PLINY

When WordHoard met Pliny:
breaking down interaction silos between applications

John Bradley, Timothy Hill,
Department of Digital Humanities
King's College London
http://pliny.cch.kcl.ac.uk

Siloing???

- "Siloing" has become a bad word in the DH community.
- Scholarly research in the humanities often involves, through annotation and notetaking, the bringing together of materials from different sources.
- Web pages and most digital applications work against the ability by the user to juxtapose materials from different places in ways that allow him/her to preserve those juxtapositions that are interesting. In this sense, they are all siloing applications: they present barriers between each other that prevents a researcher gathering them together efficiently.

Scholarly annotation and notetaking should be recognised as a kind of "anti-siloing" activity, since scholarly research involves the juxtaposition of materials from a range of different sources.

Page as Nexus

- There is recognition of the huge potential significance of Web 2.0 social networking within the DH. This has resulted in an interest in offering Web 2.0 like services through websites built by the DH community.
- Many in the DH have, as a consequence, framed Annotation primarily in this context as a kind of semi-public social networking activity. We believe that Pliny shows that there is more mileage in viewing annotation in its personal context, as there is lots of evidence that this is a significant element of research practice for many scholars.
- When viewed this way, we see digital annotation as more similar to what happens when someone annotates printed materials in the conventional way, rather than a social Web 2.0-like activity.

When a reader writes on a book page s/he creates a place where two printed "applications" co-exist:

- The print on the page represents the *publishing application* that displays something that was created in the past: the publishing and printing of the book.
- The hand-written annotation represents a step in the "personal interpretation application": the recording of a personal note that is meant to affect the annotator's development of his/her interpretation of a body of materials. Unlike the published version, this one is perhaps just beginning or still under way at the time the annotation is written, and will carry on into the future.

For a website to provide a Web 2.0-like annotation service for its users is like thinking that annotation in a printed book is a service of the book publisher.

The page is the nexus between publishing and annotation

Pliny has been designed to recognise that personal digital annotation should not be thought of as a kind of "service" provided by a digital resource like a website, but something that, although linked to resources, is also simultaneously independent of them.

- Pliny takes the same perspective in a digital environment as that of a book page: it shows simultaneously both the publishing and notetaking applications,
- In Pliny, the screen shows material generated in the past in the "publishing application" (e.g. the web page or PDF file), but also supports the integration of material being developed in the future: the personal annotations.

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Annotation & Applications

In the following schematic we see a representation of the role of annotations in Pliny's approach to interpretation building.

