

# EARLY MODERN INTERTEXTUALITY IN THE DIGITAL SPACE

## Notes on the design of the *SFlnC* archive

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**Abstract** – Against the background of the ongoing scholarly debate on digital data collection, visualization, and fruition, this paper explores the methodological implications of Digital Humanities approaches to early modern intertextuality by discussing the design of *SFlnC*, an experimental resource centred on the sixteenth-century French and English afterlives of Ludovico Ariosto’s *Suppositi*. Focusing on the Anglo-Italian branch of the prototype, the article comments on the difficulties encompassed in its modelling and in the transcription of the early modern texts it hosts, from the long-standing dilemma between old and modern spelling to the representation of the scripts’ bibliographical ontology. Further reflection is given on the impact of a hypertextual structure on digital editorial practices, laying emphasis on viable visualization and representation modalities for genetically related texts. The resulting analyses highlight the project’s strengths and weaknesses while also identifying foreseeable technological improvements and ways forward for alike resources, promoting a more comprehensive and digitally aided study of early modern intertextuality.

**Keywords:** early modern intertextuality; digital humanities; digital archive; project design; prospects.

## 1. Introduction

In their introduction to *Rethinking Shakespeare Source Study*, Dennis Britton and Melissa Walter have aptly listed digital resources among “the tools we now have for seeking material evidence of practices of transmission” (2018, p. 7), thus calling attention to their potential for valorizing and reassessing the intertextual and intercultural exchanges underpinning early modern drama. Digital methods and tools have indeed aroused increasing academic interest over the last few years, resulting in a rich outpouring of studies that, for the early modern period, include *Shakespeare and the Digital World* (2014), *Early Modern Studies after the Digital Turn* (2016), or the forthcoming *The Past, Present, and Future of Early Modern Digital Studies*, as well as a number of illuminating articles and book chapters. Drawing in strands from different disciplines, these contributions analyse the affordances and limitations of digital approaches to analogue objects and immaterial relations from a variety of angles, teasing out innovative research questions, testing new methods for knowledge creation and dissemination while constantly reconsidering DH theory and practice as new tools and projects are launched, updated, and lost. The dynamicity of the field has also created unprecedented room for experimentation, providing DH practitioners with opportunities to form cross-disciplinary collaborative networks, develop new skills to keep up with evolving technologies, and even help to “shape the direction that some of these technologies take” (Liang 2021, p. 192). As increasing numbers of digital scholarly endeavours widen our research horizons and expand our operational toolkit, there seems to be always more to uncover: “more to aggregate, more to augment, more to analyse, and more to act on” (Crompton *et al.* 2019: 1). A perspective that, albeit thrilling, can also be daunting at times.

If open-endedness and non-linearity are frequently praised as added qualities of DH work, an opportunity for growth rather than a limit, one caveat is worth noting.

Despite ever more significant advances and normative attempts, DH practices, particularly those involving textual processing, continue to represent a “terra incognita” (“unknown territory”, Mancinelli, Pierazzo 2020, p. 1) to some extent. Especially when “compared with traditional editorial activity” (Capellotto 2018, p. 77), the area seems to have been only partially mapped out, due to its continuous expansion, the everchanging online landscape on which it depends as well as the lack of shared codification and evaluation criteria. The related instability might explain why critical reflection in the field tends to linger “on the future, on the projected outcome and potential of the undertaking” (Brown *et al.* 2009, online) rather than the actual results gathered at present – on the digital workflow itself rather than the output, which often remains stuck in the endless perfectibility (see Italia 2020, p. 7) of an “eternal prototype” (Kirschenbaum 2009, online). To borrow Anne Burdick’s insight in this respect, “Digital Humanities infrastructures encourage prototyping, generating new projects, beta-testing them with audiences both sympathetic and skeptical, and then actually looking at the results” (2012, p. 22). As a consequence, perhaps more so than in other areas, doing has “primacy” over thinking “in the *poiesis* of digital humanities” (Nyhan, Rockwell 2023, p. 4); keeping up with a tradition of “reflecting back on what [DH] was doing in order to justify itself to fields that are anchored in discourse” (Nyhan, Rockwell 2023, p. 5), DH projects are usually what sparks theoretical and methodological reflection – not vice versa. Resource creation is thus brought “to the center of research, favouring process over product as well as versioning and extensibility over definitive editions and research silos” (Thompson Klein 2017, p. 25). In line with this ‘reversed’ hermeneutics, critical DH discourse shows a tendency to “moving away from a strict problem-solving approach that seeks to find a final answer: each new design opens up new problems and – productively – creates new questions” (Burdick 2012, pp. 22-23); each endeavour serves as a valuable site of technical experimentation as well as theoretical and methodological elaboration. More often than not, we think *with* rather than *about* doing DH.

