

# Learned Love

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Colour plates

# Mesotext. Framing and exploring annotations

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## Introduction

Annotation is an important item on the wish list for digital scholarly tools. It is one of John Unsworth's primitives of scholarship (Unsworth 2000). Especially in linguistics, a number of tools have been developed that facilitate the creation of annotations to source material (Bird and Liberman 1999; Carletta et al. 2003). In edition studies, Peter Robinson expressed the need for it to be included in the future digital edition (Robinson 2003). At Brown University's Virtual Humanities Lab work on annotation facilities for its Boccaccio editions is in progress (Zafrin and Armstrong 2005). Wittgenstein students are working on the integration of annotation into a digital edition (Hrachovec and Köhler 2002). The present author has worked on the annotation tool EDITOR (Boot 2005).

When we set out on what was to become the Emblem Project Utrecht, Els Stronks and I wrote a paper on the kinds of analysis we wanted to be possible on our emblem collections (Boot and Stronks 2002). Subsequently, we have researched Petrarchist imagery in Heinsius (in collaboration with Jan de Boer), and rhetorical elements in Jacob Cats (Boot and Stronks 2003), and Els Stronks has analysed the presence of churches in our material (cf. her paper in these proceedings). The ultimate justification for digitisation efforts is not, I still believe, mere electronic availability of the texts, however important that is. The wider issue is to make the content of the works available as potential nodes in a larger digital network that will include not just the sources but also the tools, the output and the intermediate products of scholarship.

Willard McCarty notes that annotation and the commentary have much in common (McCarty 2005, 93). Annotations are the 'morsels' a commentary may bring together, the commentary consists of morsels that might live as individual annotations. Annotation, however, is a much wider phenomenon than that which would fit in a commentary. Annotation is not about the clarification of obscure passages or perhaps commentary to larger text units alone, though that too, but really about anything that can be said with regard to a text: categorisation, illustration, hyperlinking, modelling, etc. This essay explores the concept of annotation, and more specifically it explores what annotations can do. The word I will use for a body of annotations is *mesotext*. 'Mesotext' because it is text that can be located somewhere in between the primary texts of scholarship (the sources that scholarship is based on), and its secondary texts, the books and articles that it produces. Mesotext is metatext, in the sense of Gérard Genette, it is text that talks about another text. But unlike the ordinary secondary scholarly text, mesotext in a sense is data. It has no explicit point of view, there is no thesis that it explicitly argues for – though it may be used to argue for one, clearly. As the word mesotext indicates,

mesotext is framed by other texts: the texts it is about, the texts it supports, and, as we will see, the models that instruct it. The concept of mesotext may help allay fears that the fragmented nature of the web will strip scholarship (and perhaps life) of some of its coherence and thus of meaning.

## **Mesotext**

The basic ideas of mesotext may be formulated as follows: (1) the business of (our area of) scholarship is the creation of theories about or on the basis of texts; (2) to a large extent, scholarship consists of taking notes; (3) notes refer to texts or fragments of texts; (4) the notes consist of statements that apply theoretical notions to these texts or text fragments; (5) these notes can provide the micro-arguments that validate the theoretical notions and their application; (6) in the digital era, if properly realised, the notes define a hypertext structure that seamlessly connects the primary texts, the notes themselves, the concepts that they instantiate, and the secondary texts that explain these concepts to the public.

We can conceive of mesotext in a number of different ways. We can view mesotext as primarily a reaction to a primary work. John Bradley's Pliny annotation tool sets out to do just that: 'the addition of annotations or the creation of notes to record one's initial reactions to what one has read' – though it also does considerably more (Bradley 2006). The annotations that I am interested in are created in the process of studying the work. We can also move our attention away from the primary text and view mesotext as a body of supporting evidence for a scholarly argument. And lastly, we can try to bracket out both primary text and secondary text and look at mesotext as merely a collection of data, or observations.