- The annotations (shown in the left) sit as transition points between the digital objects they annotate, and the digital model of a personal interpretation that the user builds in Pliny.
- In the middle area we see the user using Pliny to record concepts of interest to him/her. Here there are two Pliny objects representing concepts (in reality there would be many more). Within each we see links (through previously created annotations shown in the left area) to resources that relate to them, as well as independently created notes about the concept the user has identified.
- Finally, the third area to the right shows the user assembling the concepts and references to the original sources as s/he plans for two papers.
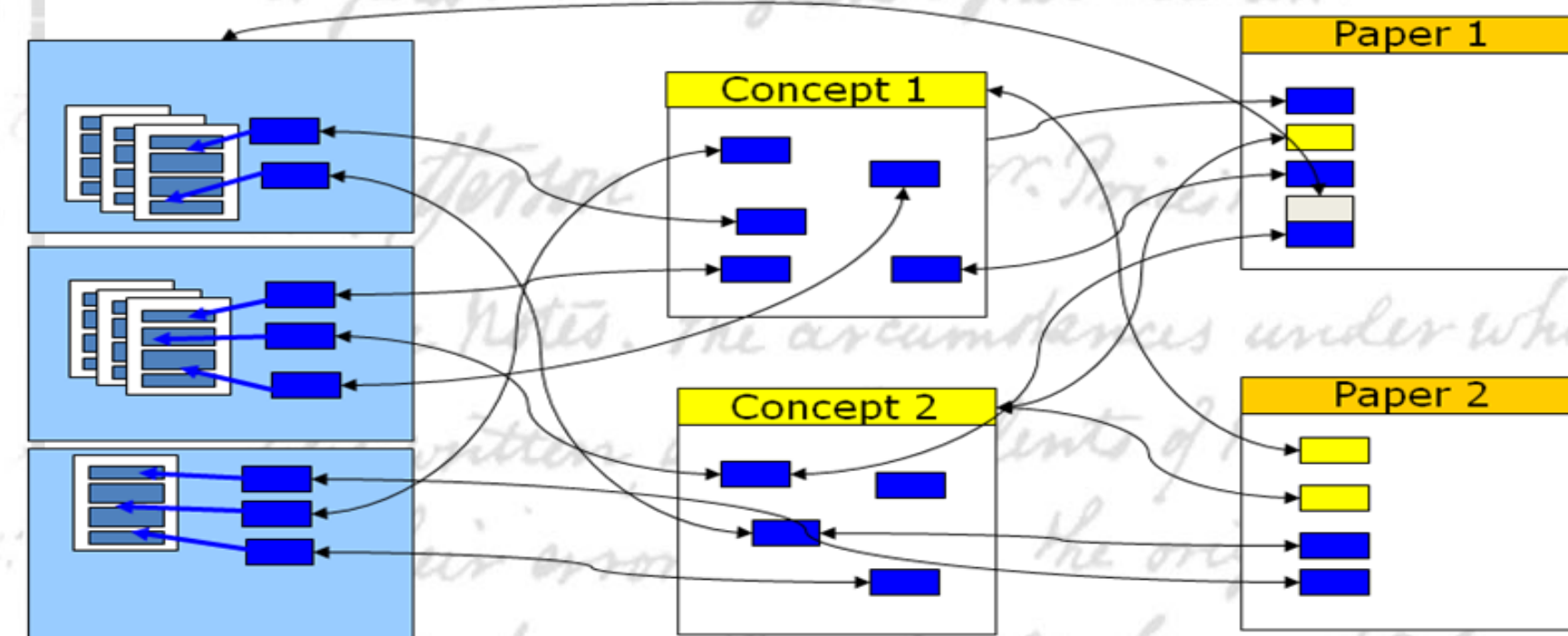
A humanities scholar is likely to develop his/her interpretation from reading across a range of sources, perhaps made available through different applications. Thus, if we take up the figure above and add an "application" component to it we get the following schematic representation:
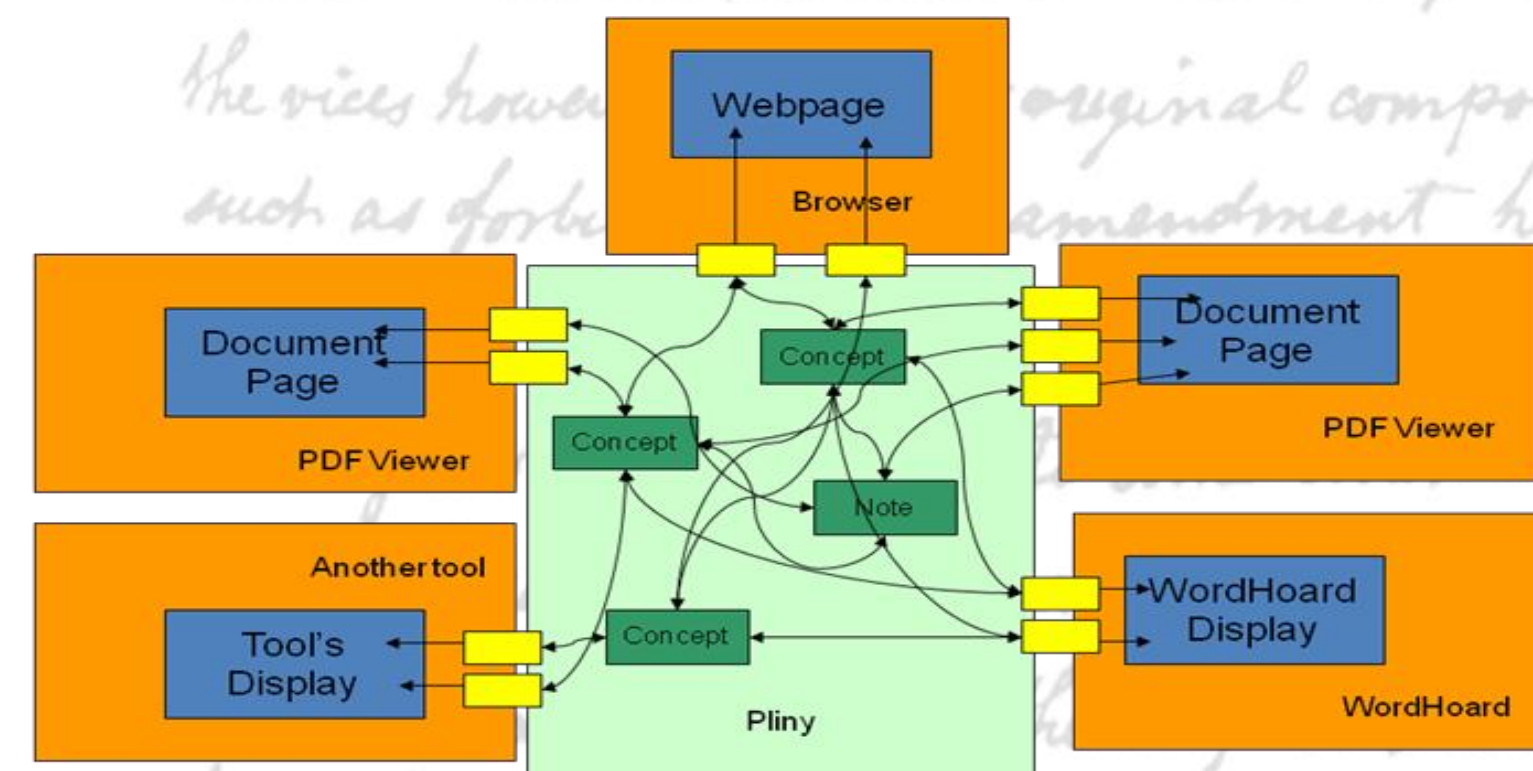
- Here we see the Pliny application (shown here in green) co-existing with other applications, with the annotations that link the various applications to Pliny's notetaking application shown as yellow boxes.
- Two of the applications (shown as orange boxes top, and top left and right) are annotation applications already present in standard Pliny: Pliny's integrated Web browser, and Pliny's PDF annotator.
- The "2nd agenda" part of Pliny's environment is shown by the bottom two boxes placed on both sides of the green Pliny box. Here, the objects being annotated don't come from Web pages and PDF files, but from two applications that have been added to Pliny:
  - The one to the right shows the Pliny-aware prototype WordHoard application that we have developed.
  - The one on the right might be an entirely different application: we have, for example, prototyped a Google maps annotation tool, and an annotation application that draws its data from the Victoria and Albert museum's online data via its public API.
- Just like notes can be attached to PDF pages or web pages, notes can be attached to WordHoard displays, and the user can use these notes in the same way as they use annotations to PDF pages: to contribute materials to their growing interpretation
- In Pliny, then, the user's annotations and notes glue together materials from Web pages, from PDF files, from WordHoard displays and perhaps from other Pliny-aware