In the spirit of a growing community that questions itself in search for new ways forward, the challenges entailed in the making of DH projects can then be regarded as a point of strength, a gateway to innovative argumentations and methodologies born out of digital practice:

As Digital Humanities both shapes and interprets this imaginary, its engagement with design as a method of thinking-through-practice is indispensable. Digital humanities is a production-based endeavor in which theoretical issues get tested in the design of implementations, and implementations are loci of theoretical reflection and elaboration. (Burdick 2012, p. 13)

Aligning with this experimental approach to project design, this article explores the methodological implications of the encounter between DH and early modern intertextual studies by focusing on *SFIInC (I Suppositi in Francia e Inghilterra nel Cinquecento / I Suppositi in France and England in the Sixteenth Century)*, a pilot digital resource I developed as a part of my PhD project dedicated, as per its title, to the sixteenth-century French and English afterlives of Ludovico Ariosto’s comedy *Suppositi*. Far from providing out-of-the-box answers or supposedly ‘best practices’, the following sections bring into sharper focus the Anglo-Italian branch of the site to comment on the ‘hard’ choices faced while designing the resource, the solutions I came up with, as well as what might come from further work and foreseeable technological improvement. The aim is to tap into the ongoing conversation about the making of DH, sharing prototype-specific modelling activities to inquire into the limits, gains, and prospects of similar endeavours

for a more comprehensive, digitally aided study of early modern intertextuality.

## 2. *SFInC*: an overview

As mentioned above, *SFInC* is the digital offshoot of a PON PhD project funded by the European Social Fund 2014-2020<sup>1</sup> and developed by the University of Bari Aldo Moro in partnership with the University of Neuchâtel (Switzerland) and the Teatri di Bari Kismet-Abeliano. Stemming from the textual corpus at the core of the research, *SFInC* has been designed as a multilingual, open-access resource that gathers a selection of parallel scenes taken from *Suppositi* and their early modern French and English translations and adaptations. More specifically, at present the platform hosts digitally edited transcriptions of Act 2 of *Suppositi* in prose and verses and of three derivative works: *Comédie très élégante* by Jacques Bourgeois, the first verse adaptation in French (1545); *Comédie des Supposez* by Jean-Pierre de Mesmes, a ‘faithful’ translation in parallel-text format carried out for pedagogical purposes (1552); and George Gascoigne’s *Supposes*, the first and only English rendering of the comedy born out of the collation between both Ariostan redactions (1566). The resource has been temporarily located on the *Wordpress* hosting platform, but it is supposed to migrate onto a proprietary domain to guarantee functionality and long-term maintenance.



Figure 1

Screenshot of *SFInC*'s homepage: <https://sfir5318471.wordpress.com>

Structure-wise, *SFInC* follows a hypertextual logic, allowing for modular fruition of the digitized contents through multisequence explorational pathways that are only partially traced by the curator. The hyperlinks that feed into this architecture can be classified, following Francesca Tomasi's taxonomy, into four macro-categories: “within the text”,

<sup>1</sup> PON grant “Action 1. Innovative industrial doctorates” for three-year PhD research projects approved by the Research Directorate of the Italian Ministry of Education (MIUR) and co-funded by the European Social Fund (ESF).

connecting same-level sections of it; “between the texts” featured on the platform; “between a text and its comments” or annotations; and “between the text and external resources” (2008, pp. 158-159) such as independent websites, complementary archives, encyclopaedias. Navigation-wise, *SFInC*’s homepage opens to two possible routes: clicking on the upper-right-corner button *About*, one can browse through a consultation guide divided into three sections – *Premesse* [‘Premises’], *Archivio* [‘Archive’], *Criteri* [‘Criteria’] – meant to share the resource’s selection and digitization criteria; alternatively, one can click on *Commedie* [‘Comedies’] and gain straight access to the hypertextualized extracts, which can be then freely explored according to individual research needs.

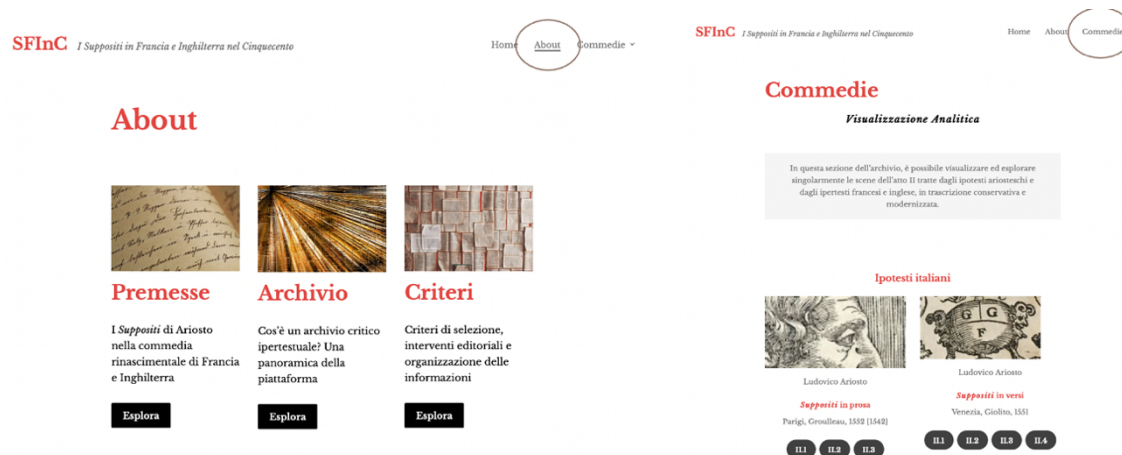


Figure 2  
Screenshots of *SFInC*’s *About* and *Commedie* sections.

