

Digital Humanities

DIGITAL HUMANITIES FOR MEDIEVAL PHILOSOPHICAL SOURCES


8. Visualisation of digital editions

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<https://www.dhcluj.ro/dhm/>

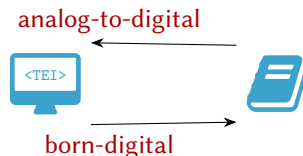
- 1 Conversion to classic format
 - 2 Interactive interfaces
 - 3 Inclusion of manuscript images
 - 4 Pitfalls of the visual
-  Homework14

Because TEI is not a visual format, the human user requires a conversion into a familiar format. By origin, the digital documents belong to 2 types:

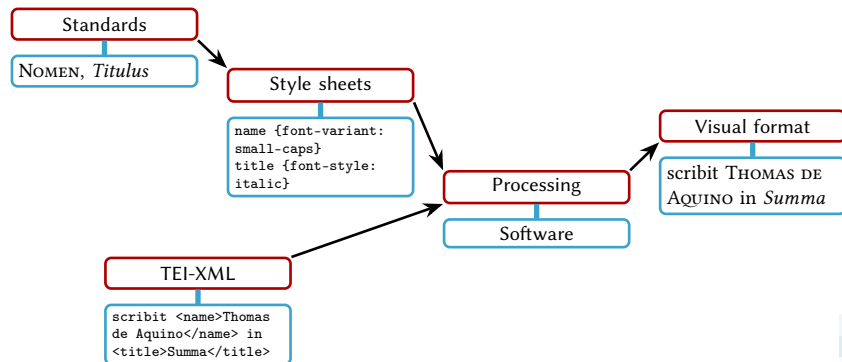
analog-to-digital editions issued initially in analog format (e.g. on paper), subsequently electronically transcribed and encoded

born-digital editions elaborated from the beginning in semantic digital format

The born-digital editions require a conversion for the human reader. The formats which are familiar to the reader include the printed formats and those on screen that emulate analog forms.



Due to the separation of layers (see *Course 2*), the process of conversion in visual format does not require the modification of the **TEI-XML** source. The conversion is done with the aid of **style sheets** written based on **standards** and which specify how each semantic element is rendered visually.



- 1 attaching a **CSS*** style sheet (Cascaded Style Sheet)
 - one specifies the formatting following **CSS** principles for **HTML** (see documentation in <http://www.w3schools.com/css/>)
 - one links the **CSS** document in the header of the **TEI** document (with the declaration `<?xml-stylesheet type="text/css" href="stylesheet" ?>`; the CSS style can be an external document "**style.css**" or an internal element "**#style**")
 - ❶ does not allow changing the order and composition of elements
- 2 attaching a **XSLT*** transformation sheet (eXtensible Stylesheet Language Transformations)
 - one specifies the transformation following **XSLT** principles for **XML** (see documentation in http://www.w3schools.com/xml/xsl_intro.asp)
 - one links the **XSLT** document in the header of the **TEI** document (with the declaration `<?xml-stylesheet type="text/xsl" href="transform.xsl" ?>`)
 - ❶ the **XSLT** language is more complicated, needs additional support
- 3 transforming in **LaTeX** or other **DTP** format
 - one transforms with **XSLT** and other scripts to the target application format
 - the resulting document is compiled/exported in a common format (e.g.

- Specifies the style for each XML element in the format:

```
tag {parameter: value; parameter: value}
```

- Common CSS parameters

```
font-family: "Times New Roman", Arial, serif, sans-serif ...  
font-size: 10pt, 12px ...; font-weight: bold, normal;  
font-style: italic, normal; font-variant: small-caps, normal;  
text-align: center, left, right, justify;  
color: red, blue, #00FF00 ...;  
background-color: red, blue, #00FF00 ...;  
display: inline, block, none
```

CSS Example

```
head {font-family: Arial; font-size: 20px; text-align: center}  
p {font-family: Garamond; font-size: 12px; text-align: justify}  
name {font-variant: small-caps; color: red}  
title {font-style: italic; color: green}  
quote {font-style: italic; color: blue}  
pb, cb, lb {display: none}
```



the format is applied in cascade to the specified element and to its descendants (if those don't have another format). E.g.: **quote** inside **p** has still **font-size: 12px**

- the CSS language specifies the style in the format

`identifier {parameter: value}`

- the identifier can contain several elements, separated by comma:

☞ `quote, title {font-style: italic}` (quotes and titles are in italic)

- the style can be limited to the descendants of a superior element:

☞ `bibl title {font-weight: bold}` (only titles in bibliography are bold)

- the identifier can be a tag name (**tag**), an id attribute (**#id**) or a class (**.class**):

☞ `#codex1 {color: blue} .uncertain {color: gray}` (only the element with id=codex1 is blue, all elements with class=uncertain are gray)

- multiple parameters can be specified, separated by semicolon:

☞ `title {font-style: italic; color: blue}` (the title will be italic and blue)

- if the same identifier and the same parameter is present multiple times, the last one applies:

☞ `p {color:red} p {color:blue}` (the paragraph will be blue)

The display medium determines the restrictions and the possibilities for formatting.

