The Digital Collections of Words and Images of the CTL - Scuola Normale Superiore: the Case of Orlando Furioso

Serena Pezzini, Scuola Normale Superiore di Pisa

Abstract. The aim of this paper is to present the activities and research methodologies of CTL (Centro di Elaborazione Informatica di Testi e Immagini nella Tradizione Letteraria), a laboratory of the Scuola Normale Superiore of Pisa, founded and directed by Lina Bolzoni. CTL's objective is to investigate the complex structure of relationships between the linguistic and the figurative code in literary tradition, paying particular attention to the fifteenth, sixteenth and seventeenth centuries and using information technologies both as an auxiliary research tool and as a medium for scientific dissemination. Here I shall be discussing the Center's digitalization projects and, in particular, the project concerned with the Orlando Furioso and its remediation into images. This project, active since 2007, is, I believe, particularly representative of the progressive implementation within CTL of both traditional and computer-related methodologies in the planning of digital collections dedicated to words and images.

The CTL

The Centro di Elaborazione Informatica di Testi e Immagini nella Tradizione Letteraria (CTL) started in 2000 as an offshoot of CRIBeCu (Centro di Ricerche Informatiche per i Beni Culturali della Scuola Normale Superiore), which was founded by Paola Barocchi and personally directed by her until 2002. Established in the early 1980s, CRIBeCu was among the first laboratories in Italy to experiment with the application of information technologies to the humanities and, in particular, to art history. Following her collaboration with Paola Barocchi, Lina Bolzoni decided to found a center which might redeploy CRIBeCu's experience through a closer focus on the relationships between texts and images in Italian literature, in particular that of the fifteenth, sixteenth and seventeenth centuries, with the following objectives:
to develop suitable computer tools in support of this specific field of research;
to promote opportunities for trans-disciplinary debate and exchange on the issues of perception and representation, through collaboration with universities and cultural institutes both in Italy and abroad;
to contribute to the academic programs of the Scuola Normale Superiore through training courses, seminars, conferences, and workshops;
to publish its research results both through traditional methods of scientific communication (journal articles, conference proceedings, monographs) and through multimedial tools (CD-ROMs, digital collections accessible through the web, etc.).

One of the earliest fields investigated by CTL (an area of research, as we shall see, which remains very active in the Center’s projects) was that of treatises on the art of memory written between the fifteenth and the seventeenth centuries. Such books were originally accompanied by plates serving as illustrations of the rules of *ars memoriae* explained in the text, and, even in those cases in which they presented no visual images, they nevertheless based the systematic presentation of the rules of the art of memory on a method of mental visualization of *loci* and *imagines* which were channeled through powerful verbal images (Bolzoni; Rossi; Yates). In this light the art of memory lent itself especially well to the progressive strengthening of research instruments which, aided by information technologies, might display and interpret the intricate interactions between words and images in literary works.

When, over a decade ago, we began work on the collection which we called “Per un atlante delle immagini di memoria” (Project for an atlas of memory images), the tools we could make use of were certainly far less effective than those we have developed in the years since; nonetheless, they allowed us to structure data in sufficiently complex ways. We were able, that is, to transcribe and encode a text according to Text Encoding Initiative (TEI) standard. It was, however, only a rather bland codification: in addition to representing the structure of the text (identification and description of its frontispiece, epistle dedicatory, individual chapters and any further existing subdivisions, colophon, etc.), it was able to identify its most relevant features (names, toponyms, quotations, examples of mnemotechnique). Any iconographic apparatus in the editions we dealt with was simply visualized within the transcribed texts - maintaining its original position - and accompanied by a minimal amount of information, such as references to those portions of the text which the individual image was meant to illustrate and a classification of the iconographic subject represented, according to a system of criteria developed by CTL. The archive made available previously difficult-to-find texts accompanied by the images which served as their illustrations and by a certain amount of interpretative elements, necessary to spark off the
process of reconstructing the interplay between figures and words. This process, however, still took place mostly outside the collection, within the individual work of those researchers who used the resource and employed traditional study methods. One may say that the archive at this stage perfected the classical method of consulting a corpus of manuscripts and books, without disrupting its basic logic, and that it both maintained the principle of linear reading and limited its system of internal connections to a few (one-way) links between large portions of text and related whole illustrations.