When landing on *SFInC*, the user visualizes a banner that sums up the main features of the resource, contextually presenting it as a “critical hypertextual archive” – a label that might require some framing. The adjectives ‘critical’ and ‘hypertextual’ are now quite self-explanatory in the DH area: they refer to the mediated, edited nature of the uploaded material and its structural organization, respectively. The notion of ‘archive’ is notoriously more contentious, especially if juxtaposed to that of ‘edition’. Although “there are remarkable parallels between both fields” (Galey 2014, p. 66), editions and archives have been traditionally set apart in force of the supposedly different levels of critical neutrality produced by their workflows: whereas the edition seemed “to interpret on behalf of the reader” (Massai 2004, p. 103), the archive came across as an “acritically presented mass of information” (Massai 2004, p. 103) with only “minuscule” editorial intervention (Shillingsburg 2006, p. 156). The former was believed to make a scholarly argument out of its primary sources, while the latter supposedly provided documentary surrogates of them. Over the last fifteen years, such views have been debunked, but what remains relevant to our discussion is the emphasis current DH discourse lays on the productive synergy between these two representational modes, rather than on their contraposition. According to Kenneth Price, “words take new meaning over time [...] and archive in a digital context has come to suggest something that blends features of editing and archiving” (Price 2007, p. 345), thereby postulating a continuity that, in Wout Dillen’s words, “will remain a key aspect of the digital scholarly edition in the near future”:

Rather than shifting the responsibility of interpreting the curated materials entirely to the user, this combination of archival and editorial impulses merely makes the interpretative quality of the edited text more explicit and encourages a more critical

reading of the work – which has been the aim of the digital scholarly edition all along (2019, p. 405).

In line with many authoritative digital scholarly resources now available online,<sup>2</sup> *SFInC* has been ideally placed at the crossroads between these two “impulses”: unlike ‘plain’, unmediated collections of digitized artefacts, *SFInC* aims to foster a multilevel exploration of the documents it hosts, thematizing the larger network of cultural implications, material and immaterial exchanges, human relations embedded in them without overlooking their genetic relationship, the differences and similarities that reveal their shared history at both a textual and cultural level.

If this overarching goal helped to solve the naming conundrum – an apparently simple choice but with far-reaching implications, as Price has pointed out (2009) – the actual development of the resource posed several other challenges, mainly brought about by its plurilingual and pluricultural vocation. To comment on them, two main design phases will be discussed: the modelling of the platform and the digitization of the documents, and the implementation of specific visualization and (re)presentation modes for the final output.

### 3. Modelling and Digitization

Modelling is the preliminary phase of any scholarly endeavour, be it digital or analogic. “Our models”, Julia Flanders and Fotis Jannidis observe in this sense,

represent the shaping choices we make in representing and analyzing the materials we study. As Michael Sperberg-McQueen put it in his keynote to the 2012 workshop on Knowledge Organization and Data Modeling, ‘modeling is a way to make explicit our assumptions about the nature of a text/artefact’, and this statement is importantly agnostic with respect to medium. Although the digital medium has brought these choices and representational systems into heightened visibility, they have been at the heart of scholarship since the beginning. (2019, p. 3)

DH modelling naturally partakes in a long history of ‘analogic’ practices, gaining traction from it to formalize the different phases of the intellectual and technical work it performs. In *SFInC*’s case, the first step of this complex process corresponded to the identification of an editorial format functional to the expression of the curator’s ecdotic standpoint (see Mancinelli, Pierazzo 2020). Multiple options were on the table – the best-text method, the social edition, the historical edition, and the genetic edition, to name but a few. Ultimately, my choice fell on the documentary digital edition format for the remarkable flexibility it offers – a decisive aspect for a pluricentric resource like *SFInC*. To quote Elena Pierazzo, this format is centred on the “edition of a particular document instead of the critical text established on the basis of the collation of multiple witnesses” (Pierazzo 2020, p. 57), thus proving capable of presenting textual and cultural data in different ways according to the more or less ample “concession to the reading habits of the public of choice” (Pierazzo 2020, p. 57). It allows, in other words, to thematize “as many features of the original

<sup>2</sup> *The William Blake Archive* (<http://www.blakearchive.org>) and *The Walt Whitman Archive* (<https://whitmanarchive.org>) might be cited, by way of example, among the several hypertextual DH resources that feature the word ‘archive’ in their title.

document as are considered meaningful by the editor(s), displayed in all the ways the editors consider useful for the readers, including all the tools necessary to achieve such a purpose” (Pierazzo 2011, p. 475) in ways often impracticable for more traditional formats:

A documentary edition offers the chance to explore, get to know, and study a document from multiple perspectives (textual, paleographic, codicological, cultural, iconographic...); in a sense, the documentary edition relates to the source document as a map relates to a territory: it is its selective model [...] but it also becomes an instrument for the user to explore an unknown area. Secondly, a documentary edition valorizes and makes accessible textual material that would hardly find place within more traditional publication formats, either because it is too niche to appeal a publishing house, or it is too hard to reproduce on paper. (Pierazzo 2020, p. 59, my translation)

Given these opportunities, documentary editions are unsurprisingly “one of the most successful digital editorial formats” (Pierazzo 2014, online), adopted by well-established scholarly hypertextual archives like *The William Blake Archive* or the *Walt Whitman Archive*.