From the first perspective, mesotext consists of notes, scribblings, lists and tables that are created in coming to grips with the sources that are the subject of scholarship. When the writing is done, the mesotext tends to be discarded. If considered at all, it is seen as preliminary, unripe, chaotic material. What I am arguing, however, is that in a digital context mesotext can enrich scholarship. Mesotext contains the statements that support a scholarly article's argument – it is the material that underpins our secondary texts. The underpinning consists of, to some extent at least, observations on the primary text(s). In a digital environment, the mesotext can be made accessible from and provide an entrance into the primary text that it is about, as well as the secondary text it supports.

Mesotext is not limited to running text. As mentioned before, it can contain lists and tables. It may also contain categorizations and hyperlinks. Moreover, it need not even be just text (depending on how wide our concept of text is). It may include statistical computations, diagrams, graphs, even pictures. It may also consist of word processor documents, spreadsheets, databases, or output of annotation programmes.

Mesotext is nothing new. The creation of notes to text has been a scholarly practice since time immemorial. There have been periods when nearly all schol-

arship consisted in note-taking and -making, in the creation of brief glosses or longer commentaries on ancient or sacred texts. In modern editorial practice, annotation and commentary are still valuable end products of scholarly activities. In other branches of scholarship, however, annotation has been relegated to a subordinate, preliminary status. Scholars write notes in order to write articles; the notes are thrown away when the article has been completed.

In our second perspective, the view from the scholarly text, the notes are not necessarily thrown away. At least not all of them. Rather, they should be systematised and made to conform to the theoretic notions that have grown out of reading and studying the primary text, and that inform the secondary text. Inevitably, this will prompt further revisions of these notions, as any new contact with a primary text is bound to do. In addition, revised theoretical notions may prompt new rounds of systematisation of the notes. If we are fortunate, and if we have limited our subject wisely, these repeated revisions will end in a body of notes that provides the supporting argument for the scholarly text and details the application of the theoretical notions to the primary text. Following e.g. Leggett and Shipman (2004), I will call the scholarly text, as opposed to the underlying data, the 'narrative'. The narrative explains and contextualises the data.

By 'theoretical notions' I do not necessarily mean anything very grand or abstract, such as Marxism or deconstruction. However, a note about a fragment of a primary work is never just a statement of fact. It is a statement that applies an idea, an aspect of a model, to that work. The note validates the model, extends its scope, or perhaps refutes it.

A successful model in humanities computing should, according to McCarty, be computationally tractable, i.e. be explicit and consistent, and it should be manipulable (McCarty 2005, 25). A model that is explicit in the aspects, or fields, or variables, or categories that it describes, thereby structures the observations that result from its application. That structure defines filtering and navigation facilities on these observations. For example: if a model for narrative characters includes sex and age, and explicitly describes these traits, one can list the characters or their actions by sex and age and maybe even cross-tabulate behavioural aspects against these parameters.

From our third perspective, we can look at mesotext as being just data – not in the sense of being merely an unorganised collection of crude facts, but rather as a collection of observations, that may be more or less interpretive, but is not embedded within a narrative that organises the observations. Outside of the emblem or humanities realm, an atlas may be a good example of what I mean: it is purely factual, nevertheless its maps are organised according to a model. Its facts are not there however to support a specific argument. In this context, I will also speak of mesodata. Mesotext is mesodata, seen through a model. Mesodata is made accessible by the existence of the model.

In emblem studies, what comes to mind when thinking of a collection of observations is the emblem index, and we may want to think in this light about the Henkel and Schöne *Handbuch zur Sinnbildkunst* (Henkel and Schöne 1976). Emblem scholars know this book indexes emblems by their main iconographical motif and provides, for each of the indexed emblems, a very condensed description of the meaning. It contains a number of supplementary indices, by motto and by meaning. If only in dimension, it is a monumental feat of scholarship in itself. But it is also a text that provides underlying argumentation for many actual and potential emblem studies.

