ISO 15926 and Semantic Technologies

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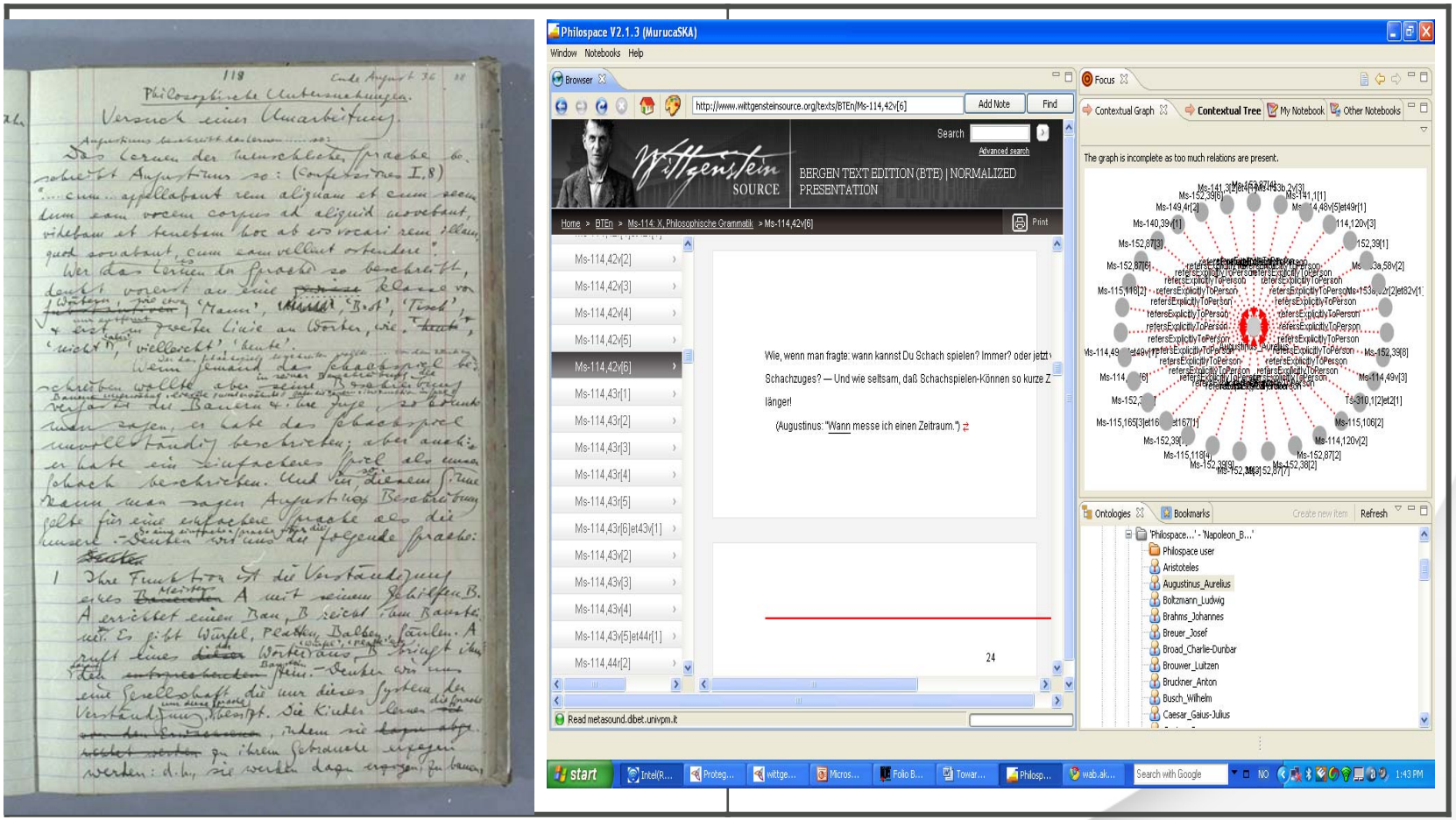
The Wittgenstein Archives: From Manuscripts to Semantic Web Representations

I would like the participants for valuable comments.

The Wittgenstein Archives at the University of Bergen (WAB, 1990-)

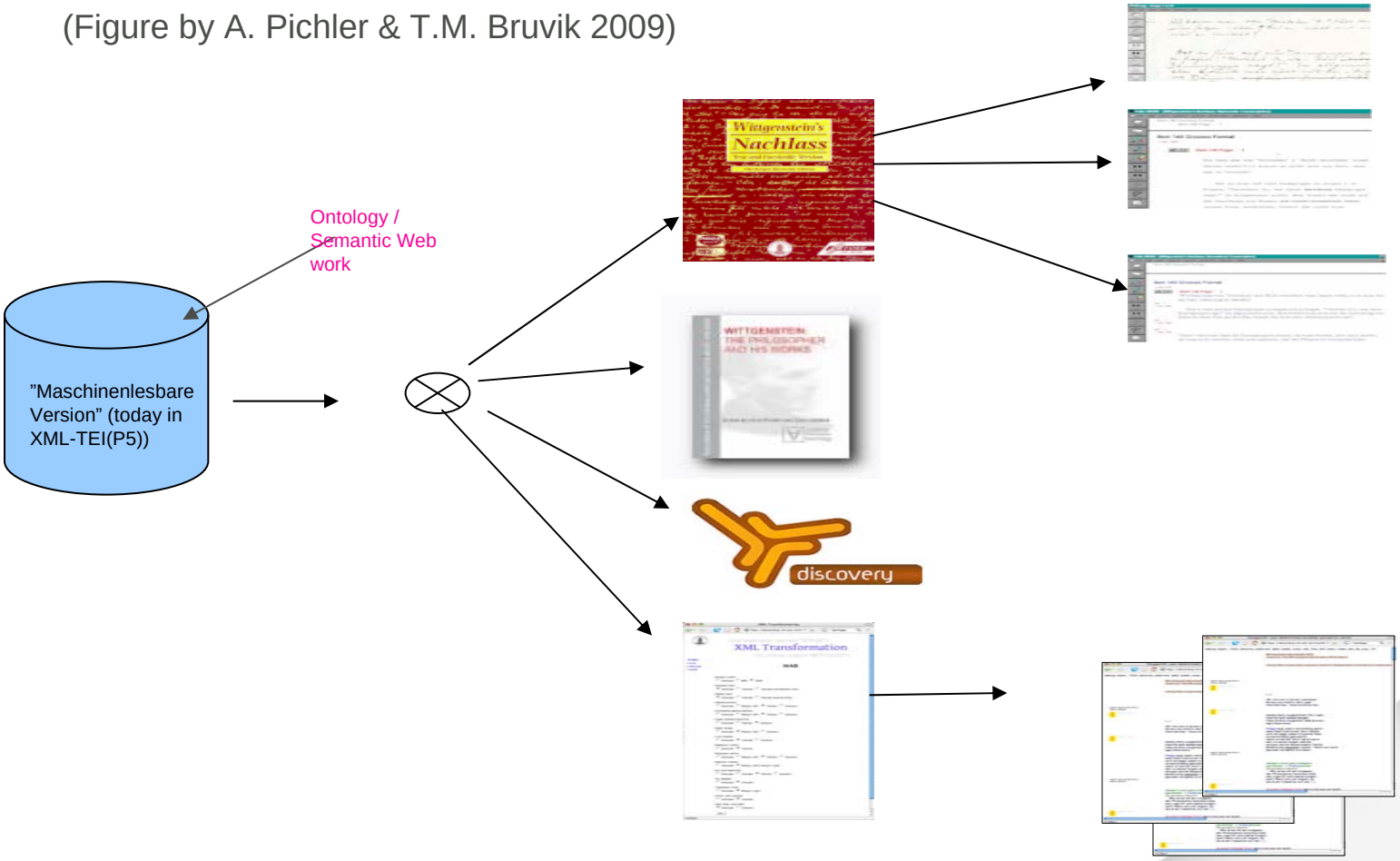
- Produced from 1990 to 1999 a ”machine-readable version” of Wittgenstein’s Nachlass
- Published in 2000, on the basis of the machine-readable version, at OUP ”Wittgenstein’s Nachlass: The Bergen Electronic Edition” (BEE)
- Has migrated the machine-readable version from MECS-WIT to XML-TEI(P5) markup language
- Has made 5000 pages of the Wittgenstein Nachlass OA available on the Web (http://www.wittgensteinsource.org/)
- Works towards a new BEE
- Has begun, in the frame of the EU funded DISCOVERY project, to apply Semantic Web thinking and technology to Wittgenstein’s Nachlass
    - Ontology Web Language (OWL)
    - Ontology editor *Protegé*
    - Ontology browser/navigator/visualizer *Philospace/SwickyNotes*