■ in print

- requires page layout according to typographic norms
 - macro-typography: the layout of text blocks in page
 - micro-typography: at the level of letter parts and letters joining
- the resolution and graphical quality must be high
- ❗ limits: the lines and pages must be broken; the space is limited (the number of pages is finite, large empty spaces are to be avoided); the repetition of structure elements is avoided using references; the usage of colors and images is restricted


■ on screen

- requires formatting according to the display application
 - compatibility: conformation with the application standards (e.g. [HTML](#) in browser)
 - adaptability: the display devices have various dimensions and forms, the text must be correctly displayed on any hardware (🖥️📺📱📄...)
- the quantity of text and images is virtually unlimited; interactivity
- ❗ limits: some functions and elements are not available on all systems; the rendering quality varies depending on terminal; the file size must be optimized; standards frequently change, sometimes breaking compatibility

MELLE · AnselmPfalz · SLDC · P mode | formatize & spellcheck remove from DB | stats | pdf | TEI | search | tree

ANONYMUS (PSEUDO PETRUS DE ALVERNIA) — *Super Librum de causis*

Super Librum de causis (reportatio Parisiensis Godefridi de Fontibus)



Super Librum de causis

{ Prooemium }

{ Questio 1 }

1911 [P1 886A](#) | [P2 172b](#) Secundum [Aristotelem](#) VI *Metaphysica*, eadem est scientia que considerat de primis causis et de ente in communi. Nam quando aliquid dicitur de uno per prius et de aliis per posterius, eiusdem scientie est considerare de illo in communi et de illo de quo per prius dicitur. Illius enim ratio est prima ratio illius nominis et per habitudinem ad illud omnia alia habent rationem et cognitionem. [edit](#) [search](#)

1912 Praeterea, ad eandem scientiam pertinet considerare de causis alicuius entis et de illo ente, cum scire sit per causas. Nunc autem prime causae sunt causae entis universaliter, hoc est entis in quocumque genere. Sunt enim in unoquoque genere aliqua causata. [edit](#) [search](#)

1913 Cum enim cognitio effectus sit ex cognitione causae, imperfectio in cognitione causae imperfectiorem causat in cognitione effectus. Unde si cognitio entis secundum quod ens ducit in cognitionem primi entis, si non cognoscitur primum ens perfecte, secundum quod cognoscitur est a nobis, tunc cognitio entis non esset perfecta. Unde ista non possunt separari: cognitio entis secundum quod ens et cognitio primi entis. Nam non potest cognosci ens secundum quod ens alioquin cognitio primi entis, nec e converso. Unde nulla scientia, si sit bene tradita, potest considerari de Deo secundum se, quam etiam considerat de ente secundum quod ens, nec e converso. [edit](#) [search](#)

1914 Ergo eadem debet esse scientia de ente in communi et de causis primi entis universaliter. Est ergo scientia de primis causis per effectus sensibiles et de ipsis manifestos. Sed, si huiusmodi scientia artificialiter tradita sit, debet esse simul et de ente in communi, et e converso. In scientia tamen *Libri de causis* subiectum sunt prime causae absque hoc quod in ea determinetur de ente in communi, sicut in metaphysica. Dicuntur autem causae prime pluraliter, licet sit omnium una simpliciter prima, quia quaelibet causarum primumum prima est in suo genere. [edit](#) [search](#)

{ Propositio 1 }

{ Questio 2 }

1915 [Aristoteles](#) naturalis enim non influendo aliquid alicui commoverat. [edit](#) [search](#)

Anonymus

Super Librum de causis

Abbreviatio Godefridi de Fontibus

{ Prooemium }

{ Questio 1 }

P1 308b
P2 172vb

Secundum ARISTOTELEM VI *Metaphysica*, eadem est scientia que considerat de primis causis et de ente in communi. Nam quando aliquid dicitur de uno per prius et de aliis alio per posterius, eiusdem scientie est considerare de illo in communi et de illo de quo per prius dicitur. Illius enim ratio est prima ratio illius nominis et per habitudinem ad illud omnia alia habent rationem et cognitionem. Preterea, ad eandem scientiam pertinet considerare de causis alicuius entis et de illo ente, cum scire sit per causas; nunc autem prime causae sunt causae entis universaliter hoc est entis in quocumque genere. Sunt enim in unoquoque genere aliqua causata.