Let us imagine for a moment that a far-sighted publisher would create a digitised, searchable version of the *Handbuch*. Furthermore, imagine that a publisher or learned society or anyone else should decide to create an online emblem journal. Then, try to envisage that with each mentioning of an iconographical motif in this journal, there would be a popup menu, and one item on this menu would be 'look up in digitised Henkel and Schöne'. And let us imagine one more thing: that the emblems in the digitised *Handbuch* should be hyperlinked to their display on one or more of our digital emblem sites; and lastly, that the digitised *Handbuch* should create a reverse link to the places where it is linked from, and thus probably to where it is referred to or quoted. There is nothing very revolutionary or even difficult or sophisticated about these imaginings.

What we would have then would be a perfect, if straightforward, example of mesotext. A large amount of raw (meso-)data, helpful in exploring the primary works that have been indexed; accessible from the scholarship that is partially based upon the data; helpful in investigating the claims that the scholarship makes; referring back to the scholarship that quotes it. The index of the *Handbuch* would in this case provide the model of the visual world that the observations are based on. The reason why I call this hypothetical example of mesotext straightforward, is that such an index is not a very sophisticated model.

In fact, this is not that far from reality. Hans Brandhorst and his Mnemosyne are working on a cumulative Iconclass index on the emblems Utrecht, Wolfenbüttel and Glasgow (Brandhorst 2004). Researchers will be able to link to that index, to find emblems by iconographical motif, and the index will refer visitors to the site that displays them.

Now I am not going to suggest the Henkel and Schöne *Handbuch* or the Mnemosyne Image Index are the kinds of works that come into existence as the by-product of an article, saving scrap paper from the waste bucket. However, I do believe the *Handbuch* and the scholar's notes share some important characteristics: with some degree of precision they refer to one or more primary texts, to some extent they conform to a model and they can support an argument.