From manuscripts to Semantic Web representations



WAB's "machine-readable version" and products from it

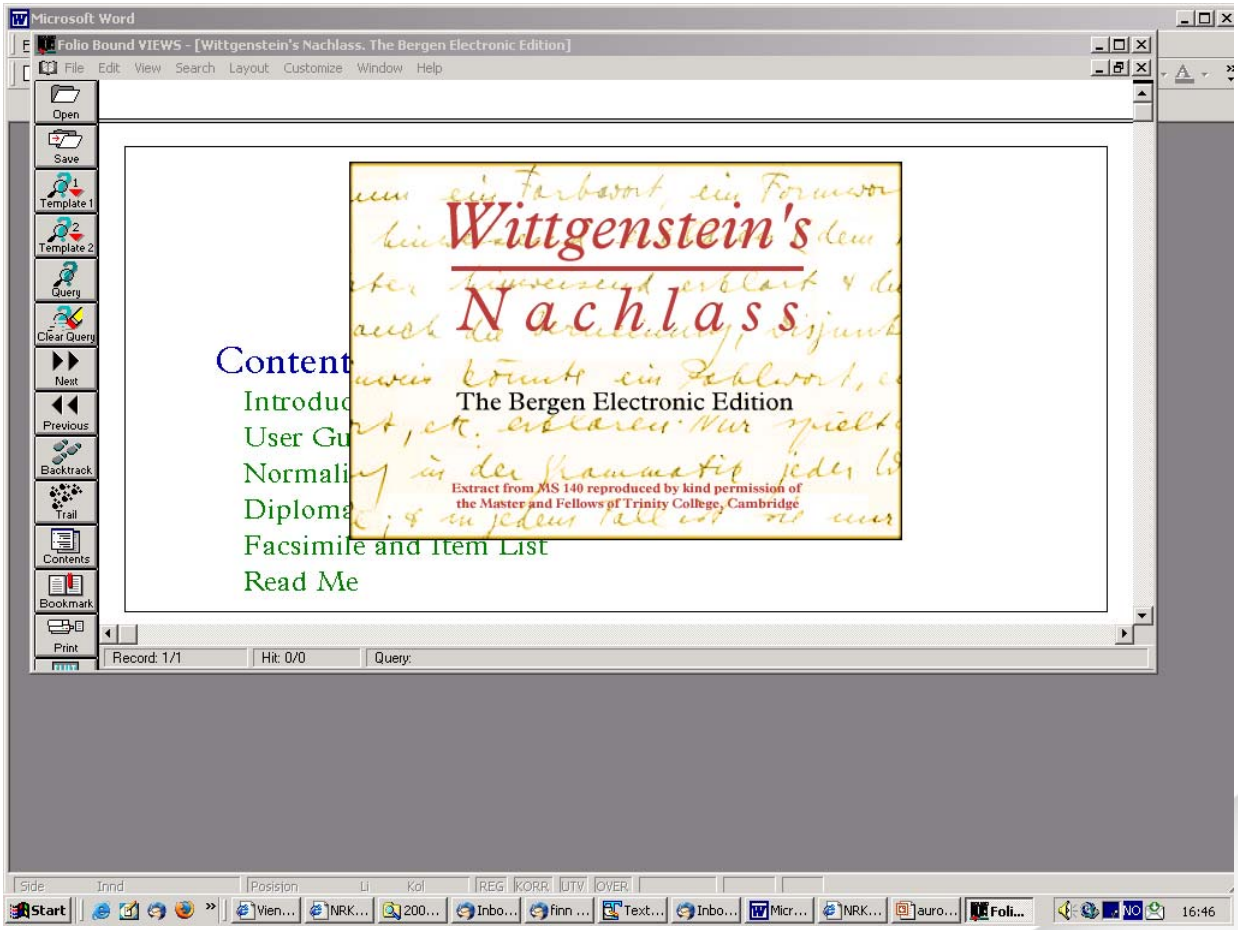
(Figure by A. Pichler & T.M. Bruvik 2009)



MECS-WIT -> XML-TEI(P5)