WordHoard & Pliny

Funding from Mellon's MATC prize for Pliny was used to support an experimental implementation of WordHoard in the Pliny context.

- This required a rethinking of the roles of the different WordHoard panels in Pliny's (Eclipse-based) workbench model.

The WordHoard text display
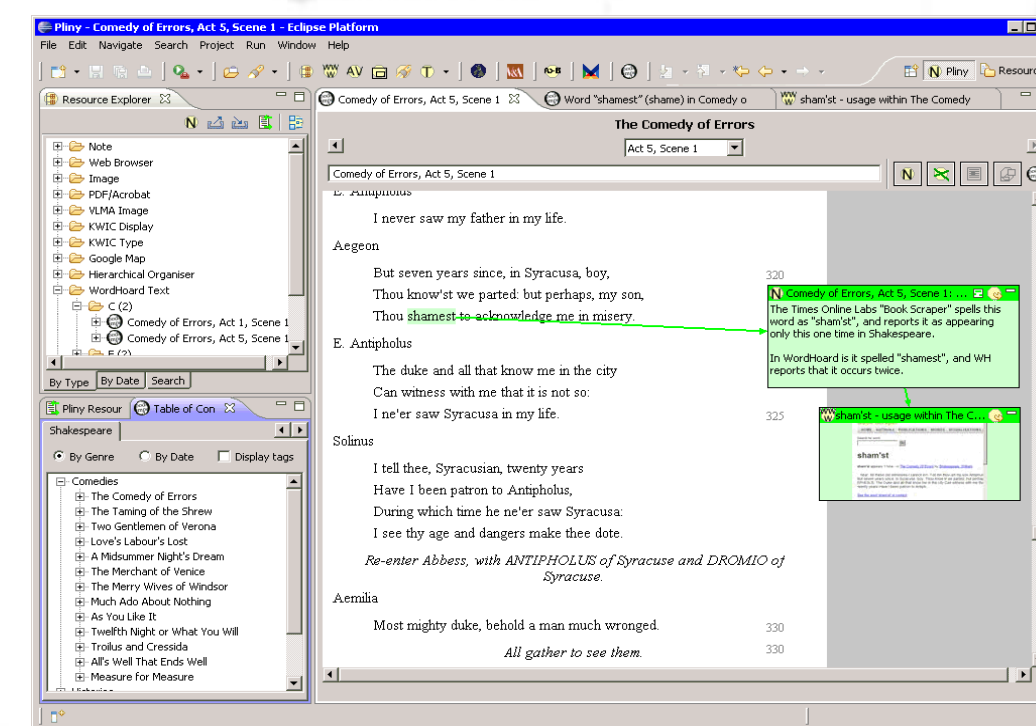
- WordHoard's text display shows what the integration is like.
- Here we see a word in it connected to a web page, showing the user's interest in the use of the word "shamest / sham'st".
- Pliny's workbench design allows any Pliny resource, including, here, a webpage, to be connected to a WordHoard text display, or vice-versa.

Annotation Everywhere

In the DH2008 poster about Pliny "Making a contribution", we noted that in humanities scholarship not only primary texts are grist for interpretation, and that we needed to think of allowing the annotation of "everything", including output from applications, and perhaps even screens (for example, query forms) that controlled the applications too.
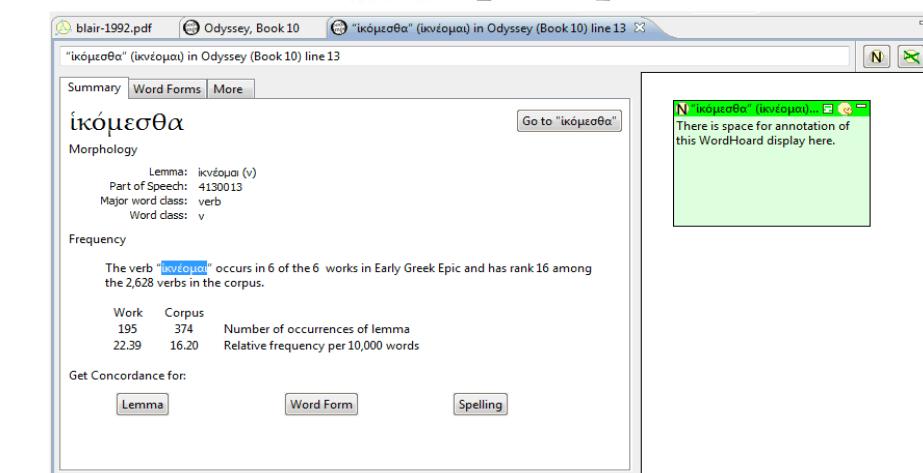
- Conventional WordHoard supports annotation only of its text screen. If a user wanted to say anything about one of the other displays, they would be unable to do so.
- As a result, in we also added annotation capabilities to other screens so that the user can record observations about them too.