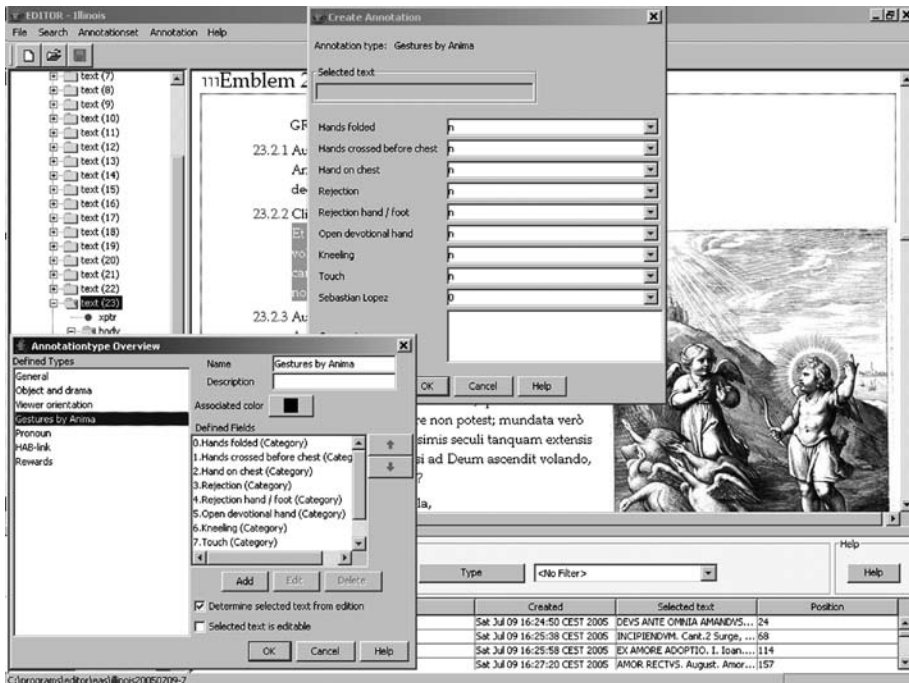


Fig. 1: EDITOR annotation creation

## Two examples

I will discuss two examples that can illustrate what mesotext may look like. The first example comes from the EDITOR annotation toolset that we are working on at the Huygens Institute (Boot 2005, forthcoming-a). It should be possible to feed back the annotations created with EDITOR into a digital edition. I have been working recently on what I have named SANE, for Scholarly Annotation Exchange, which is a protocol and software for exchanging annotation information between annotation tools and annotation clients – a digital edition might be such a client (Boot forthcoming-b). Figure 1 shows the annotation creation tool. It displays the text to be annotated, in this case *Amoris divini emblemata* from the EPU collection; a hierarchical view of the underlying XML file (on the left); the defined annotation types (bottom left; I created these annotation types to investigate aspects of theatricality in this book; the types can consist of multiple fields – memo fields, categorisation fields, hyperlinks, etc.); a window that results from selecting a text fragment or node for annotation, where the researcher can fill in the values for the fields defined for that type; and finally an overview of the created annotations (bottom), that can be used for sorting, filtering and for accessing the annotated locations in the book.

Using the SANE prototype, a digital edition can request EDITOR-created annotation information from an annotation server. The edition might display avail-

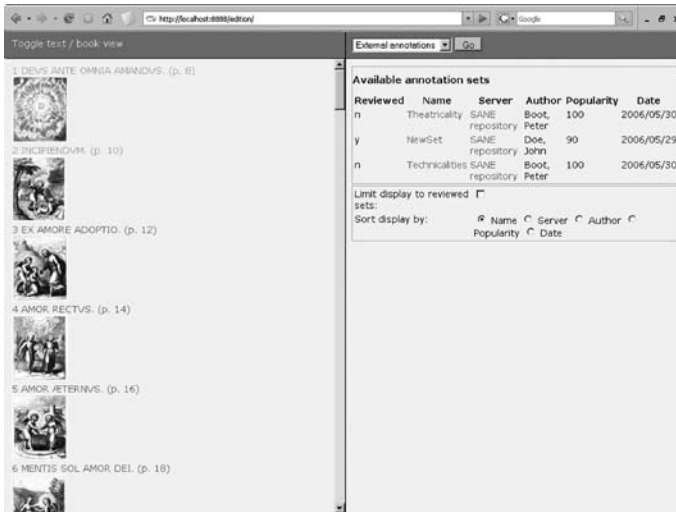


Fig. 2: Display of available annotation sets in the edition

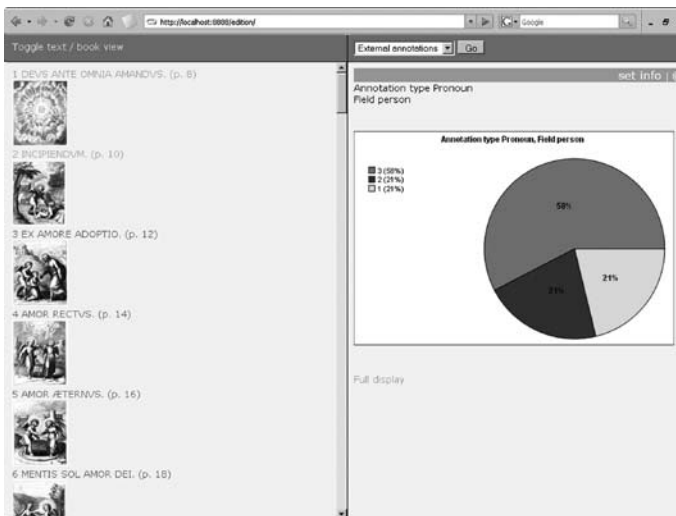


Fig. 3: Display of the value distribution of an annotation field using SANE

able annotation sets, as in Fig. 2. The user could select an annotation set and for instance ask for a pie chart with distribution information on a specific field (Figure 3). Selecting a specific value (in this case, third person pronouns) would lead to a display of the annotated fragments (Figure 4). The user could then ask for the full annotation information (Figure 5).