<R/330/R><sec/<indl/3/indl> <s/[s/2|Das Lernen der menschlichen Sprache be{hypl}schreibt [person/2\Augustinus/person| Augustinus, Aurelius/person] so{colon}/s| <i/[person/2\Augustinus/person| Augustinus, Aurelius/person] beschreibt das Lernen [pma/2\{sp/pma}/pma| der menschlichen Sprache/pma] so{colon}/i>/s] <latin/{lp}[extref/2\Confessiones I{p/ordinal}8{rp}<hl> <q/{udq/sudq}{sp/sss} cum {sp/sms} appellabant rem aliquam et cum secun{hypl}dum eam vocem corpus ad aliquid movebant, videbam et tenebam hoc ab eis vocari rem illam, quod sonabant, cum eam vellent ostendere{udq/eudq}/q>/extref| Augustinus, Aurelius; Confessiones 1,8/extref]{p/es}/latin>/s> /sec>	<ab n="Ms-115,118[2]" ana="date_19360800-19361100" rend="blbef_0 blaft_0"> <s type="es" rend="indl_3"><choice type="s"><orig type="alt1">Das Lernen der menschlichen Sprache be<lb rend="shyphen"/>schreibt <persName key="Augustinus, Aurelius" corresp="commentary">Augustinus</persName> so:</orig> <orig type="alt2"> <add rend="i"><persName key="Augustinus, Aurelius" corresp="commentary">Augustinus</persName> beschreibt das Lernen <corr type="pma"><orig type="pma1">&sp.pma;</orig> <reg type="pma2"> der menschlichen Sprache</reg></corr> so:</add></orig></choice> <seg xml:lang="latin">&lp;<rs type="extref" key="Augustinus, Aurelius; Confessiones 1, 8" corresp="commentary">Confessiones I&p.ordinal;8&rp;<lb rend="hl"/> <!--quote start-->&udq.sudq;&sp.sss; cum &sp.sms; appellabant rem aliquam et cum secun<lb rend="shyphen"/>dum eam vocem corpus ad aliquid movebant,<lb/> videbam et tenebam hoc ab eis vocari rem illam,<lb/> quod sonabant, cum eam vellent ostendere&udq.eudq;<!--quote end --> </rs>&p.es;</seg></s> <lb rend="hl"/></ab>

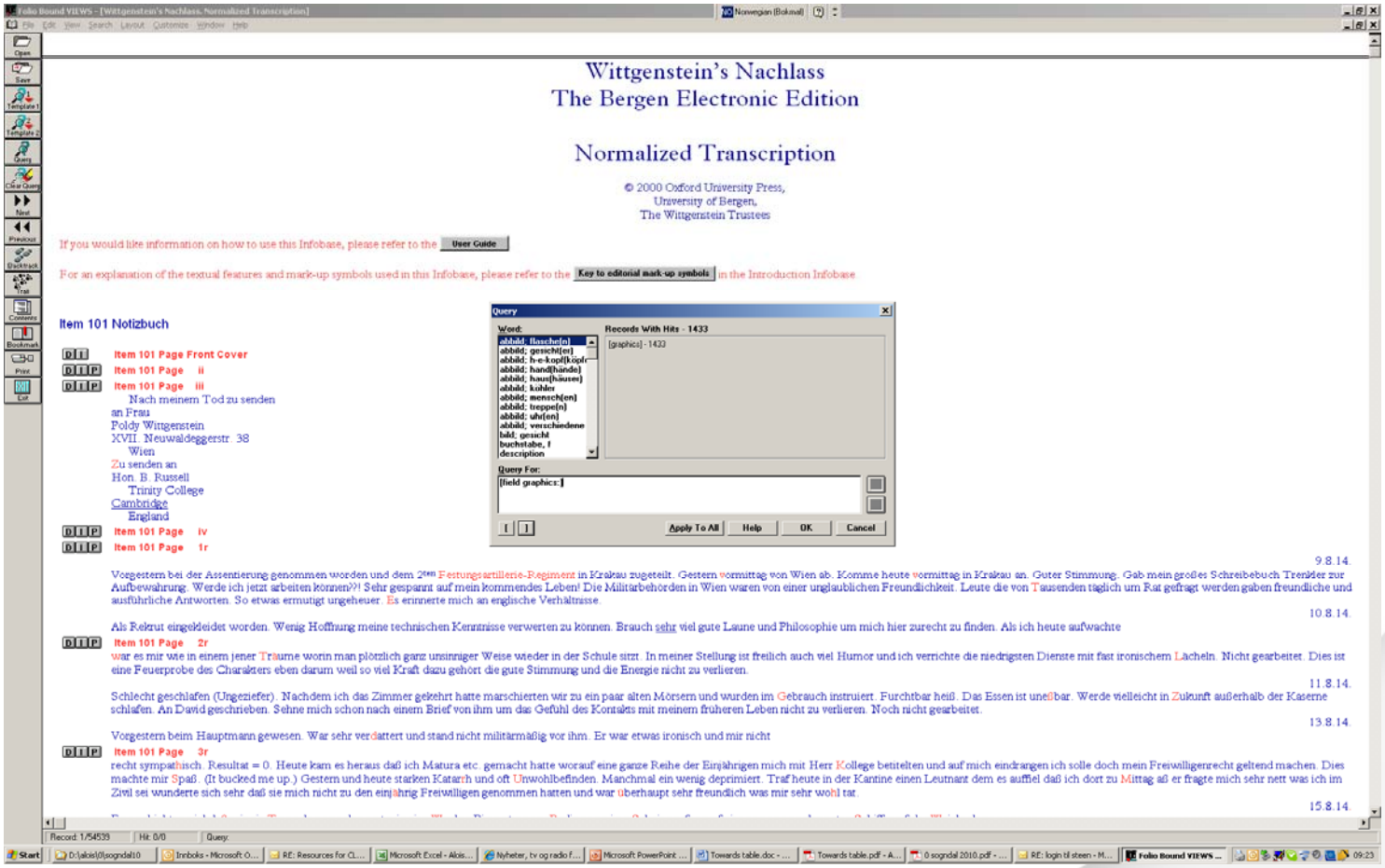
Bergen Electronic Edition (BEE, OUP 2000)