Cum enim cognitio effectus sit ex cognitione causae, imperfectio in cognitione causae imperfectiorem causat in cognitione effectus. Unde si cognitio entis secundum quod ens ducit in cognitionem primi entis, si non cognoscitur primum ens perfecte, secundum quod cognoscitur est a nobis, tunc cognitio entis non esset perfecta. Unde ista non possunt separari: cognitio entis secundum quod ens et cognitio primi entis. Nam non potest cognosci ens secundum quod ens et de alio alio] de alio P2 || alius add in marg. P1 || 8 ad illud] an. P2 || 9 ad] aliud P1 || 10 scire] an. P2

4 eadem ... communi] ARISTOTELES, *Metaphysica*, VI, 1, 1026a29-32. Cf. THOMAS DE AQUINO, *In duodecim libros Metaphysicorum expositio*, lib. 6, l. 1 n. 27. || 5 de uno ... posterius] ARISTOTELES, *Metaphysica*, IV, 2, 1005a33-1005b19; idem, *Categoriae*, 12, 14a26-14b8; idem, *Analysia prima*, 1, 30a13-34. Cf. THOMAS DE AQUINO, *Quaestiones disputatae de veritate*, q. 7, a. 5, arg. 5. || 10 scire ... causas] ARISTOTELES, *Analysia posteriora*, 1, 2, 75a35.

Accessing the text through a computer allows the user to interact with the semantic, textual and multimedia elements.

■ selective display

- due to the large quantity and diversity of information which TEI may contain, the elements displayed on screen at a certain moment must be limited for readability
- depending on usage patterns, certain element types may be hidden (and accessible through additional interactions) (e.g. the images of manuscripts attached to a text or its textual variants may be viewed only after pressing a button)

■ filtering and extraction

- the content can be filtered by certain parameters, parts of document can be extracted according to the user's intention
- there can be semantic filters (selecting contents by their semantic) (e.g. generating a list of titles) or text filters (e.g. free text search) or mixed filters (e.g. text search in author names)

■ processing and computation

- operations executed by the computer in text, according to user's demand (e.g. statistic of citations, comparison with other text, language analysis)

The attribute `facs=""` can be attached to many TEI elements and specifies the link to an image which corresponds to the element. The link may be done in 2 modes:

- **file**: an image file is directly specified (jpg, png, tiff, gif...)

```
<locus facs="photo0801.jpg"/>
```

- **unique facsimile identifier**: a unique `xml:id` identifier is specified, which is declared in a `<facsimile>` element

```
<facsimile xml:id="img2"><graphic url="photo0802.jpg"/></facsimile>  
<p facs="#img2">Omnes homines natura scire desiderant.</p>
```

- the **facsimile** element allows a more precise control of the image by specifying multiple images, surfaces and zones

```
<facsimile xml:id="facs1">  
  <surface xml:id="sf1">  
    <zone xml:id="zone1" ulx="10" uly="10" lrx="210" lry="297">  
      <graphic url="photo01.jpg"/>  
    </zone>  
  </surface>  
  <surface xml:id="sf2"><graphic url="page02a.jpg"/>  
    <graphic url="page02b.jpg"/></surface>  
</facsimile>
```

- **IIIF** (International Image Interoperability Framework) is an increasingly common standard for publishing, transmitting and reuse of manuscript images (and not only) with metadata

 <http://iiif.io/>

IIIF uses the **JSON** file format (JavaScript Object Notation)

Sites that use **IIIF**: British Library, Bibliothèque nationale de France, Bibliotheca Apostolica Vaticana, Virtual Manuscript Library of Switzerland, IRHT (CNRS), Bayerische Staatsbibliothek etc. (over 70 institutions)

- **TEI** can also be used for publishing facsimiles with metadata
Sites that use **TEI** for facsimiles: Manuscriptorium, Oxford Bodleian Library etc.

- The mode of displaying the elements induces a pre-interpretation of contents
 - ☞ the elements displayed larger, more colored or more upwards look more important
- The selection of elements initially displayed causes de ignorance of those displayable through complex interactions
 - ☞ the inexperienced user may believe that the edition is reduced to what is seen on the front page
- The predetermined interactions induce the feeling of exhaustive analysis
 - ☞ however complex and numerous, pre-programmed interactions do not exhaust the questions

Fictitious example of display which can mislead:

THOMAS DE NOVUM EBORACUM, *Quest for Love**

Utrum haec **passio** quae est **amor** sui, sit causa omnis peccati. [...] Ad primum ergo dicendum quod **amor** sui ordinatus est debitus et **naturalis**, ita scilicet quod velit sibi **bonum** quod congruit. Sed [...]

Thomas Aquinas, Summa theologiae, I^a II^{ae}, q. 77, a. 4

Search for source authors: **10** authors found!

Aristoteles, Aristoteles, Aristoteles, Augustinus, Aristoteles, Augustinus, Biblia, Aristoteles, Biblia, Augustinus

** Application developed by Thomas of New York in 2016. It searches random internet sources.*



Operate at least 5 visible and valid changes in the following style sheet:

CSS style sheet

```
titleStmt title, titleStmt author, publicationStmt distributor {
  display: block;
  text-align: center;
  font-weight: bold;
}
p {
  display: block;
  text-align: justify;
  text-indent: 40px;
}
title {
  font-style: italic;
}
name, author {
  font-variant: small-caps;
}
```