An important step forward was made through what we may define as the prototype of the collection dedicated to the works of Anton Francesco Doni, the planning of which started in 2004. This prototype, considerably developed, evolved into a much larger project coordinated by Giovanna Rizzarelli, who is the principal investigator in the European Research Council Starting Grant Project centering on the print and manuscript works of Anton Francesco Doni. The first version of this collection, in any case, envisaged a deeper markup layer than our earlier project on the art of memory treatises, a markup which highlighted those features typical of the unique textual typology which Doni’s writing represents, abounding as it does with the already written, the already said and even the already seen (Cherchi 1987, 2001; Masi 1989, 1992). Moreover, our collection aimed to reconstruct the spiral dynamic of Doni’s literary production, where texts generate images and images prompt text developments (Mulinacci; Rizzarelli). For this reason we began to posit an as-yet embryonic layout of relationships (thematic and functional) between texts and images, to which we added examples of works of art iconographically pertinent to the subjects represented.

However, the real breakthrough in planning and understanding the requirements of the tools we would be progressively acquiring over the next few years came with the collection dedicated to the Orlando Furioso and to its translation into images.

The Orlando Furioso between images and words

The digital collection is the most significant result of a project financed by the Italian Ministry of Universities and Research (PRIN), which came to a close in February 2009 and which had as its objective an in-depth investigation of the contemporary reception of Ariosto’s poem. Attention was focused primarily on the series of original illustrations in sixteenth-century editions of the Furioso, as these iconographic apparatuses developed significantly and systematically over the course of the century, often becoming perceivable as actual rewritings of the text (Caracciolo; Girotto).
A crucial aim of the research was therefore to set up a digital collection which would allow the illustrations of the various editions of Ariosto’s text to dialogue with a specific paratextual feature: the allegorie, short prose texts which offered an allegorical reading of the cantos. Starting with Giolito’s 1542 edition, these texts are positioned close to the images which open the cantos, thereby constituting a complex and unavoidable passage towards the verses.

The digital collection houses the iconic and verbal paratexts of the Venetian editions by Zoppino (1536), Giolito (1542) and Valvassori (1553). To look at each of these briefly is certainly worthwhile in the context of this overview.

It was Niccolò d’Aristotile, called Zoppino, who in 1530 inaugurated the custom, which was to last throughout the seventeenth century, of placing at the top of each of the cantos (forty at that time) a woodcut which visually condensed the ensuing narrative matter. The printer later re-employed the series (with the exception of the illustration for Canto IX) in his 1536 Furioso, with the complete forty-six cantos, adding five new woodcuts. The graphic options offered by the Zoppino edition, albeit still germane to the style of the images contained in the “libri di battaglia” (the battle books), contributed to the structuring of an extraordinarily fortunate typographical model.