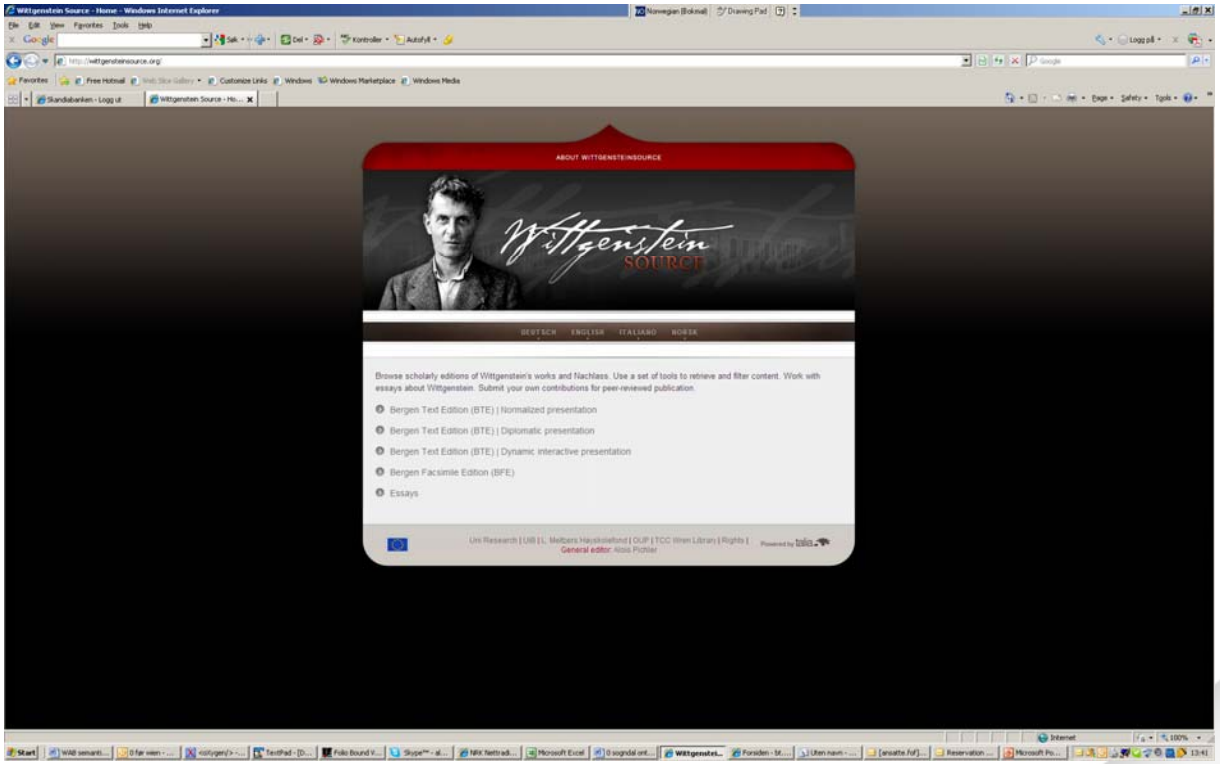
Semantic Web elements already in BEE

- ”Fields”
- ”Groups”
  - Mathematics taxonomy
  - Graphics taxonomy
- ”Shadow file”
  - Personal notebook function

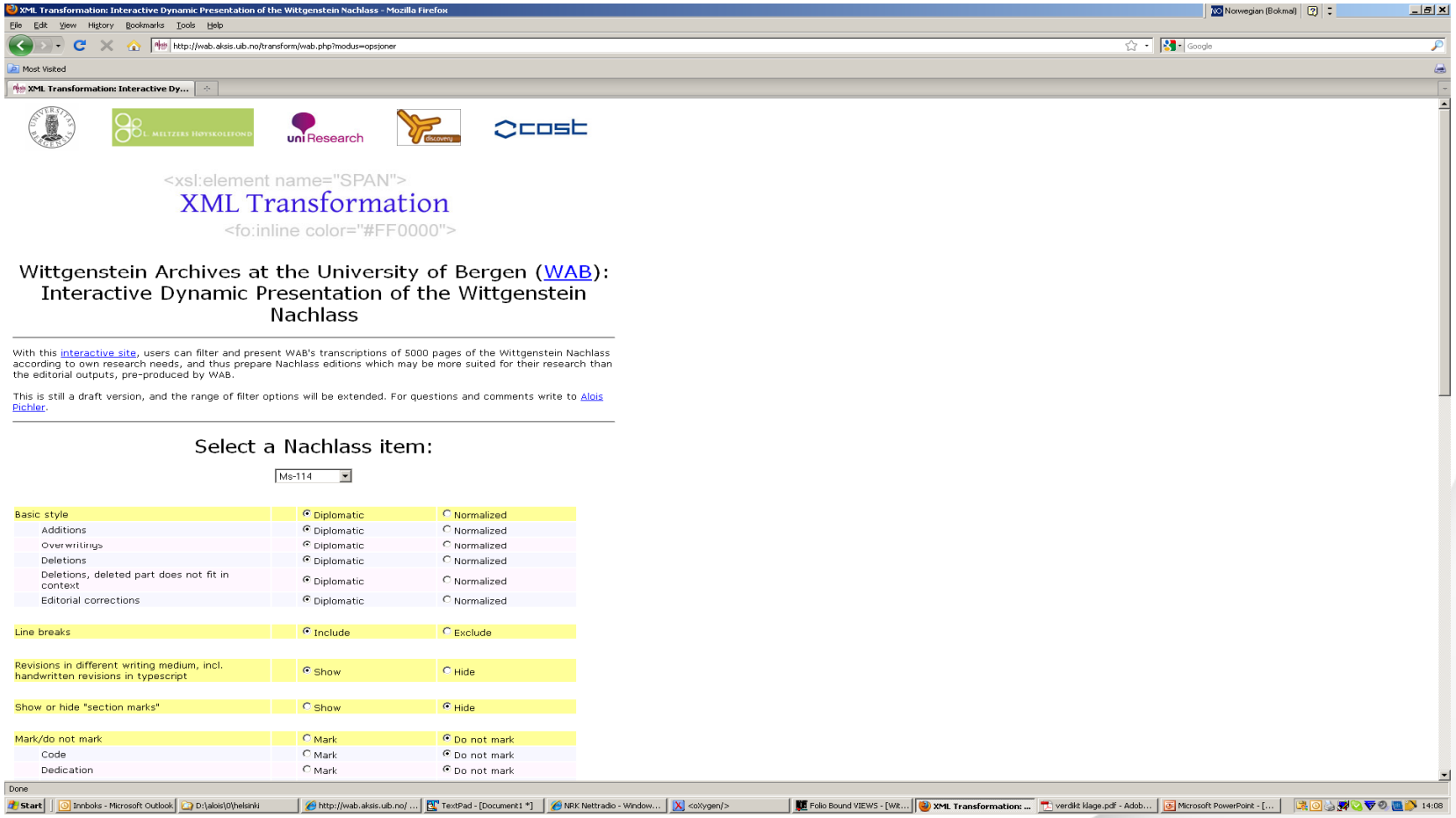
BEE: Graphics taxonomy



Wittgenstein Source



Interactive dynamic editing: Interactive dynamic presentation (IDP)