This first determination led to the individuation of the documents to digitize. The bibliographical contingencies of the primary sources I worked with did not help in the task: considering just the Anglo-Italian branch of the platform, *Suppositi* in prose can count on twelve print editions between 1509 and 1587, with multiple witnesses each; the comedy in verses was published in two editions up until the 1560s, when the last of its sixteenth-century reworkings was realised; Gascoigne’s *Supposes*, on the other hand, is featured in three anthologies marked by bibliographical discrepancies and different degrees of authorial control. How to decide which editions to digitize? For *Suppositi*, following the lead of *SENS* – an authoritative digital project developed by the Skenè Research Centre at the University of Verona to which I now contribute,<sup>3</sup> but that had yet to be launched while *SFInC* was in the works – it would seem appropriate to digitize the source texts in the edition likely consulted by the authors included in the database. For *SFInC*, however, this option was not viable due to the scattered information available on the filiation of the works of interest, particularly for what concerns Gascoigne’s base editions for *Suppositi*. Due to such core indeterminacies, *SFInC*’s prototype prioritizes the digitization of the *editiones principes* of each work, with only two exceptions: *Suppositi* in prose is based on the text printed alongside the *Comédie des Supposez* to account for the specific textual ontology that guided Mesmes and possibly even Bourgeois’s earlier rendition; as for *Supposes*, the digitized text is currently taken from the second edition of Gascoigne’s anthology (1575), which was preferred to the *princeps* for its more linear publication *iter*. A future expansion in this sense would include the digitization of the other editions published in the period of interest, so as to widen the span of the archive and sharpen the focus on the multiple levels of diachronic intersection that link the works hosted on the resource.

The preparatory work for *SFInC* also entailed a set of decisions related to the digitization of the texts itself. As is known, in the context of digital scholarly resources, textual entities can be generally processed through a conversion in machine-readable form and/or searchable or static facsimile reproductions. Whereas the latter champions the

<sup>3</sup> *SENS. Shakespeare’s Narrative Sources: Italian Novellas and Their European Dissemination*: <https://sens.skene.univr.it> (19.03.2023).

representation of the spatial, graphic features of the printed text, offering high-quality images of the physical object that harbours it – i.e., the printed page – the former removes it from its material constraints to foreground its logical structure (see Pierazzo 2017). The virtually boundless capability of digital platforms has encouraged productive solidarity between the two modes, which can now coexist in several fashions: they can be featured in different sections of the same resource, as in the *Internet Shakespeare Editions*;<sup>4</sup> they can be presented next to one another, in a sort of philological competition – *Vespasiano da Bisticci, a semantic digital edition* offers an interesting example in this sense;<sup>5</sup> or they can be blended through mark-up – the TEI initiative provides a comprehensive guide on how to encode texts in images<sup>6</sup> – or OCR software. In the awareness that, under appropriate circumstances, the digital realm allows for the integration of such codification methods, the best option for *SFInC* proved to be MR transcription which, as is known, can be carried out through keyboarding or OCR extraction. The latter is clearly the fastest method, yet most OCR engines are proprietary – so, they require expensive license purchases – and, most importantly, they are known not to work well with early modern prints. Apart from the different preservation statuses of each document, which can affect characters’ sharpness and chromatic contrast, most European Renaissance printers employed the “so-called ‘Aldino’ font, an italic type based on a standard form of calligraphic handwriting” (Mancinelli 2017: 256) that current OCR software has trouble recognizing. The example of Ariosto’s *Cassaria* is rather telling: after running the facsimile of the comedy’s *editio princeps* through the Google Books OCR software, Pierazzo was left to acknowledge that the success rate in text recognition was about 0% (2020, p. 51). Acknowledging the inevitable simplification involved, this problem arises from the fact that OCR engines are mostly trained with modern-day fonts, therefore remaining incapable of recognizing older stylistic varieties. It follows that “training a software” on older fonts, specifically the Aldino, “would be a very useful project for huge corpora of books” (Mancinelli 2016, p. 256) as well as smaller scholarly endeavours – a line of development recently taken up by the OCR-D and OCR4all initiatives in Germany.<sup>7</sup> Focused on flexibility and interoperability, OCR-D promises to elaborate prototype workflows aimed at breaking down the individual steps of automatic text recognition to make them effective on particular layouts and older font groups. According to the researchers involved in the project, the main goals of OCR-D are: training a neural network to recognize font groups commonly used in early modern books; building infrastructure to allow easy training in open source OCR engines and then making them freely available through software like OCR4all (see Baierer *et al.* 2021; Weichselbaumer *et al.* 2020). The prototype, released in early 2020 and currently adopted by 9 German libraries, was geared toward the recognition of Gothic and Antiqua fonts, registering a character error rate (CER) of just 2% (see Weichselbaumer *et al.* 2020). The next announced targets are Italics and the fonts used in England by William Caxton, thus outlining a promising new prospect for a license-free and effective implementation of an OCR workflow in early modern digital scholarly editing.<sup>8</sup>

<sup>4</sup> *The Internet Shakespeare Editions*: <https://internetshakespeare.uvic.ca> (19.03.2023). This resource is currently undergoing a migration to a new platform, LEMDO (<https://lemdo.uvic.ca>), where it will be published under the title of *New Internet Shakespeare Editions*.