The woodcuts, which are small in size (about 40 x 60 mm.) - more or less the space occupied by a stanza - are inserted within the body of the text in line with the rest of the printed column (except for the illustration for Canto I, which is larger and in a central position). They figuratively translate a single episode from the following canto. This image therefore opens up, as it were, an iconic window onto the text, which temporarily brings to a halt the narrative flux, while at the same time remaining strongly connected to the text through basic expedients of graphic communication. The space occupied by the image harmonizes with that taken up by the verses, and the simple pictorial line helps to epitomize the narrative in a single emblematical episode, which the reader may grasp at a glance and easily decipher through the inscriptions it presents.
A decisive step in the consolidation of the editorial layout of the *Furioso* was made through the edition which emerged from the fruitful collaboration between Gabriele Giolito and Ludovico Dolce, who was the author of the *Esposizione di tutti i vocaboli et luoghi difficili che nel libro si trovano* placed at the end of the book, as well as of the forty-six *allegories* which open each canto. The engravings, characterized by a fine, elegant touch are larger (about 50 x 90 mm.) than those of the Zoppino edition, have no inscriptions, and, by making good use of the principles of spatial perspective, are in many cases able to display more than one of the narrated episodes. The illustrations are no longer
contained within the typographical boundaries of the *ottava rima*, but are placed instead in a central position and either precede or follow the *allegorie*, so that as a paratextual insertion their aim seems to be that of forcibly disrupting the *continuum* of the reading act. The presence of the visual block represented by the illustration-allegory (or vice-versa) doubly deflects the reader - from poetry to allegoresis and from verbal to visual language - thus making it necessary for him to pause. The prose allegories break up the flow of both the verses and the narrative *entrelacement* and compel the reader to step back from his involvement with Ariosto’s imaginary world to take in the allegorical pattern of each canto. The illustrations also invite the reader to make a careful examination of their content and implicitly suggest (or even subtly impose) new reading routes and new interpretations (Cerrai).
The formula sanctioned by Giolito was immensely successful, and in 1553, five years after having printed an *Orlando Furioso* which closely mirrored Giolito's edition, Giovan Andrea Valvassori, known as Guadagnino, undertook the task of an edition furnished with a completely new iconographical apparatus and with allegories by Clemente Valvassori, who also wrote the opening Prefatione. These illustrations are again larger than those of the Giolito edition (about 65 x 90 mm.), and are similarly lacking in inscriptions. However, by using the greater height of the engraving, the illustrations present a space divided into numerous perspective planes. The various “curtains” reveal the episodes which appear in the canto, and, albeit with frequent exceptions, follow the narrative progression as
they recede from foreground to background. The proliferation of scenes, the myriad characters which populate these vignettes, the absence of inscriptions and the dishomogeneous organization of the temporal sequence make for a particularly complex reading experience. In addition, the illustrations are enriched by lateral friezes (in Valvassori’s reprint of the following year these turned into full-blown and rather imposing frames), which further contribute to a visual marking of the hiatus between the paratextual insertion and the verses.

Fig. 3. L. Ariosto, *Orlando Furioso*, Venezia, Valvassori, 1553, Canto IV

In the space of just above twenty years, therefore, between the Zoppino and the Valvassori editions, the illustrations progressively gained more space on the page and, by a clever organization of perspective planes, managed to incorporate
an increasingly large number of episodes and characters. They now took up a
more prominent position next to the allegories, in combination with which they
constituted a much more overt paratextual insertion which significantly marked the
opening of each canto.

The gradual naturalization of this paratextual element within the interstices of
the text went hand in hand with the overall growth of the apparatuses
accompanying the subsequent editions of the *Furioso* (epistles dedicatory, tables,
indexes, and comments), thereby multiplying the exegetical tools available to
readers (Ellero).

**The Orlando Furioso on the web**

Confronted with such material our research has tried to open up to
investigation two fundamental and closely related issues. Firstly, what was the
new significance of the progressively more elaborate *Furioso* in its various new
declensions as a book? How did the poem, that is, change with its changing
dress, the ever more complex, ever more mediating garb with which it presents
itself? Secondly, in what manner did those particular, special readers of the
*Furioso* - its illustrators and the authors of the allegories - understand the crucial
issues of the text and in what way did they contribute with their work to re-
determine their readers’ approach to Ariosto’s poem?

In order to plan a digital collection which would allow us to adequately
formulate and explore possible answers to these questions, issues had to be
framed in as specific a manner as possible: what type of interaction do the
illustrations and the allegories set up with the verses they propose to “translate”? What
selective criteria do they reveal with respect to the poetic material? What
organizing grids underpin the reconfiguration of the selected material within the
new iconic and allegorical codes? Finally, what type of relationship exists (and
indeed does any relationship exist?) between the images and the allegories in a
given edition, and can any connection be identified between the images and the
allegories of different editions?

Once these interrogatives had been clearly laid out, the central question
became how to structure a digital collection which would allow us in the most
efficient fashion both to make hypotheses and to answer questions.

The digital archive dedicated to the *Furioso* places center stage the book-
object (Genette) and focuses its analyses on the function of the support, the
dress, as it were, through which the text is presented to the public. It is on
the web, exactly where the materiality of the book is doomed to crumble and
disappear, that a study focusing on these unique peculiarities of the book-object and on the sense-related effects produced by representational devices finds space and visibility/visualization (Chartier). But to reflect on the fundamental function of the material support through which text and images are presented entails questioning the reception mechanisms prompted by the shifting of the various documents which are the object of our study from paper to screen, from the book to the web, and forces us to consider the subsequent adjustments in their reception. How should one therefore treat and present these documents within a digital collection? The solution chosen for this question was to dismantle the book-object into its various components (the text— that is, the lines of the poem; the verbal paratexts— the allegorie; and the visual paratexts— the illustrations) in order to reassemble these blocks within a new hierarchical arrangement which would usefully direct navigation.