The Wittgenstein Source domain

<table>
<tr><th>Classes</th><th colspan="3">Subclasses</th><th>Instances (some examples)</th></tr>
<tr><td rowspan="6">Source</td><td rowspan="4">Primary source</td><td colspan="2">External source</td><td>• Augustinus, Aurelius: Confessiones
• Shakespeare, William: King Lear</td></tr>
<tr><td rowspan="3">Wittgenstein source</td><td>Bemerkung</td><td>• Ms-152,39[1]
• Ts-220,15[4]et16[1]et17[1]</td></tr>
<tr><td>MS</td><td>• Ms-152
• Ms-301</td></tr>
<tr><td>TS</td><td>• Ts-220
• Ts-310</td></tr>
<tr><td>”Work”</td><td>• PU
• PG</td></tr>
<tr><td colspan="3">Secondary source</td><td>• Johannessen, K. S.: The Concept of Practice in Wittgenstein’s Later Philosophy (1988)
• Krüger, H.W.: Die Entstehung des Big Typescript (1993)</td></tr>
<tr><td rowspan="6">Subject</td><td rowspan="4">Philosophical concept</td><td rowspan="2">Philosophical topic</td><td>Topics in W’s own phrasing</td><td>• Ts-213 Verstehen
• Ts-213 Bedeutung</td></tr>
<tr><td>Topics in WAB’s phrasing</td><td>• Unsinn
• Bild</td></tr>
<tr><td rowspan="2">Philosophical point</td><td>Points in W’s own phrasing</td><td>• Ts-213-001 Das Verstehen, die Meinung, fällt aus unsrer Betrachtung heraus</td></tr>
<tr><td>Points in WAB’s phrasing</td><td>• Die Frage nach der Verbindung zwischen Gedanke und Wirklichkeit aufgrund von Aehnlichkeit</td></tr>
<tr><td>Event</td><td></td><td></td><td></td></tr>
<tr><td>Place</td><td></td><td></td><td></td></tr>
<tr><td>…</td><td></td><td></td><td></td></tr>
<tr><td>Person</td><td></td><td></td><td></td><td>• Augustinus, Aurelius
• Kant, Immanuel</td></tr>
</table>

Examples of *classes* and *sub-classes*

- WittgensteinSource: Class of Wittgenstein primary sources.
  - MS: Subclass with instances: MS items
  - TS: Subclass with instances: TS items
  - Bemerkung: Subclass with instances: the single *Bemerkungen*

- PhilosophicalSubject: Class of philosophical topics, discussed in WittgensteinSource. Instances: Philosophical topics
  - Ts-213-Headings_Subject: Subclass with instances: Wittgenstein's own phrasings of philosophical topics in Ts-213 (Ts-213 content table chapter headings)
  - Ts-213-Subheadings_Subject: Subclass with instances: Wittgenstein's own descriptions of the philosophical points of Ts-213 (Ts-213 content table subchapter headings)
  - SemanticEnrichment: Subclass with instances: Short descriptions of the philosophical point of a Bemerkung

Examples of *properties*

- discovery:IsPartOf
- discovery:hasCopy
- discovery:hasDifferentVersion
- discovery:hasSubject
- discovery:refersExplicitlyToPerson
- discovery:refersToSource
- discovery:has Author

- IsPartOfWhole
- IsComplementaryTo
- HasPoint
- HasDate

- discovery:xy properties are properties employed across all domains in the Discovery consortium