However, this should be only the first half of the story. The figure displays an annotation that says 'hem' is a third-person personal pronoun. It is an annotation



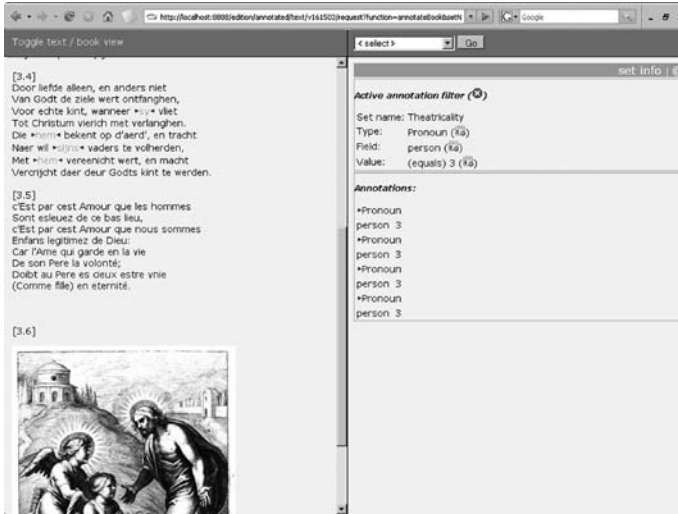


Fig. 4: Display of annotated fragments and annotations

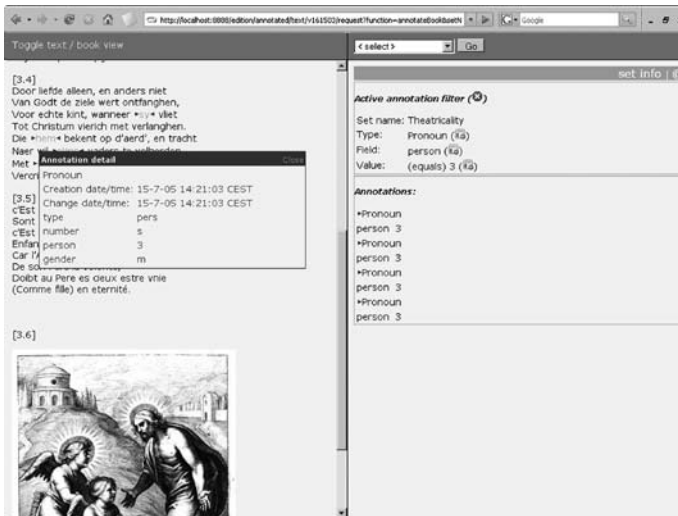


Fig. 5: Display of a single annotation

that by it self is really not that interesting. It is only interesting as part of a larger group of annotations, being used to make a point, for instance about the nature of the speaking persona in this book. The second half of the story would be a way to point to groups of annotations from the secondary literature that discusses them. We should be able to include in our articles something like the pie chart shown in Fig. 3, and that pie chart should be 'live'. Just as in the edition, its slices should be hyperlinked to a display of the annotations represented by that slice.

What is remarkable about this example are three issues: (1) the annotations must refer to precise locations in the primary text in order for this to work properly; (2) the secondary text must refer to the annotations, and to specific annotation displays; and (3) the high-level annotation displays – the diagrams, but also any view filtered by for example an annotation type – depend on the presence of a level of metadata. The annotation types, with their constituent fields and values, provide the structure that makes the annotations amenable to filtering and more generally manipulable. The annotations types, as suggested earlier, form a model of the phenomenon being studied, and the annotations provide an application of that model to the work being investigated.

The notion that the annotation types provide a model that structures annotations is attractive, because of McCarty’s claim that modelling is really the proper business of humanities computing. Annotations then are not something marginal; they have their place at the centre of what computers can do for the humanities.

Though model-making is implicit in much of humanities scholarship – indeed, as McCarty notes, any well-articulated idea would qualify as a model of its subject – what humanities computing adds is, as we have seen, the demands for computational tractability and manipulability. That implies the need for formal definition of the models. The quality, subtlety and richness of the model are of course largely functions of the insight that the researcher has into the phenomena and works that he or she studies. But the potential expressiveness is determined by the metamodel: the abstract types of data and relations that our modelling language allows us to express. The second example of ‘annotations in action’ that I will discuss is based on a richer metamodel than EDITOR’s annotation types have to offer. It is taken from an index of metaphor in *Amoris divini emblemata* that I am working on.

