tech24.com, Wales Online, Western Mail, South Wales Evening Post, Business Perspectives, Fragmentary Texts, IT Wales, O1 (Austrian radio)

Interdisciplinary Researchers

Some positive attributes and roles of good interdisciplinarians

- Have an interest in what others are doing (curiosity)
- Collaborations: CFD and Fluid Engineers, Physicists, Biologists, Psychologists, Modern Languages, Mathematicians, Industry, Sports Scientists
- Attend and host interdisciplinary events, e.g., the Visible Lunch (Google: 'Visible Lunch'), SHARE, etc.
- Maintain a web page
- Joint writing/publishing: papers, proposals, abstracts, posters
- Organize joint events: workshops, presentations, excursions
- Training opportunities for students seem to arise naturally from collaborative research: new events, new conferences etc.

References

- Zhao Geng, Tom Cheesman, Robert S. Laramée, Kevin Flanagan, Stephan Thiel, ShakerVis: **Visual Analysis of Segment Variation of German Translations of Shakespeare's Othello**, *Information Visualization, forthcoming*
- Tom Cheesman, David M Berry, Robert S Laramée, Andrew J Rothwell, Alison Ehrmann, and Zhao Geng, **Visualizing Variation in a Shakespeare Re-Translation Corpus** (Long Paper), in *Digital Humanities (DH) 2012*, 16-22 July 2012, University of Hamburg, Germany
- Zhao Geng, Robert S.Laramée, Tom Cheesman, Andrew Rothwell, David M. Berry, and Alison Ehrmann, **Visualizing Translation Variation of Othello: A Survey of Text Visualization and Analysis Tools** , *Refereed Abstract* at the 3rd International Symposium for Humanities and Technology, *InterFace 2011*, University College London, UK, 27-29 July 2011
- Zhao Geng, Robert S. Laramée, David M. Berry, Alison Ehrmann, and Tom Cheesman, **Visualizing Translation Variation: Othello**, Chapter of *Advances in Visual Computing, Lecture Notes in Computer Science LNCS*, Volume 6938 (Proceedings of the 7th International Symposium on Visual Computing (ISVC) 2011, 26-28 September, 2011, Las Vegas, NV) pages 653-663, Springer

PDFs and more on Bob's web page:

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EuroVis 2014

The Eurographics Conference on Visualization

9-13 June 2014,
Swansea, South Wales, UK

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Welcome

EuroVis 2014, hosted by Swansea University in the UK, is the 16th annual visualization gathering organized by the Eurographics Working Group on Data Visualization and supported by the IEEE Visualization and Graphics Technical Committee (IEEE VGTC). EuroVis has been a Eurographics and IEEE co-supported international visualization symposium held in Europe annually since 1999. Since 2012 EuroVis is a conference.



The exciting and vibrant field of Visualization is an increasingly important research area due to its wide range of applications in many disciplines. In general, our ability to collect, store, and archive data vastly exceeds our ability derive useful knowledge and insight from it. This is a ubiquitous problem. Data visualization is key in gaining an understanding large, complex data sets by exploiting the human visual system. Data visualization leverages computer graphics in order to provide a visual overview, explore, analyze, and present phenomena which is often difficult to understand.

The objective of EuroVis is to foster greater exchange between visualization researchers and practitioners, and to draw more researchers and industry partners in Europe to enter this rapidly growing area of research. EuroVis has an expanded scope to include all areas of visualization, and a steadily more wide-spread visibility that achieves a more wide-spread impact.

EuroVis papers are published as a special issue of Computer Graphics Forum, (CGF) the International Journal of the Eurographics Association, using a two-stage review process.

The main conference is preceded by Workshops such as EuroVA 2012, the 5th international EuroVis Workshop on Visual Analytics, which will be held in the same location on June 9 and 10, 2012. Other closely related workshops will also be held.

New to EuroVis 2014

STARS

For the first time in 2014, EuroVis also features a survey paper track (also known as State-of-the-Art Report, STAR) which aims to foster an overview presentation of a particular sub-field of data visualization. STAR papers will be electronically archived and are fully citeable publications which will undergo a one-stage peer-review process by an international program committee. A selection of STAR submissions will be invited for a subsequent submission to the CGF journal. Details will be posted on the web site.

Short Paper Acceptance

Short papers will feature two acceptance categories: accept for oral presentation and accept as poster presentation. This way, more presenters will have the opportunity to showcase their work.

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Any Questions?

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