The documents immediately available through navigation consist of the illustrations and the allegories, consultable through dynamic indexes, while the text of the poem cannot be accessed directly but is in any case searchable; it remains, so to speak, in the background of its various declensions in the illustrations and in the allegories. This solution aptly translates, in terms of both functionality and interface, the methodological groundwork of our enquiry, which reverses a traditional perspective: instead of exploring the centripetal motion, the spawning, as it were, of the narratives per figuras (be these visual or verbal), our collection allows users to navigate the constellation of illustrations and allegories by moving directly from one to another, while all the time keeping in view, as if through a semi-transparent veil, the solid texture of the verses.
The conversion in support from book to web therefore involves a variation in the status of the components of the book: within the hypertextual system the allegories and the images are no longer paratextual, but textual matter, while the verses of the *Furioso* recede slightly into the background, thus becoming hypotext and visible only as they nestle within the figures and the allegories.

This radical approach to the digital collection has allowed us to build an interface which presents itself as a horizontal work space across which the illustrations and the allegories may dialogue, follow each other, or even overlap, thus creating the ideal environment for the individuation of any existing kinship or connection between the graphic solutions employed by the various editions.

Let us now move on to the other important issues posited by our research on the inter-relationship between text, allegories, and figures and how these have impacted on the setup of the *Furioso* archive.

In order to respond successfully to these issues, detailed cards for each image and allegory have been devised. These do not merely indicate the lines to which each portion of the images refer, but also account for the selection of poetic material proposed by the illustrators and the authors of the allegories, through a series of entries which pinpoint the scenes and the episodes, the characters, the settings, the allegorized elements and their meaning. The data which is presented thus makes it possible to formulate hypotheses regarding the criteria used in the selection of the poetic material (what is represented in the images and allegories and what is omitted) and regarding the rationale which undergirds the reassembly and remediation of the selected material within the new codes of expression.
In the header cards links are placed which connect the illustrations with the allegories of a canto within the same edition. This means it is possible to verify whether the elements which structure the editorial garb of the poem contribute to the construction of a coherent model and, if so, what sort of model this may be. There are, moreover, links which allow the user to compare the illustrations and allegories from the same canto over different editions. Where specific correspondences in portions of illustrations from different editions have been identified, these have been marked through links but within the entries of the relative card, so as to keep the system of comparison clear and to the point.
As regards the iconographic mapping, our earlier collection, dedicated to the art of memory treatises, had included a rough classification of the iconographic subjects based on criteria elaborated by CTL, but in this case we chose to adopt the Iconclass codes (also reproduced as an entry in the image cards) to catalogue the significant iconographic elements. Iconclass is an alphanumeric system of classification for the subjects represented in images in various media; it is used by various international cultural associations and therefore allows the interoperability of the data (www.iconclass.nl).

The format we chose to organize the cards has two important aims: (1) To always connect the image or the allegory to the exemplar to which it belongs, so as to account for the original context of its reception; (2) To connect the image to the text to which it refers and to any other existing or relevant paratexts and illustrations, so as to re-establish the network of inter-relationships between images and words. For each single resource the graphics of the navigation layout are organized so as to clearly distinguish between two kinds of links: the first type aims at recomposing both the unity of the book-object, which has been parcelled out, as it were, by the collection, and the continuity of the corpus of the documents (digital reproduction of the entire page, links to the allegory or image from the same canto in a particular edition, comparison between paratexts from different editions); the second type of link is the result of interpretative work. The first type of link is clearly visible in the header of

Fig. 6. www.ctl.sns.it/furioso: comparison between the illustrations of Canto III in Valvassori and Giolito editions
the card, while the second type is an integral part of the entries in each card. This setup enables us to maintain, alive and available (although not binding), the hierarchy of relationships implicit in allegories and illustrations at the time when they were created and were enjoyed as integral parts of the book. At the same time, nevertheless, the system allows one to create multiple new cross-references among illustrations, texts, and paratexts. The interface guarantees, in other words, an immediately visible distinction for the user between the relationships already existing “within the book” and those which have been reconstructed “through the archive” and are the result of interpretative acts.