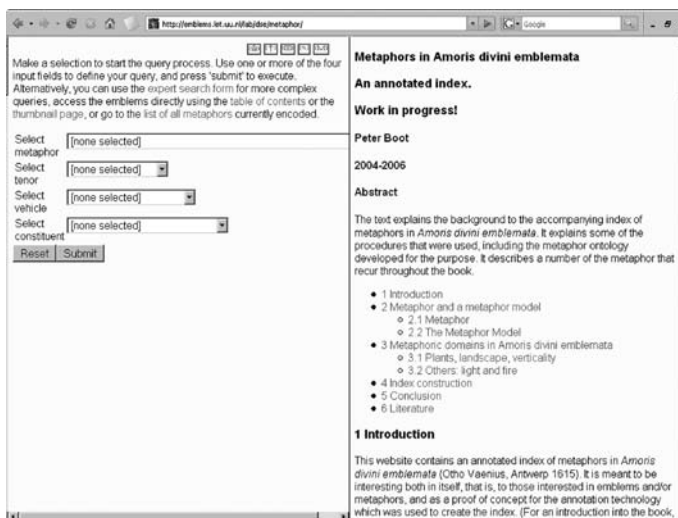


Fig. 6: Metaphor index: narrative and search interface

In EDITOR, the annotation types are essentially individual, unrelated classes of things. There is no notion of subclasses, and no way to create relations between classes. There is no natural way to express relational observations like ‘divine love is pointing the soul towards heaven’, or indeed, more to the point for a metaphor index, that a text fragment ‘sol’, the sun, serves as the vehicle in a metaphor of which divine love is the tenor. Or to express the fact that hills and church spires and trees have something in common – they point upward. These richer models can be defined using the Web Ontology Language OWL (Boot 2006). To some extent the boundaries between annotation, primary and secondary text will be harder to draw than in the previous example.

The metaphor index opens with a view of an article-like text, a narrative, (including things like abstract and bibliography), at the right hand side of the screen, and a search interface into the annotations about metaphor on the left (Fig. 6). The user can choose to open a table of contents on the left. The article text contains hyperlinks, and these links are either towards search queries on the annotations, towards emblems or to elements of the ontology that underlies the metaphor descriptions detailed in the annotations. Clicking a search for plant life on the right will bring up a list of hits on the left (Fig. 7), and clicking on a hit will display the relevant emblem with the particular sample of plant life highlighted (Figure 8). The left hand frame will mention the other metaphors and metaphor-like structures described for this emblem, again hyperlinked to queries for that metaphor, but also provided with hyperlinks to a display of information about the relevant class in the ontology.

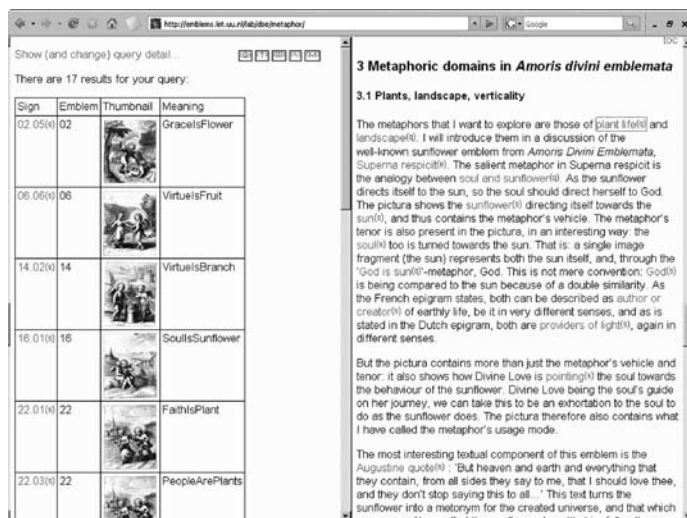


Fig. 7: Metaphor index: clicking a hyperlink executes a search for metaphors and brings up the results