And that’s what our OWL file looks like

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    213,3r[1]</rdfs:comment>
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    g_heraus"/>
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    project.eu/ontologies/wittgensteinsource/Ts-213_Verstehen"/>
<discovery:hasAuthor rdf:resource="http://discovery-
    project.eu/ontologies/wittgensteinsource/Wittgenstein_Ludwig"/>
…
</Bemerkung>
```

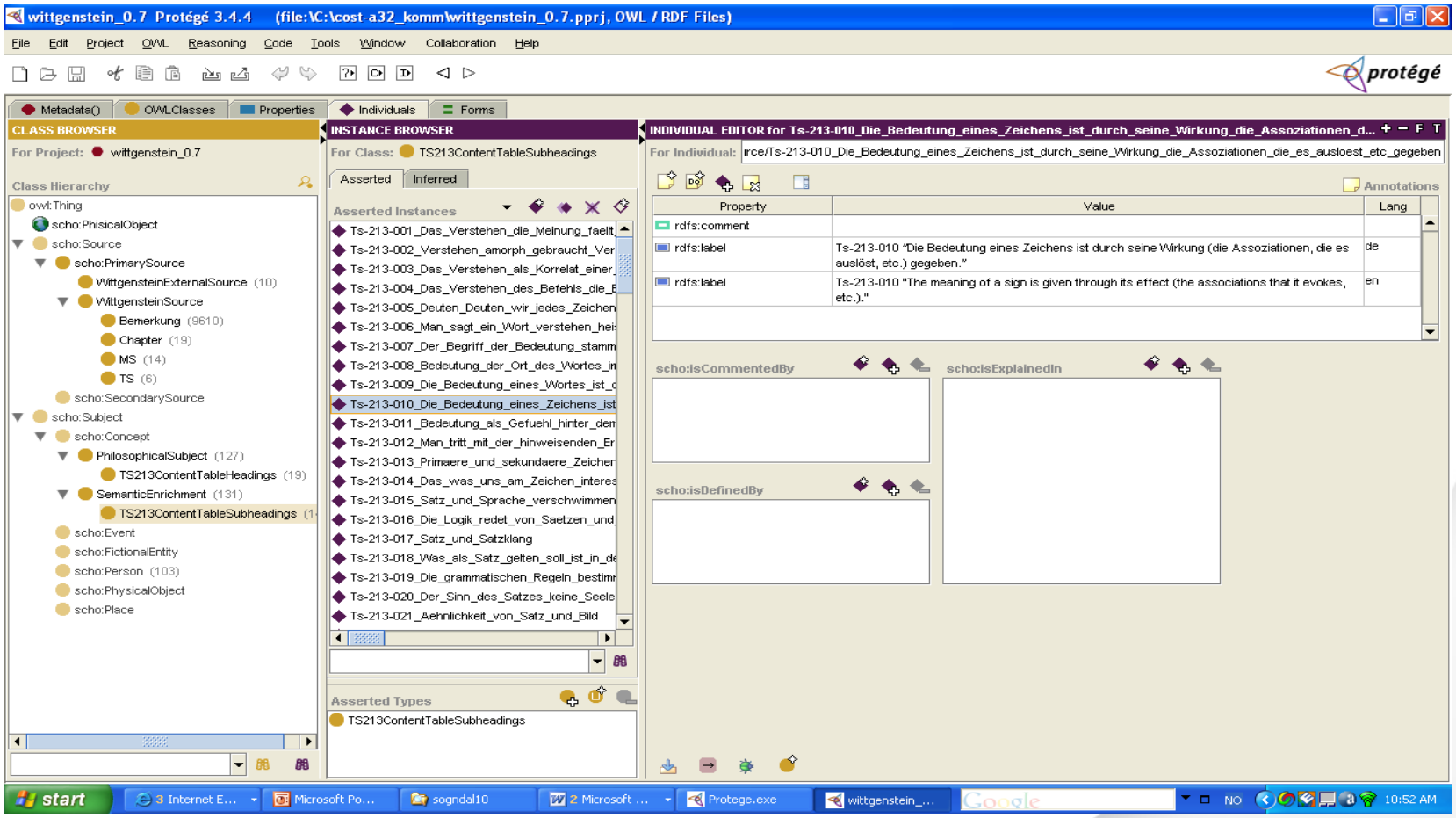
Some of our experiences with ontology work

- Positive perspectives
  - Users can enjoy content based and ”criss-crossed” searching and browsing of Wittgenstein’s works
  - Users receive a multilingual entrance key to the Wittgenstein Nachlass
  - Users receive genetic paths through the Wittgenstein Nachlass
  - Through ontologies, users can document, explicate, ”reason” and share their different (and partly competing) interpretational approaches to Wittgenstein
- Challenges
  - Software (Oxygen, Protegé, Philospace/SwickyNotes; XML, OWL, RDF)
    - Prepare all ontology data (other than Philosophical concept data, see Table on Wittgenstein Source domain), in the XML transcription and extract them from there?
    - Implement a standoff collaborative Web-based annotation tool for Philosophical concept data?
    - Implement an interactive dynamic presentation and filering tool for user defined ontology browsing?
  - Societal (e.g.: ”Any ontology for Wittgenstein is a ’Procrustes bed’“)
  - Conceptual and methodological

Conceptual and methodological challenges

- We have to do with a highly dynamic domain:
  - In Wittgenstein, concepts and their relations are constantly discussed and developed further
  - In Wittgenstein scholarship, understandings of Wittgenstein's concepts and their relationships can differ widely and even contradict each other
- We have to do with a wide range of different relation types, i.a.:
  - Hyponymy: Set-Element (Game-Chess)
  - Meronymy: Whole-Part (Syllogism-Premiss)
  - Antonymy & Complementarity (Realism-Antirealism, Knowing-Doubting, Inner-Outer …)
- Bottom-up or Top-down approach?
- Hierarchical organization?
- Inheritance of properties?

Protegé


wittgenstein_0.7 Protégé 3.4.4 (file:\C:\cost-a32_komm\wittgenstein_0.7.pprj, OWL / RDF Files)
File Edit Project OWL Reasoning Code Tools Window Collaboration Help
protégé
Metadata() OWLClasses Properties Individuals Forms
CLASS BROWSER
For Project: wittgenstein_0.7
Class Hierarchy
owl:Thing
scho:PhisicalObject
scho:Source
scho:PrimarySource
WittgensteinExternalSource (10)
WittgensteinSource
Bemerkung (9610)
Chapter (19)
MS (14)
TS (6)
scho:SecondarySource
scho:Subject
scho:Concept