Finally, we arrived at the decision to furnish our users with a set of especially sophisticated search functions. In addition to the classic full-text search for one or more single term/terms, it is possible to carry out detailed enquiries, thanks to the cross-referencing of data originating from different types of resources, and to conduct very closely focused research. These tools are: (1) A resource-type filter (illustrations and allegories, refinable by edition and text of the poem); (2) A database which contains all the normalized forms of names and toponyms and which also allows users to search (separately or at the same time) characters and places which figure in the illustrations, are referred to in the allegories or described in the text, and objects mentioned in the allegories. Verses, illustrations, and allegories are thus subject to simultaneous cross-examination thanks to a tool which allows both wide-ranging and detailed study.

**Problems and perspectives**

Since 2010, thanks to new ministry funding, CTL has been able to pursue the project dedicated to the *Orlando Furioso* and its translation into images and has introduced new materials into the collection. Among these are works of art from the sixteenth and seventeenth centuries which were inspired by episodes of the poem – some of which adopted the illustrations as iconographic models (Wilson; Ravanelli Guidotti; Caneparo; Zampetti). Also added are the figurative paratexts and some of the verbal paratexts from the *Furioso* printed by Vincenzo Valgrisi in 1556.

Valgrisi’s book is a rich and complex editorial product: it was edited by Girolamo Ruscelli and is furnished with an impressive paratextual apparatus, which introduces, comments on, and orders Ariosto’s literary material. It is embellished with *nuove figure*, the first full-page illustrations of the poem. The engravings can be seen as a continuation and a complication of the format, inaugurated by the Giolito edition and pursued by Valvassori, of the simultaneous narration of numerous chronologically and spatially separate events represented within the same scene. Here, however, the full-page scale provides room for a
vertiginous increase in perspective planes and the episodes represented, and the images swarm with characters (Coccia; Tomasi Velli 102-107).

Careful attention to textual detail, meticulously translated into figurative language (often in minuscule size), makes the interpretation of these large images a challenging and intriguing task. The Valgrisi edition, moreover, was the first edition to present, for each canto, an additional ottava which summarized the argument and which was placed between the illustration and the allegory. Thus the threshold the reader has to cross before s/he can gain access to Ariosto’s actual words becomes ever more imposing and variegated: new verses,
which pick up the meter of the *Furioso*, are added to the figurative and allegorical codes, modulating the rhythm of the poem with another lyrical voice.

The addition of this further edition to the collection therefore involves coming to grips with a considerable new body of figurative documentation, with new verbal paratexts, and with a new set of almost paroxystically developed illustrative paratexts. If the new materials are to be presented and examined in their full potential, if they are to successfully dialogue and interact with the pre-existing documents, and if using the expanded collection is to be as enjoyable an experience as possible, then a rethinking of the entire collection becomes not only feasible but necessary. While in many respects successful, the collection, as it was launched at the close of the first ministry-financed project and as it stands today, is still open to improvement in certain areas. The addition of the works of art inspired by the *Furioso* and of the Valgrisi edition urgently highlights the need to create solutions to these problems. While choosing to maintain our basic conception of an interface which, as I hope has emerged from my overview, both respects and valorizes the methodological premises and the aims of our research, we have identified those aspects which need to be improved.

The site navigation, which is organized through a system of horizontal tabs, must undoubtedly be rendered more agile and functional. We are here in an advantageous position thanks to the experience gathered over the years in the laboratory, especially with regard to the designing of complex interfaces able to represent collections of words and images. Our reference model is the new archive dedicated to the print and manuscript works of Anton Francesco Doni ([www CTL.sns.it/doni](http://www CTL.sns.it/doni)), which CTL has been working on since 2008. The adoption of a consolidated web format (opportunely adapted to the specific context) would also have the advantage of presenting the users of the various digital collections in CTL with a methodologically and visually coherent navigation space.