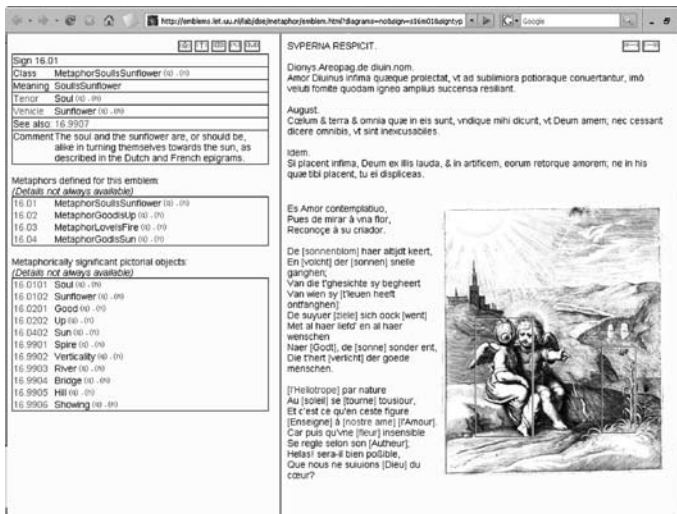


Fig. 8: Displays of an emblem with one metaphor highlighted on the right, others listed on the left

What is noticeable about this metaphor index is (1) that whereas in the annotated edition that we saw before the edition was the point of reference for the annotations – even though the annotations could be used to select which fragments of the edition to view, it was still the edition that was being studied with the help of the annotations, not the other way around – in the metaphor index the point of reference is really the narrative; and (2) that at the surface level this is really a single hypertext; from a user perspective it is hard to see where the narrative stops and the mesotext begins, or where the mesotext ends and the primary text begins. The surface hypertext however is a derivative product. It is not really authored; it is generated behind the scenes from a technical representation of the narrative, the mesotext and the primary texts.

## Roland and the need for closure

In the past, the interlinear glosses in a manuscript that translated Latin words into a vernacular equivalent developed into separate works, dictionaries, thereby creating a distance between the word and its gloss (Hüllen 1989). Today, we can restore the proximity between word and gloss by hyperlinking the dictionary and the primary text. What mesotext can do is similar: move the annotation out of the notes and appendices into a separate and structured body of observations; but thanks to the possibilities of the electronic age still readily available from both work and article.

In Figure 9 we encounter another interesting example of such of a structured body of annotations, which I will use to address the problem of closure. It is the

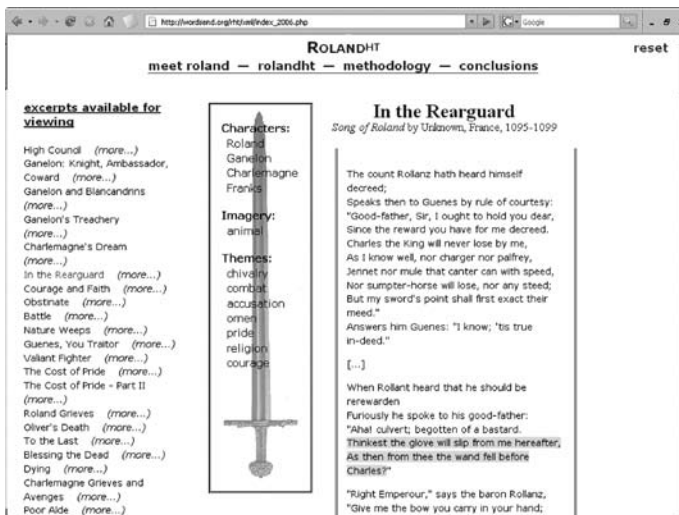


Fig. 9: RolandHT, by Vika Zafrin: scenes, annotations, highlighted text fragments

work of Vika Zafrin, and her subject is the tradition of the *Chanson de Roland*, from its earliest sources through its later incarnations, such as *Orlando Furioso* (Zafrin 2007). On the left there is a list of scenes from the Roland stories. Selecting one of the scenes takes one, on the right, to a text fragment narrating that scene from one of the text traditions. In this fragment, based on the annotations, a number of things can be highlighted: references to characters, to imagery and themes. The available ones are listed in the centre. A mouseover on one of these highlights the corresponding occurrences in the text fragment. Clicking in the list brings up, on the left of the screen, the list of scenes where that person appears or that theme occurs. In that list of course one can click and bring up that scene, and then click on a theme that appears in that scene – and so on, ad infinitum.