Dynamic Targets

Most thinking about Annotation in the DH community has been based on static annotation targets: inspired by the pre-digital fixed printed page. However, WordHoard's concordance display allows the user to interact with it and change what is actually visible – it is dynamic.
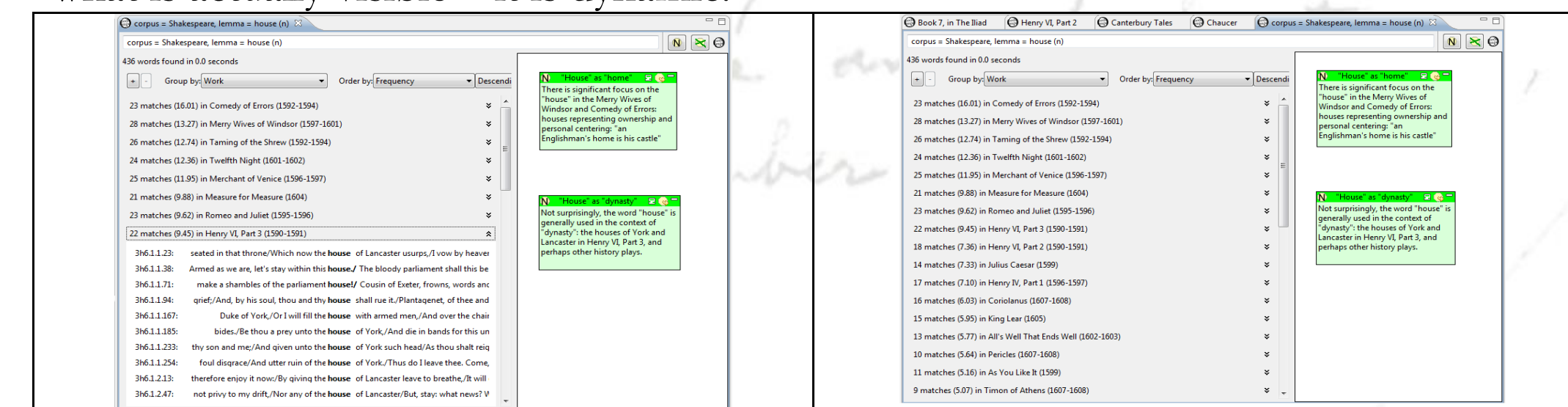
- In the left image we see the use adding a note (bottom one) while looking at the KWIC concordance for Henry VI, Part 3. Observe that the top note (added earlier) is less relevant now that the plays it refers to are not open.
- In the right image we see what appears when the concordance display is revisited perhaps months later. The relevance of both notes has lessened.
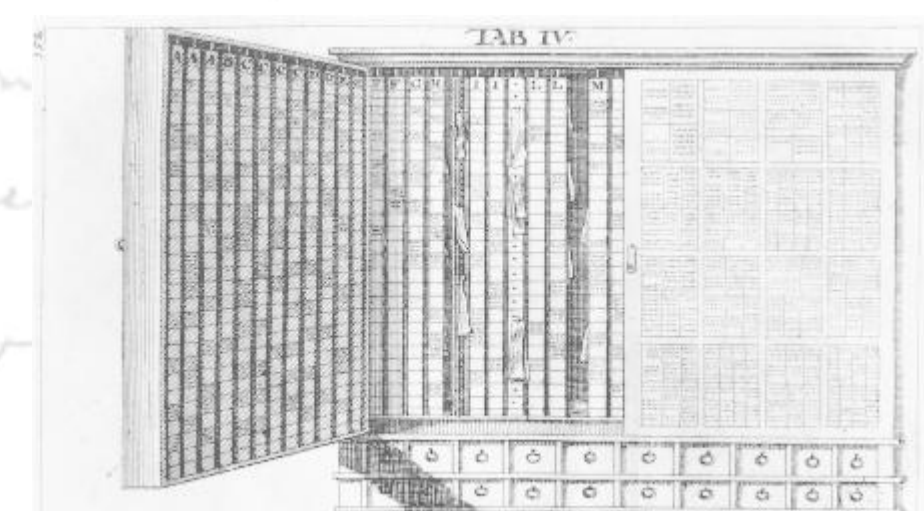
The dynamic nature of this display, then, blurs the distinction between the two-applications model. There, the target is purely the responsibility of the target publisher, and the annotation is purely the responsibility of the annotator. Here the target for annotation is the result of both what the publisher/data provider and the user have done together.