PhilosophicalSubject (127)
TS213ContentTableHeadings (19)
SemanticEnrichment (131)
TS213ContentTableSubheadings
scho:Event
scho:FictionalEntity
scho:Person (103)
scho:PhysicalObject
scho:Place
INSTANCE BROWSER
For Class: TS213ContentTableSubheadings
Asserted Inferred
Asserted Instances
Ts-213-001_Das_Verstehen_die_Meinung_faellt
Ts-213-002_Verstehen_amorph_gebraucht_Ver
Ts-213-003_Das_Verstehen_als_Korrelat_einer_
Ts-213-004_Das_Verstehen_des_Befehls_die_E
Ts-213-005_Deuten_Deuten_wir_jedes_Zeichen
Ts-213-006_Man_sagt_ein_Wort_verstehen_hei
Ts-213-007_Der_Begriff_der_Bedeutung_stamm
Ts-213-008_Bedeutung_der_Ort_des_Wortes_in
Ts-213-009_Die_Bedeutung_eines_Wortes_ist_d
Ts-213-010_Die_Bedeutung_eines_Zeichens_ist
Ts-213-011_Bedeutung_als_Gefuehl_hinter_dem
Ts-213-012_Man_tritt_mit_der_hinweisenden_Er
Ts-213-013_Primaere_und_sekundaere_Zeichen
Ts-213-014_Das_was_uns_am_Zeichen_interes
Ts-213-015_Satz_und_Sprache_verschwimmen
Ts-213-016_Die_Logik_redet_von_Saetzen_und_
Ts-213-017_Satz_und_Satzklang
Ts-213-018_Was_als_Satz_gelten_soll_ist_in_de
Ts-213-019_Die_grammatischen_Regeln_bestim
Ts-213-020_Der_Sinn_des_Satzes_keine_Seele
Ts-213-021_Aehnlichkeit_von_Satz_und_Bild
Asserted Types
TS213ContentTableSubheadings
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Annotations
Property
Value
Lang
rdfs:comment
rdfs:label
Ts-213-010 "Die Bedeutung eines Zeichens ist durch seine Wirkung (die Assoziationen, die es auslöst, etc.) gegeben."
de
rdfs:label
Ts-213-010 "The meaning of a sign is given through its effect (the associations that it evokes, etc.)."
en
scho:isCommentedBy
scho:isExplainedIn
scho:isDefinedBy
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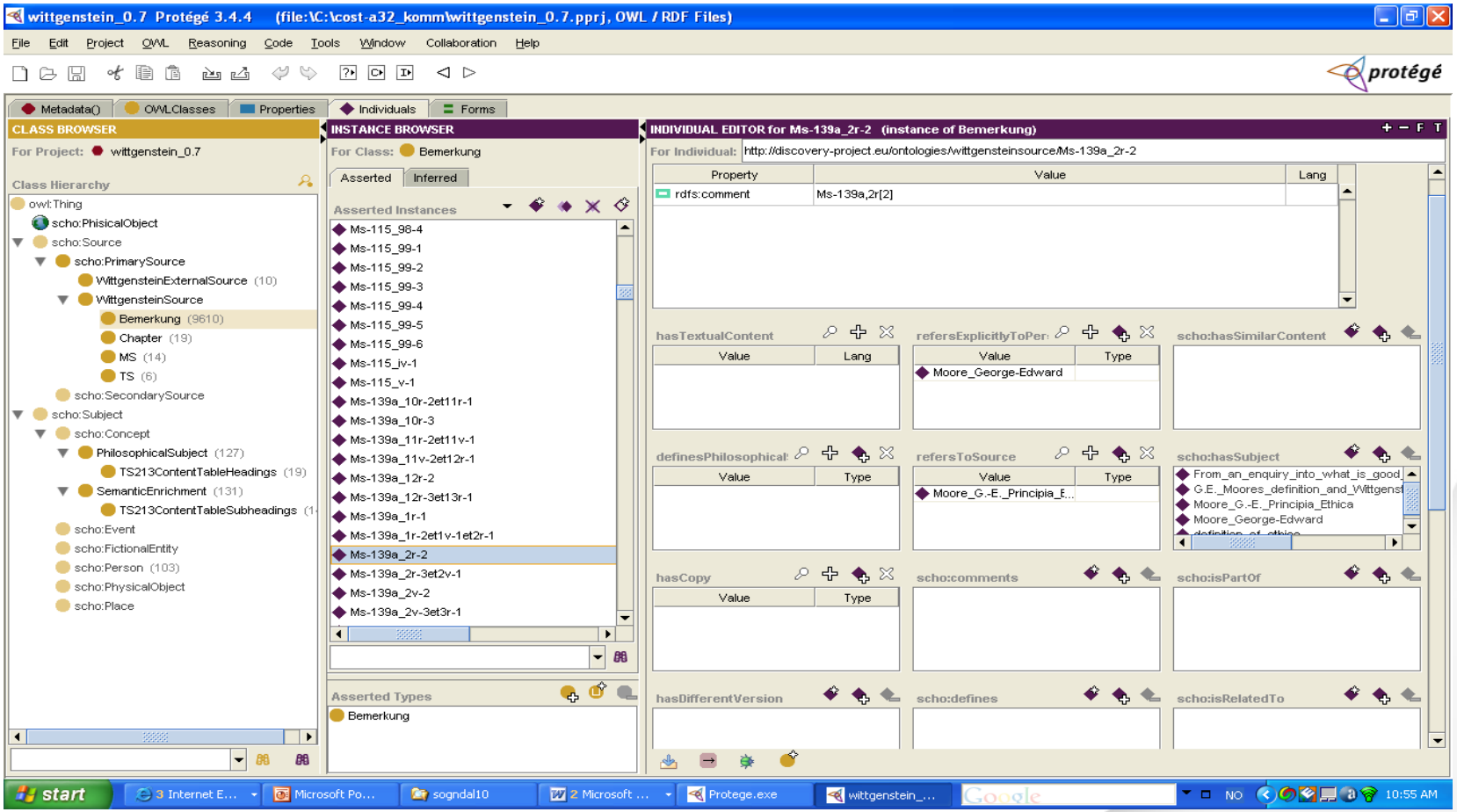
Protegé


wittgenstein_0.7 Protégé 3.4.4 (file:\C:\cost-a32_komm\wittgenstein_0.7.pprj, OWL / RDF Files)
File Edit Project OWL Reasoning Code Tools Window Collaboration Help
protégé
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scho:Event
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scho:PhysicalObject
scho:Place
INSTANCE BROWSER
For Class: Bemerkung
Asserted Inferred
Asserted Instances
Ms-115_98-4
Ms-115_99-1
Ms-115_99-2
Ms-115_99-3
Ms-115_99-4
Ms-115_99-5
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Ms-115_v-1
Ms-139a_10r-2et11r-1
Ms-139a_10r-3
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Ms-139a_12r-3et13r-1
Ms-139a_1r-1
Ms-139a_1r-2et1v-1et2r-1
Ms-139a_2r-2
Ms-139a_2r-3et2v-1
Ms-139a_2v-2
Ms-139a_2v-3et3r-1
Asserted Types
Bemerkung
INDIVIDUAL EDITOR for Ms-139a_2r-2 (instance of Bemerkung)
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Value Lang
refersExplicitlyToPer:
Value Type
Moore_George-Edward