<sup>5</sup> *Vespasiano da Bisticci, a semantic digital edition* <http://vespasianodabisticciletters.unibo.it> (19.03.2023).

<sup>6</sup> TEI, *Guidelines for Electronic Text Encoding and Interchange*: <https://tei-c.org/Vault/P5/current/doc/tei-p5-doc/en/html/PH.html> (19.03.2023).

<sup>7</sup> *OCR-D*: <https://ocr-d.de/en/>; *OCR4all*: <https://www.ocr4all.org> (19.03.2023).

<sup>8</sup> On the most recent advances in the field see also Sangiacomo *et al.* 2022.

With these technological improvements lingering on the horizon, manual transcription was still the best solution for *SFInC*, given its affordability and the consistent reduction of post-processing interventions it grants. To carry it out, it was of course important to establish what kind of transcription to realize – a working phase that “imperceptibly slides towards the edition itself” (Pierazzo 2015, p. 74), traditionally obliging the editor to choose between old and modern spelling. The related theoretical and procedural knot remains difficult to untie: whereas normalization diminishes the user’s “awareness of the text’s presence in history” (Flanders 1997, p. 137), it has the obvious advantage of bringing that same text closer to the reading habits of different kinds of users, *de facto* extending the resource’s reach. As the interdisciplinary nature of my research made evident, the dilemma is not confined to early modern English studies. Discussing the ongoing changes in national digital philology, Paola Italia has recently observed that Italian studies are still caught in a “transitional phase, marked by deep-running contaminations between digital and analogic [editorial] practices” (2020, p. 7, my translation) that result in a blended – i.e., undetermined and, for the most part, conservative – approach to digital transcriptions. Similarly, on the French side of the editorial spectrum, scholars have acknowledged the “sense of false familiarity” induced by early modern texts and, to avoid such an effect, have produced editions that are either extremely conservative (Lestringant 2003, p. 119) or fully-fledged modernized. The choice “between old-spelling and modernization continues” then “to be a contentious issue in Renaissance textual scholarship” (Giddens 2017, p. 475), a problem I had to reconcile with the different methodological orientations of the academic communities involved in the very different discipline areas touched by my work.

One of the best qualities of digital resources, however, is that they allow not to choose in the first place. Unaffected by “the same space constraint as print editions” (Pierazzo 2016, p. 157), online platforms can host conservative *and* normalized texts, as well as the hybrid transcription formats that lie in between such poles, as so well testified by the *Internet Shakespeare Editions* or *SENS*. “While the need to provide exhaustive documentation of the editorial process remains (actually, it is enhanced by the accountability made affordable by the digital medium), the need to condense into the most economic form does not” (Pierazzo 2016, p. 157), opening up new pathways for both the curators and the end users. For *SFInC*’s prototype, then, I chose to offer both semi-diplomatic and modernized transcriptions of the digitized scenes, following partially different transcription criteria to respect the conventions of each text’s language and simultaneously reflect and engage with the different practices of the respective scholarly communities. A detailed list of such criteria and related commentary can be browsed in the *Criteri* section of the website, with a view to making all editorial interventions as transparent as possible. The expected outcome of these flexible and plural transcription formats is to broaden the platform’s reach, making it more meaningful to amateur explorers as well as specialized users.



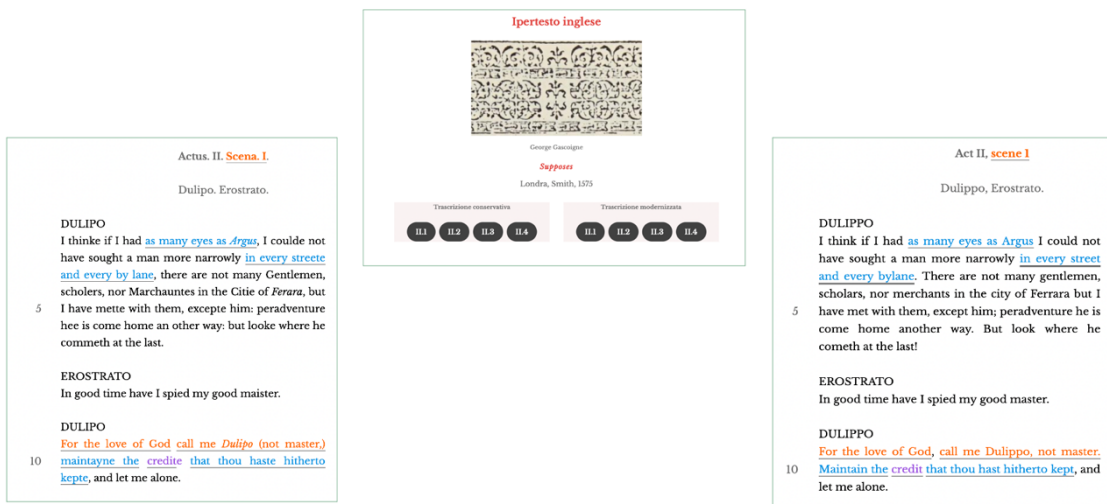


Figure 3  
Screenshot of examples of semi-diplomatic and modernized transcriptions searchable on *SFInC*.