2. The back-end must be simplified. The system which we initially employed to insert data into the collection was somewhat elaborate and unwieldy, and required, on the part of the compilers, considerable knowledge of the TEI encoding scheme. Moreover, it was liable to make frequent errors, which, once noticed, were difficult to correct. Finally, the exclusive employment of TEI marking, following P5 guidelines did not allow semantic interoperability ([http://www w3 org/standards/semanticweb/](http://www w3 org/standards/semanticweb/)). For these reasons, in laying out the new collection we have chosen to introduce RDF (Resource Description Framework) and OWL (Ontology Web Language). This is another case in which we can refer to methodology we have already implemented at CTL, where the new encoding system has already been tested in the course of our MIUR-financed project (Ministero dell'Istruzione dell'Università e della Ricerca), which
started out in 2008 and is aimed at the construction of a digital collection centered on an anonymous fifteenth-century manuscript on the art of memory, held in the Sainte Geneviève Library in Paris, MS 3368, *De l'artifitial memoria* (Torre).

3. The interaction between words and images must be more rigorously arranged. In the transition from the early CTL archive on the art of memory treatises to the *Furioso* collection, the interplay between text and illustrations underwent considerable reshaping, which not only rendered exchanges more fluid and dynamic but also made possible a more in-depth analysis. The comparison, interweaving and succession of the verbal and visual codes are now more closely-knit and rapid, and the manner in which the search functions are planned allows simultaneous and analytical questioning of the resources, which, thanks to the introduction of filters for typologies and editions, may be fully understood in their complexity and interconnectedness. Nevertheless, the image encoding process cannot yet be said to include all the information necessary to establish relationships and attribute meaning. In the case, for example, of the whole/part nexus which may be established between a woodcut considered as a whole image and a particular part or portion of it, we had earlier allowed the interface to represent what the encoding did not express; but, already in the Doni archive and later in the collection centered on the Sainte Geneviève Library manuscript, this setback has been overcome by means of a software which allows the definition and annotation of polygons enclosing portions of images.

This constitutes yet another example of the ways in which the upgraded *Furioso* collection will take advantage of the methodological and IT experience garnered over the past few years by the CTL research team. Once it has been completed, this archive will in its turn become the starting point for planning new ways through which digital collections may explore the reciprocity between words and images.

NOTE: Since September 2012 the upgraded collection dedicated to the *Orlando Furioso* and to its translation into images is online: [www.orlandofurioso.org](http://www.orlandofurioso.org). Comments and suggestions are welcome.

### Works Cited

**Primary works**

*Orlando furioso di messer Ludovico Ariosto nobile ferrarese, di nuovo ristampato, & historiato*: con ogni diligenza dal suo originale tolto: con la nuoua giunta,
& le notazioni di tutti gli luoghi, dove per lui è stato tal opra ampliata: come nella nova tavola nel fine per ordine vedere si puole, In Vinegia, per Nicolò d'Aristotile detto Zoppino, 1536 del mese di genaio.

Orlando furioso di messer Ludovico Ariosto nouissimamente alla sua integrità ridotto et ornato di varie figure. Con alcune stanze del signor Aluigi Gonzaga in lode del medesmo. Aggiuntovi per ciascun canto alcune allegorie et nel fine una breve esposizione et tavola di tutto quello, che nell'opera si contiene, In Venetia, appresso Gabriel Iolito di Ferraii, 1542.

Orlando Furioso di messer Lodovico Ariosto, ornato di nuove figure & allegorie in ciascun canto. Aggiuntovi nel fine l'esposizione dei luoghi difficili. Et emendato secondo l'originale del proprio autore, in Venetia, per Giovan Andrea Valvassore detto Guadagnino, 1553.

Orlando furioso. Di m. Lodouico Ariosto, tutto ricorretto, et di nuoue figure adornato. Al quale di nuouo sono aggiunte le Annotationi, gli auuertimenti, & le dichiarationi di Girolamo Ruscelli, la vita dell'autore, descritta dal signor Giouambattista Pigna ..., In Venetia, appresso Vicenzo Valgrisi nella bottega d'Erasmo, 1556.

Secondary Works