Yet Another Scholar's Workbench?

Thinking about combining Pliny with other applications shows again that Pliny is not so much about annotation alone, but about a framework where scholarly research can be done. You not only do annotation in Pliny, but also assemble a diverse range of materials potentially expandable as to type – into one place. Dare we mention, yet again, the "scholar's workbench"?

The experimental packaging of Pliny developed as a part of this project allows the user to use facilities already provided in Pliny's Eclipse foundation to add other Pliny-compatible tools in with Pliny's notetaking application. Even Eclipse-based non-Pliny-aware applications integrate to some extent: things like TextGrid as it stands can work with Pliny's notetaking tools, and perhaps tools like University of Indiana's *Science of Science* or *Network Workbench* – to the extent that they are built (as it seems they might be) on the Eclipse framework, might work too.

Agostino Ramelli's "wheel of books", to be found in his *The Diverse and Artifactinus Machines* (*Le diverse et artificiose machine*) of Captain Agostino Ramelli (Paris, 1588).
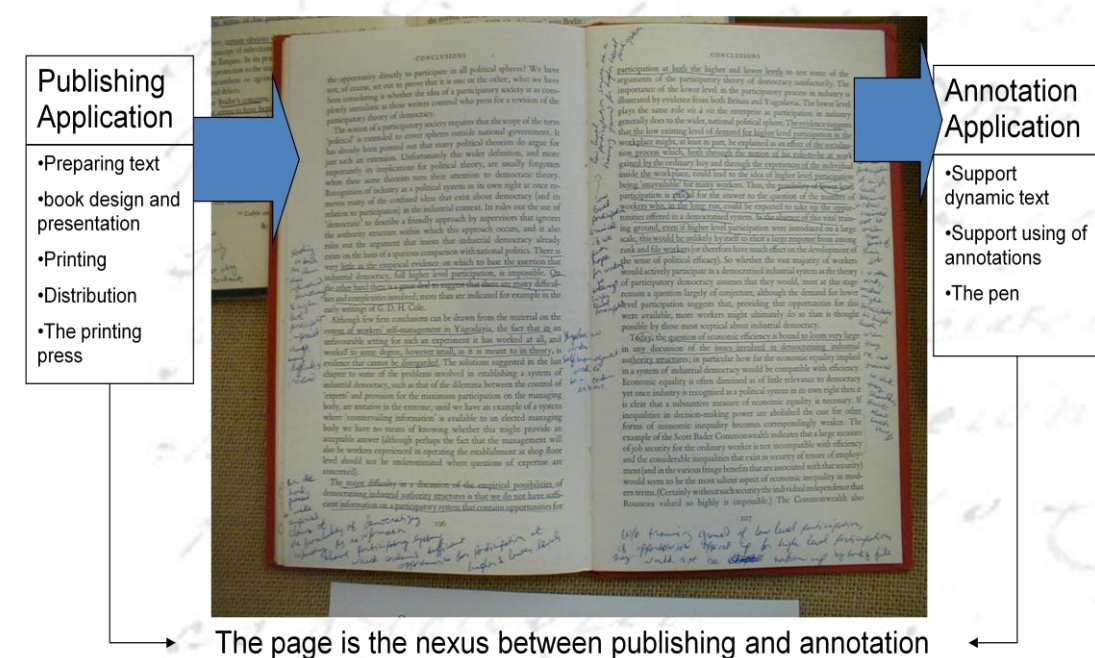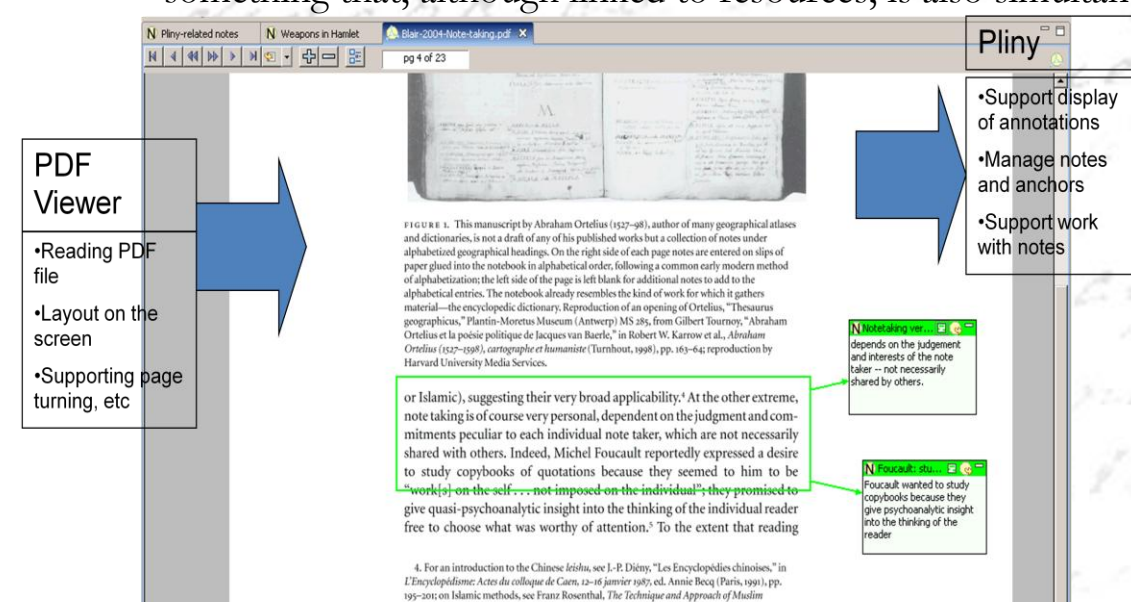
Our recent thinking here, then, involves developing a separate identity for the notetaking function from the tool assembly work-bench function of Pliny. This might involve a new name for the tool-assembly environment (Plassius? Ramelli?, Note Closet?), with Pliny retained for its notetaking component.

Vincent Placcius's note closet (*scrinium literatrum*), shown in Ann Blair's *Note Taking as an Art of Transmission* (2004). Blair notes that "the closet reveals under one gaze all the headings on which notes are available" (p. 105)

Try it yourself

- The Wordhoard plugin is a prototype
- However, you can try it out, and explore the issues that arise with annotation of applications rather than fixed digital objects.
- See website http://pliny.cch.kcl.ac.uk/matc for more information and for access to WordHoard/Pliny.