It is this 'ad infinitum' that may be disconcerting. Are we never done with this? Zafrin argues that the desire for closure, as it is known in hypertext studies, is unproductive 'if the goal of reading is to acquire a broad contextual sense. (...) One can merely stop at a certain point, knowing there's always more to explore' (Zafrin 2006). For Zafrin, the desire for closure is merely what she calls a 'function of our reading habits'. Against that view I would argue that whilst reading, the way we process information depends among other things on our expectations of what we are going to find. The traditions of academic writing help us orient ourselves during the reading process and in fact enable us to reach some kind of conclusion about the worth of what we are reading. Scholarship knows no closure, but individual pieces of scholarship do and should offer at least provisional closure. We need to move on, after all. We do not read our indexes, we search them once we have a reason to do so. This argues, I believe for the presence of a narrative that can

be seen not as closing, but as framing the mesotext, as providing context, orientation and motivation for exploring the mesodata. (And Zafrin will in fact incorporate a number of critical essays in *Roland*<sup>HT</sup>).

## Conclusion

From the above, a number of conditions for successful mesotext emerge. To summarize:

- (1) the primary text must be structured, so as to facilitate precise addressing of the text fragments being annotated and to facilitate grouping and aggregation of annotations based on text structure (that is, there should be a text model and not just an annotation model. This text model, which is outside of the scope of this article, will probably be based on TEI encoding);
- (2) the annotations must refer to precise locations in the primary texts;
- (3) there should be a formalized model of the domain;
- (4) the model should be a model of a single, coherent domain;
- (5) the annotations should conform to the formal model;
- (6) the annotations should have been applied consistently;
- (7) the formal model should be a partial expression of the theory that the narrative espouses;
- (8) the narrative should contain active links into the body of annotations: to individual annotations, groups of annotations, statistical computations done on annotations, charts of annotations, etc.;
- (9) systematic exploration should be possible from all sides – from the primary text, from the narrative, from the model and from the mesodata. We should be able to enter the mesotext either on the basis of the text unit of the primary text, or based on the issues dealt with in the narrative, or based on the types of annotations that have been defined, or finally by unguided browsing and searching;
- (10) a final condition for useful mesotext is that it should be open. SANE attempts to create conditions for open mesotext. The metaphor index however is at present a closed system (if it can be called a system), and so apparently is *Roland*<sup>HT</sup>.

This last condition raises difficult issues about the infrastructure of scholarly publication. Obviously, the present infrastructure, where a PDF document is still something to be grateful for, is woefully inadequate for the exchange of annotations. However, the cross-fertilizing effect that the conjunction of multiple bodies of annotations can have, will not occur unless we make these annotations, the texts, the articles and the models available in an open and publicly available format. More experimentation is clearly necessary in order to prepare the ground for annotation exchange. One of the biggest challenges will be the creation of models that are both sufficiently powerful to express significant insight, and still sufficiently flexi-

ble to adapt to changing circumstances and views. Our models should be lightweight and open to extension, modification and reorganisation. They should be expressed using formalisms that are widely understood.

Now that the initial goals of the Emblem Project Utrecht have been met, it appears that creating useful annotation tools and devising ways to share the results is considerably harder to do than digitisation itself. However, the rise of Open Access and the concept of the 'Information Commons' (Kranich 2004) seem to bode well for sharing scholarly material and the related annotations. More specifically, the increasing popularity of path creation tools such as H2O playlists (Zittrain et al. 2006) and the shortly to be released Collex (Nowviskie 2005; Nowviskie and McGann 2005) is a good sign for scholarship based on digital primary material. Networked annotation tools proliferate. Perhaps the concept of mesotext can, with McCarty's insistence on the importance of modelling, help create the conditions for successful exchange of annotations in the scholarly domain.

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