Trees of Texts

Models and methods for an updated theory of medieval text stemmatology

Tara L Andrews (@tla) | Caroline Macé | DH2012, Hamburg
Stemmatology

The discipline of deducing the copying order of texts
Stemmatology

The discipline of deducing the copying order of texts

- The “method of Lachmann”
Stemmatology

The discipline of deducing the copying order of texts

- The “method of Lachmann”
- Neo-Lachmannism
Stemmatology

The discipline of deducing the copying order of texts

- The “method of Lachmann”
- Neo-Lachmannism
- Phylogenetic methods
The problem

Too much *a priori* judgment, or no judgment at all?
The problem

Too much *a priori* judgment, or no judgment at all?

- Can we identify “significant error”?
The problem

Too much *a priori* judgment, or no judgment at all?

- Can we identify “significant error”?
- Should we?
The problem

Too much *a priori* judgment, or no judgment at all?

- Can we identify “significant error”?  
- Should we?  
- How do we test our hypotheses?
An empirical model for text variation
An empirical model for text variation

• Need to model the variation of readings within the text
• Need to model the “family tree” of witnesses to a text
• Need to find a method to cross-correlate these models
Modeling text variation

The variant graph
### An alignment table

<table>
<thead>
<tr>
<th>Va6</th>
<th>Apostolus</th>
<th>insignes</th>
<th>quae</th>
<th>pertinent</th>
<th>ad</th>
<th>deum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vb11</td>
<td>Apostolus</td>
<td>insignes</td>
<td>quae</td>
<td>ad</td>
<td>deum</td>
<td>pertinent</td>
</tr>
<tr>
<td>Vb12</td>
<td>Apostolus</td>
<td>insignis</td>
<td>quae</td>
<td>pertinent</td>
<td>ad</td>
<td>deum</td>
</tr>
<tr>
<td>Vb18</td>
<td>Apostolus</td>
<td>insignes</td>
<td>in</td>
<td>his</td>
<td>qui</td>
<td>pertinent</td>
</tr>
<tr>
<td>Vb20</td>
<td>Apostolus</td>
<td>insignes</td>
<td>quae</td>
<td>pertinent</td>
<td>ad</td>
<td>eos</td>
</tr>
<tr>
<td>Vb21</td>
<td>Apostolus</td>
<td>insignes</td>
<td>in</td>
<td>his</td>
<td>quae</td>
<td>pertinent</td>
</tr>
<tr>
<td>Vb9</td>
<td>Apostolus</td>
<td>insignes</td>
<td>quae</td>
<td>pertinent</td>
<td>ad</td>
<td>christum</td>
</tr>
</tbody>
</table>
## Distinct readings in the table

<table>
<thead>
<tr>
<th>Apostolus</th>
<th>insignis</th>
<th>in</th>
<th>his</th>
<th>qui</th>
<th>quae</th>
<th>pertinent</th>
<th>pertinent</th>
<th>eos</th>
<th>christum</th>
<th>deum</th>
<th>pertinent</th>
</tr>
</thead>
</table>

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Readings are nodes...
...sequences are paths.
The sequence graph
Transpositions?
One representation for transposition
Better representation for transposition
Marking relationships in the graph
The relationship graph
Text model: sequences + relationships
Tool: mapping relationships
Modeling witness relationships

The stemma graph
Modeling witness relationships

The stemma graph

- Rooted
Modeling witness relationships

The stemma graph

- Rooted
- Directed
Modeling witness relationships

The stemma graph

- Rooted
- Directed
- Acyclic
Modeling witness relationships

The stemma graph

- Rooted
- Directed
- Acyclic
- Connected
Handling witness corrections

1. Corrections from a single source
Handling witness corrections

1. Corrections from a second source
Tool: evaluating variants
A genealogical variant

Single source in the tree
All same-color nodes are connected
A coincidental variant

Multiple sources in the tree
Not all same-color nodes are connected
A reverted variant

Multiple sources in the tree
All but one source has an ancestor in the group
The payoff: gathering data

Chart 3

percent_genealogical  percent_genvariant

- Heinrichi artificial
- Julius Caesar artificial
- Notre besoin artificial
- Parzival artificial
- Legend of Bishop Henry
- Sermo Augustini 158
- Sermo Augustini 170
Coming soon

• Coincidental vs. reverted variants
Coming soon

• Coincidental vs. reverted variants

• Types of variants that tend to get reverted
Coming soon

- Coincidental vs. reverted variants
- Types of variants that tend to get reverted
- Frequency of transmission of ‘unimportant’ variants
Coming soon

• Coincidental vs. reverted variants
• Types of variants that tend to get reverted
• Frequency of transmission of ‘unimportant’ variants
• Frequency of non-transmission of ‘important’ variants
Use the source

• Software at http://github.com/tla/stemmatology

• Service (shortly open for business) at http://treeoftexts.arts.kuleuven.be/stemmaweb

• Microservice interfaces available for interoperability with other tools