#### 4. Visualization and Representation

Having established editorial and transcriptive criteria for the platform, it was crucial to devise effective visualization and representation strategies to thematize and valorize the texts’ ontology and genetic relationship – a central element for a resource like *SFInC*. To address this particular concern, I implemented two visualization modes between which the users can freely toggle. Clicking on *Commedie* [‘Comedies’] in the top-right-corner navigation bar, the user activates a drop-down menu with the options *Visualizzazione analitica* [‘Analytic display’] and *Visualizzazione sinottica* [‘Synoptic display’]. The former directs to an index page that lists all the digitized scenes, arranged according to their linguistic group (Italian, French, English) and chronological order (from the oldest to the most recent), and labelled based on their genetic relationship (hypertexts and hypotexts, following Genette’s taxonomy 1982). From there, users can choose which scene to explore and in which transcription – semi-diplomatic or normalized. Selecting *Visualizzazione sinottica*, instead, all excerpts can be visualized and browsed at once, as they are displayed in parallel text format – a particularly suitable option, given *SFInC*’s multilingual focus.

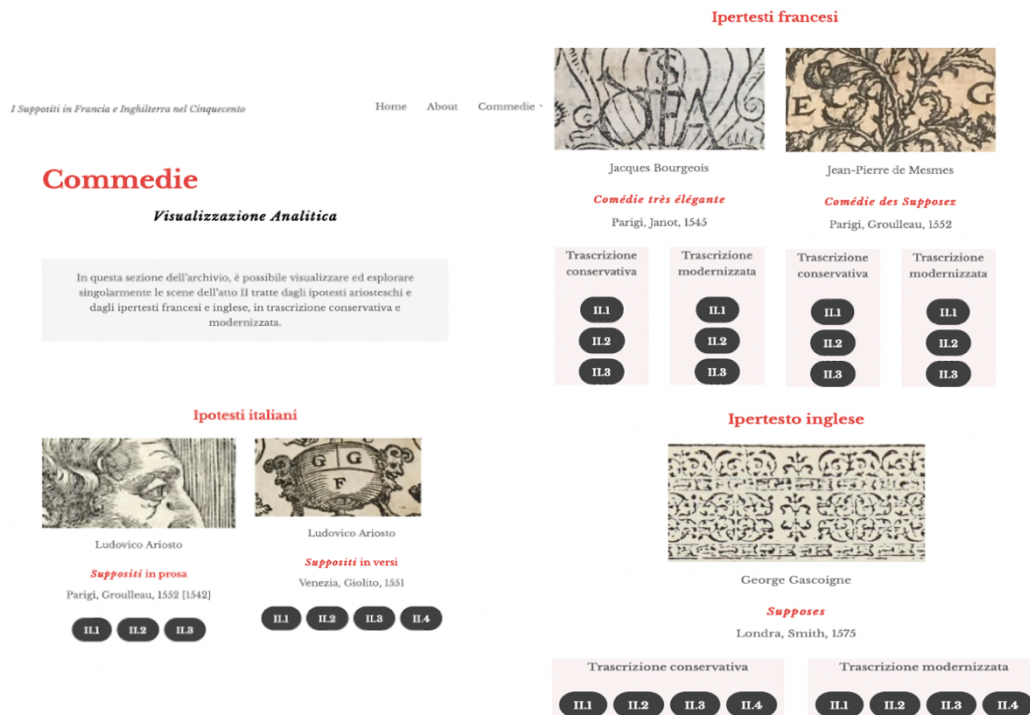


Figure 4  
Screenshots of SFInC's analytic visualization mode (<https://sfir5318471.wordpress.com/analitica/>).

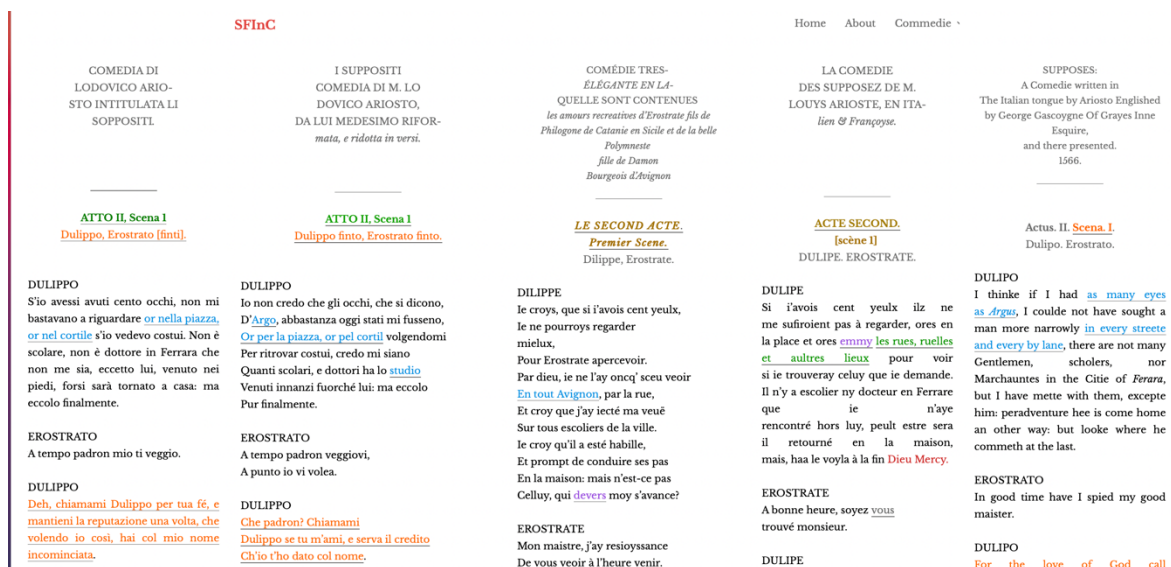


Figure 5  
Screenshot of SFInC's synoptic visualization mode (<https://sfir5318471.wordpress.com/sinottica/>).