scho:hasSimilarContent
definesPhilosophical:
Value Type
refersToSource
Value Type
Moore_G.-E._Principia_E...
scho:hasSubject
From_an_enquiry_into_what_is_good
G.E._Moores_definition_and_Wittgenst
Moore_G.-E._Principia_Ethica
Moore_George-Edward
hasCopy
Value Type
scho:comments
scho:isPartOf
hasDifferentVersion
scho:defines
scho:isRelatedTo
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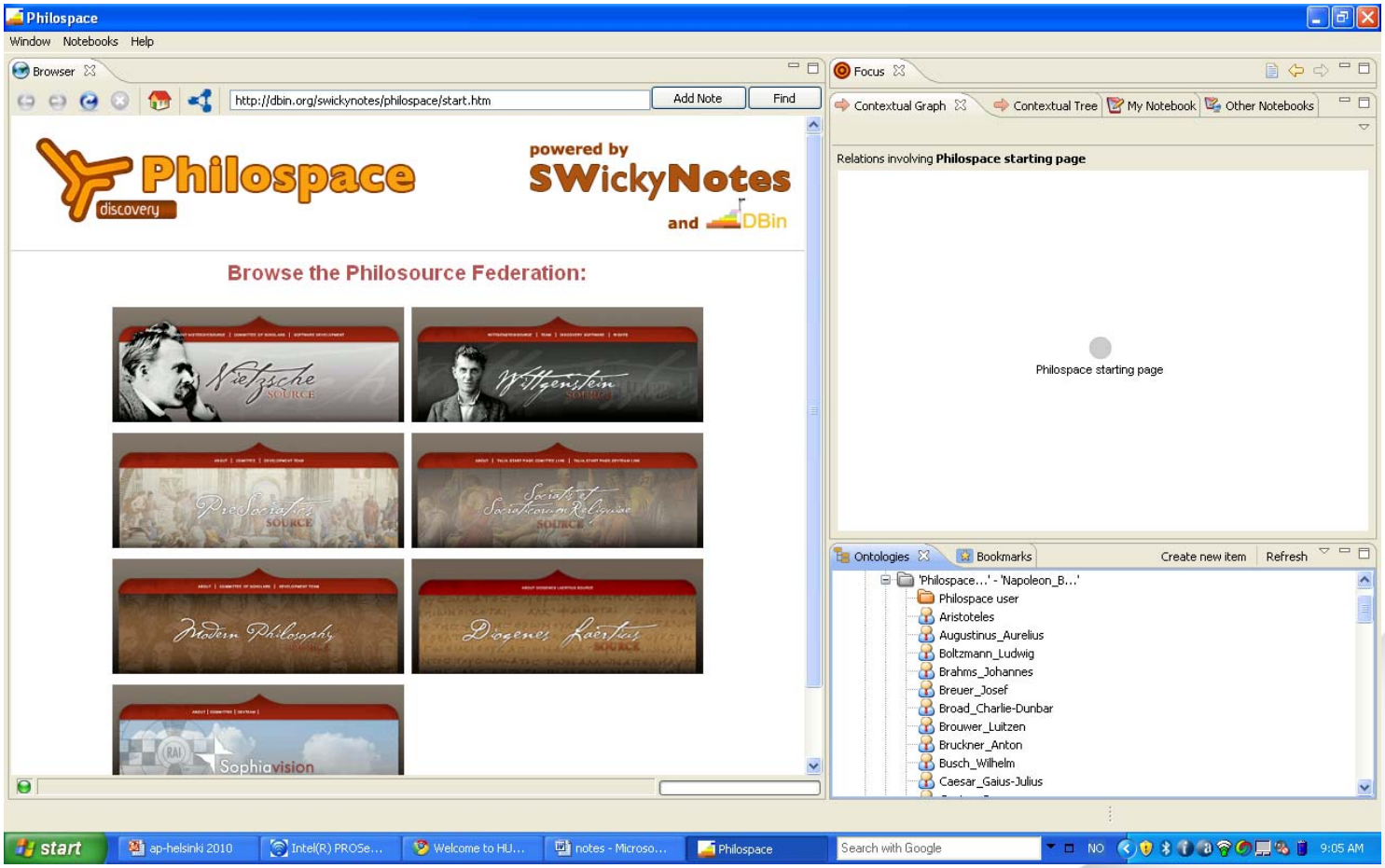
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Nietzsche SOURCE
Wittgenstein SOURCE
Modern Philosophy
Diogenes Laertius SOURCE
Sophiavision
Focus
Contextual Graph
Contextual Tree
My Notebook
Other Notebooks
Relations involving Philospace starting page
Philospace starting page
Ontologies
Bookmarks
Create new item
Refresh
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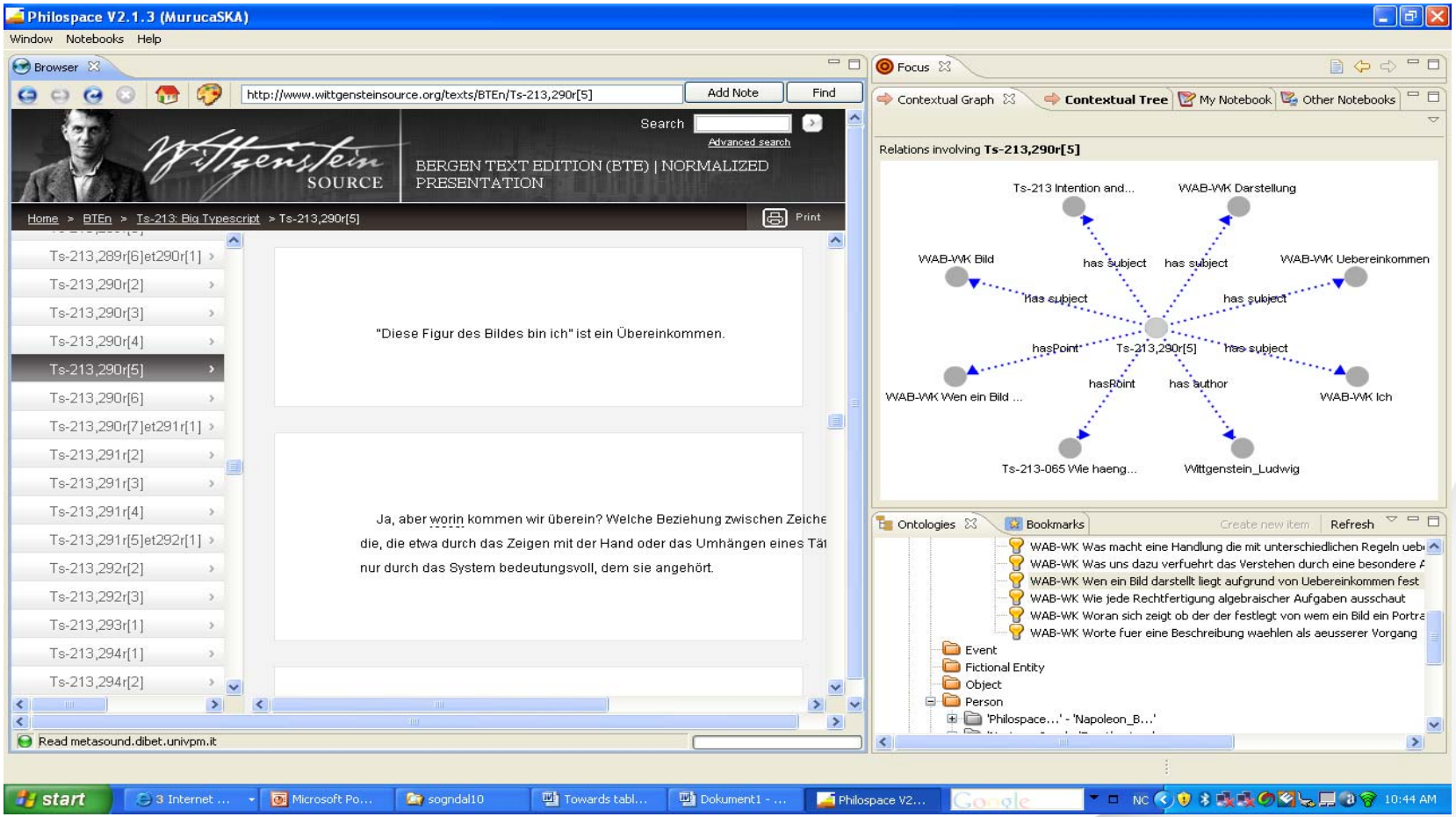
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Find
Search
Advanced search
Wittgenstein SOURCE
BERGEN TEXT EDITION (BTE) | NORMALIZED PRESENTATION
Home > BTEn > Ts-213: Big Typescript > Ts-213,290r[5]
Print
Ts-213,289r[6]et290r[1]
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Ts-213,290r[3]
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Ts-213,290r[7]et291r[1]
Ts-213,291r[2]
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Ts-213,291r[5]et292r[1]
Ts-213,292r[2]
Ts-213,292r[3]
Ts-213,293r[1]
Ts-213,294r[1]
Ts-213,294r[2]
"Diese Figur des Bildes bin ich" ist ein Übereinkommen.
Ja, aber worin kommen wir überein? Welche Beziehung zwischen Zeiche
die, die etwa durch das Zeigen mit der Hand oder das Umhängen eines Tät
nur durch das System bedeutungsvoll, dem sie angehört.
Read metasound.dibet.univpm.it
Focus
Contextual Graph
Contextual Tree
My Notebook
Other Notebooks
Relations involving Ts-213,290r[5]
Ts-213 Intention and...
WAB-WK Darstellung
WAB-WK Bild
has subject
has subject
WAB-WK Uebereinkommen
has subject
has subject
hasPoint
Ts-213,290r[5]
has subject
hasPoint
has author
WAB-WK Wen ein Bild ...
WAB-WK Ich
Ts-213-065 Wie haeng...
Wittgenstein_Ludwig
Ontologies
Bookmarks
Create new item
Refresh
WAB-WK Was macht eine Handlung die mit unterschiedlichen Regeln ueb
WAB-WK Was uns dazu verfuehrt das Verstehen durch eine besondere A
WAB-WK Wen ein Bild darstellt liegt aufgrund von Uebereinkommen fest
WAB-WK Wie jede Rechtfertigung algebraischer Aufgaben ausschaut
WAB-WK Woran sich zeigt ob der der festlegt von wem ein Bild ein Portra
WAB-WK Worte fuer eine Beschreibung waehlen als aeusserer Vorgang
Event
Fictional Entity
Object
Person
'Philospace...' - 'Napoleon_B...'
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sogndal10
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