The codification of this latter visualization mode proved extremely challenging, since *Wordpress* standard coding made multiple textual alignments not only very difficult to achieve, but also visually chaotic. The texts had to be aligned ‘manually’ through HTML coding and, even then, perfect symmetry between corresponding passages of the texts could not be fully achieved. The development of new tools for textual segmentation and comparison, however, could help solve this problem.

A very promising example in this sense is offered by *HyperMachiavel*, a software tool designed to compare sixteenth-century French translations of Machiavelli's *The Prince*. First launched in 2012, *HyperMachiavel* addresses the lack of flexible digital instruments for intertextual comparison by offering quick automatic alignment functions that “enable a detailed and discriminating linguistic analysis of traditional equivalences using various representational graphs and multilingual searches” (Zancarini 2015, p. 153, my translation). The programme differs from other free alignment tools by virtue of the possibility of working with (and on) extended textual segments and, crucially, with more than two texts simultaneously. Originally thought out to assist linguistic research into aligned XML-TEI corpora, *HyperMachiavel* allows for data export in HTML format as well, as its offshoot website *HyperPrince* testifies. But – and this is one of its most interesting features – its employment is not restricted to this related website. Other platforms, like *HyperVasari*, are implementing its functionalities thanks to the beta package now freely available for download. At present, the software has been set up to work with Italian and French only, but Jean-Claude Zancarini envisages the possibility of future extensions to translations in other languages (2015). One last consideration on the presentation of both texts and annotations on *SFInC*.

One last consideration on the presentation of both texts and annotations on *SFInC*. For a critical hypertextual archive to work properly, it is crucial to signal the presence of hyperlinks in a clear and straightforward manner: visual saliency and content predictability are core features of annotated digital texts, since they “ensure better acquisition and retention” (Fitzsimmons *et al.* 2019, p. 2) by facilitating cue recall in screen-based reading processes. The user should be able, in other words, not only to clearly locate each link within the edited text but also to anticipate the kind of information they will gain access to by clicking on it. Of course, not every denotation strategy serves these purposes. Especially when dealing with early modern prints, “**underlining**, **boldfacing**, or *italicizing* annotated words might be mistaken as a textual, rather than an editorial feature” (Worthen 2012, p. 208), with the effect of misleading the user. The solution adopted to curb the problem in *SFInC*'s case (and the one currently shared by many similar resources)<sup>9</sup> is colour-coding. The association between colour and content is shared with the user through a table located at the top-right corner of each text: light blue indicates the presence of thematic or cultural insights into the text; orange corresponds to discussions of the text's philological peculiarities; green highlights stylistic and translational variations; pink refers to performative aspects embedded in the script; yellow to material features of the witness, such as handwritten annotations or expunctions; red to interpolations; and lilac to external links to dictionaries and encyclopedias such as *Lexicons of Early Modern English* or *Grande Dizionario della Lingua Italiana*.<sup>10</sup> The system is validated not only by the relative semantic neutrality of colour-coding in editorial contexts (see Worthen 2012) but also by recent experimental research on the impact of coloured words on reading behaviours outside and inside Web contexts. After testing users' visual and kinesthetic response to coloured hyperlinked words through a set of eye-tracking experiments, Fitzsimmons *et al.* have in fact noticed “a tendency to re-read sentences that contained hyperlinks” (2019, p. 18), especially when associated with uncommon expressions, as is often the case with early modern texts. This demonstrated, in turn, the positive influence of coloured words on “eye movement behaviour” and information retention.

<sup>9</sup> One of the leading examples is the *Internet Shakespeare Editions* (<http://internetshakespeare.uvic.ca>).

<sup>10</sup> *Lexicons of Early Modern English* (LEME): <https://leme.library.utoronto.ca>; *Grande dizionario della lingua italiana* (GDLI): <https://www.gdli.it>.

ACT II, [scene 3](#)

Dulippo, alone.

DULIPO  
 This [gear](#) hath had no evil beginning, if it continue so and fall to happy end. But is not this the silly Doctor with the side-bonnet, the [doting](#) fool that dare presume to become a suitor to such a peerless paragon? O, how covetousness doth blind the common sort of men! Damon, more desirous of the dower than mindful of his  
 5 gentle and gallant daughter, hath determined to make him his son-in-law, who for his age may be his father-in-law, and hath greater respect to the abundance of goods than to his own natural child. [He beareth well in mind to fill his own purse, but he little remembreth that his daughter's purse shall be continually empty, unless Master Doctor fill it with double duck eggs.](#) Alas, I jest and have no joy; I will stand here aside and laugh a little at this [lobcock](#).

*Dulippo espieth the Doctor and his man coming.*

**Legenda degli approfondimenti**

	Temi
	Filologia
	Stile
	Performance
	Esemplare a stampa
	Interpolazioni
	Glossari
(LEME, Merriam-Webster)	

Figure 6  
 Example of hyperlinking and colour-coding on *SFInC*.

At the moment, colour-coding seems then to be the simplest and most effective annotation strategy available for digital scholarly editions. Nonetheless, “conceptual change in annotation models and processes is also on the horizon” (Abrami *et al.* 2021, p. 65). An intriguing potential advance in the field is anticipated by programmes like VAnnotatoR, a 3D tool for action-based annotations of textual and multimodal objects:

VAnnotatoR provides a three-dimensional annotation area that allows annotators to orient themselves within 3D scenes containing representations of natural objects (e.g., accessible buildings) and semiotic aggregates (texts, images, etc.) to be annotated or interrelated. A basic principle of annotating by means of VAnnotatoR is to manifest, trigger and control annotations with gestures or body movements (Spiekermann *et al.* 2018, online).

Moving from the idea that human information processing is mostly spatial, VAnnotatoR enables the annotation and linkage of semiotic aggregates (texts, images and their segments) through the performance of natural gestures like pointing and grasping. Set within a VR action space that allows for multiple, though not yet simultaneous interactions, users can engage with manipulable 3D objects which can be networked to generate multimodal hypertexts (Spiekermann *et al.* 2018, online).

As enthralling as this may appear, at present VAnnotatoR has been tested only on Wiki articles and the data model provided by the biographies of the *Stolperwege* project (2018), aimed at virtualizing information extracted from Nazism victims’ biographies by encoding them into a multimodal hypertext. If it is possible to imagine its integration in digital scholarly editing – perhaps by bringing edited texts to virtual life and/or allowing for multimodal annotations of genetically related material – such an evolution is still barely visible on the DH horizon.

## 5. Conclusion

In its relative simplicity, *SFlnC*'s first prototype has proved capable of adapting to the many-sidedness of my research, allowing to thematize a dataset of linguistically, culturally, and chronologically different texts. Nonetheless, the limitations of the resource must be acknowledged. A sheer six months after its release I noticed, for instance, that *Wordpress* had run a system update that had impacted upon the visualization of the digitized extracts, misaligning the line numbers I had manually matched with the corresponding section of each prose text. This takes us back to the lack of feasible alignment software for digital editions and to the constant technological mutations and updates that, particularly on non-proprietary hosting platforms, can jeopardize years' worth of coding and matching.

This precarity is notoriously a crucial aspect of DH work, for better or worse. On the one hand, digital preservation is “a big, important, looming issue” in the field (Estill 2019, p. 7), mostly arising from the lack of continuous financial, technical, and institutional support. In her 2019 survey, Laura Estill has pointed out that more than half of the websites listed in early 2000s bibliographies of early modern digital projects (Evans 2000; Hopkins 2002; Ziegler 2001) are now offline. Among the (few) surviving ones, many have become static due to obsolete technology or broken hyperlinks, as the very well-known cases of *The Shakespeare Quartos Archive* or *Shakespeare's World*<sup>11</sup> testify. Others have changed domain name and purpose (*Shakespeare's Globe*<sup>12</sup>) or have been merged to create brand new platforms, a glaring example being *Linked Early Modern Drama Online (LEMDO)*, an under-construction website designed to bring together the now static *Internet Shakespeare Editions (ISE)*, the *Digital Renaissance Editions (DRE)*, and the *Queen's Men Editions (QME)*.<sup>13</sup> On the other hand, this same ephemerality allows for virtually endless expansions and improvements, which can in turn lead to more rigorous scholarly practices and proficient workflows.

Whichever surprising innovation the future holds, digital scholarly resources remain “projects” that thrive (or perish) in a “continuous, open, extended process” of recreation and redefinition. “The field is dynamic and locally inflected enough that theory can't” always “catch up” (Morgan 2019, p. 26), but some procedural turnarounds seem to be right behind the corner – the most intriguing ones being the possibility of speeding up transcription processes through better trained OCR software, the implementation of open access alignment tools to improve the visualization and analysis of parallel texts, and new annotation modalities inspired by human processes of information acquisition. It is worth exploring such prospects while also encouraging reflection on hands-on DH practice at present. “The pragmatics of digitizing, archiving, designing, coding, analyzing, and publishing digital objects [...] are more than a narrow utility. They embody investigation and creativity” (Thompson Klein 2017, p. 27), illuminating possible ways forward in both theory and practice for what remains a partially uncharted field.

<sup>11</sup> Shakespeare Quartos Archive: <http://quartos.org>; *Shakespeare's World*: <https://www.zooniverse.org/projects/zooniverse/shakespeares-world> (19.03.2023).

<sup>12</sup> *Shakespeare's Globe*: <https://www.shakespearesglobe.com>.

<sup>13</sup> *Linked Early Modern Drama Online*: <https://lemdo.uvic.ca>; *Digital Renaissance Editions* <https://digitalrenaissance.uvic.ca>; *Queen's Men Editions*: <https://qme.uvic.ca> (19.03.2023), recently relaunched at <https://lemdo.uvic.ca/qme/>.

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